

**FULL AUTHORITY MEETING**  
**Wednesday October 21, 2015 9:30 am**  
**Ball's Falls Centre for Conservation – Glen Elgin**  
**3292 Sixth Avenue; Jordan, ON**

**A G E N D A (Revised)**

■ **9:30 am PUBLIC MEETING**

- ◆ **DECLARATION OF CONFLICT OF INTEREST**
- ◆ **ADOPTION OF AGENDA**
- ◆ **STAFF RECOGNITION**
- ◆ **DELEGATION(S):**
  - A. Scott Sweitzer – 215 Pelham Road; St. Catharines
- ◆ **BUSINESS**
  - (1) A. Full Authority Draft Meeting Minutes — September 16, 2015
  - B. Committee Minutes -
    - ① Audit Committee Meeting – Sep 2, 2015
    - ② Budget Steering Committee – Sep. 17, 2015
    - ③ Cave Springs Steering Committee – July 28,
    - ④ CLAC – August 13, 2015
  - (2) Business Arising From Minutes
  - (3) Correspondence - Hamilton letter dated Oct.2, 2015
  - (4) Chairman's Remarks
  - (5) Chief Administrative Officer Comments

■ **REPORTS FOR INFORMATION**

- (6) Project Status Reports:
  - 1. *Watershed Management*----- **Report No. 100-15**
  - 2. *Operations*----- **Report No. 101-15**
  - 3. *Corporate Services*----- **Report No. 102-15**

- (7) 2015 Capital Projects – Quarterly update ----- **Report No. 103-15**
- (8) Financial & Reserve Status – Ending Sep 30, 2015 ----- **Report No. 104-15**
- (9) CityView Implementation Update ----- **Report No. 105-15**
- (10) Forestry & Tree and Forest Conservation Bylaw ----- **Report No. 106-15**

### REPORTS FOR CONSIDERATION

- (11) “Weighted Vote” Policy----- **Report No. 107-15**
- (12) 2016 Operating and Capital Budget----- **Report No. 108-15**
- (13) Conservation Area Rates & Fee Schedule 2016----- **Report No. 109-15**
- (14) Morningstar Mill ----- **Report No. 110-15**
- (15) Glanbrook & Tyneside Trail Mtnce. Agreement ----- **Report No. 111-15**
- (16) RAP Impairment Re-designation Process ----- **Report No. 112-15**
- (17) 215 Pelham Road City of St. Catharines ----- **Report No. 113-15**
- (18) Other Business

### CLOSED SESSION

#### ◆ DECLARATION OF CONFLICT OF INTEREST

- (1) Violations Status Verbal Update

### PUBLIC SESSION

#### ◆ Resolution(s) from closed session

#### ◆ ADJOURNMENT

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# CORRESPONDENCE

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- City of Hamilton (date October 2, 2015)

October 21, 2015 Full Authority Meeting

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City of Hamilton  
City Hall, 71 Main Street  
West, 1<sup>st</sup> Floor  
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Stephanie Paparella  
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October 2, 2015

Carmen D'Angelo, BSc  
CAO/Secretary-Treasurer  
Niagara Peninsula Conservation Authority  
250 Thorold Road West  
Welland, Ontario L3C 3W2



**Re: 2016 Budget Submission for the Niagara Peninsula Conservation Authority**

Dear Mr. D'Angelo:

This letter is to request that your organization submit a draft budget request to the City of Hamilton, to the attention of Cyrus Patel, Budget and Finance Division, 71 Main Street West, Hamilton, Ontario L8P 4Y5, by **Friday, November 20, 2015**.

As you know, the City of Hamilton has appealed the NPCA's levy apportionment for 2015. Once again, and pending determination of the appeal, we request that you reconsider the 2015 apportionment and bring it in line with past practice. For the 2016 apportionment, we request that it too be brought in line with past practice or that it be based upon other fair and appropriate factors (e.g., only assessed values of properties within your watershed).

As well, please be advised that at its meeting of September 23, 2015, Council approved sub-section (b) of Item 2 to the General Issues Committee Report 15-017, which reads as follows:

**2. 2016 Budget Guidelines, Preliminary Outlook and Process (FCS15062) (City Wide) (Item 7.2)**

- (b) That Boards and Agencies be requested to submit their 2016 operating budget based on an increase of **1.0%**, and that any increase beyond the guideline, be forwarded for consideration with an appropriate explanation.

We ask that your submission be accompanied by a copy of your organization's most recent audited financial statements; and, as it relates to maintenance costs and capital project costs for the succeeding year, information showing how these costs have been apportioned according to the benefit derived or to be derived by the City of Hamilton specifically. If you have any questions in this regard, please contact Cyrus Patel at (905) 546-2424 Ext. 7698.



The General Issues Committee will be meeting on **Tuesday, January 26, 2016** to consider your budget submission, at which time you will be given the opportunity to provide a presentation to the Committee.

Sincerely,

A handwritten signature in cursive script, appearing to read "S. Paparella".

Stephanie Paparella  
Legislative Coordinator  
Office of the City Clerk

# REPORTS FOR INFORMATION

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- ❖ **REPORT NO. 100-15** – *Project Status – Watershed Management*
- ❖ **REPORT NO. 101-15** – *Project Status - Operations*
- ❖ **REPORT NO. 102-15** – *Project Status – Corporate Services*
- ❖ **REPORT NO. 103-15** – *Capital Projects 2015 – Quarterly report*
- ❖ **REPORT NO. 104-15** – *Financial & Reserve Report – Sep 30, 2015*
- ❖ **REPORT NO. 105-15** – *CityView Implementation update*
- ❖ **REPORT NO. 106-15** – *Forestry by-law*

October 21, 2015 Full Authority Meeting

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**Report To:** Board of Directors

**Subject:** Watershed Management Status Report

**Report No:** 100-15

**Date:** October 21, 2015

## **RECOMMENDATION**

That Watershed Management Status Report No. 100-15 be received for information.

### **A. Plan Review & Regulations**

#### **1) Municipal and Development Plan Input and Review**

The Watershed Management Department is responsible for reviewing *Planning Act* applications and Building Permit applications where there is a feature regulated by the NPCA. Under the Memorandum of Understanding (MOU) with Niagara Region, the NPCA reviews *Planning Act* applications with respect to the Region's Natural Environment Policies (Chapter 7 of the Regional Official Plan).

During September, 2015, the Watershed Management Department reviewed 36 *Planning Act* applications (various type and complexity), 4 Niagara Escarpment Commission Development Permit applications, 17 Building Permit applications, and 7 property information requests. Staff also responded to various inquiries from the public and local municipalities, as well as attended weekly consultation meetings with the local municipalities and conducted various site inspections. A breakdown of the application review is provided below.

It should be noted that the statistics for Plans of Subdivisions/Condominiums does not include on-going administration work (reviewing detailed engineering design reports, reviewing tree saving plans, reviewing agreements, reviewing revised submissions, and other such tasks).

#### **September 2015**

|   |           |
|---|-----------|
| <b>Plan of Subdivision/Condominium</b>                    | <b>2</b>  |
| <b>Site Plan Control</b>                                  | <b>5</b>  |
| <b>Official Plan Amendments</b>                           | <b>1</b>  |
| <b>Secondary Plans</b>                                    | <b>1</b>  |
| <b>Zoning By-law Amendments</b>                           | <b>6</b>  |
| <b>Consents to Sever (including lot line adjustments)</b> | <b>16</b> |
| <b>Minor Variances</b>                                    | <b>5</b>  |
| <b>Niagara Escarpment Commission Development Permits</b>  | <b>4</b>  |
| <b>Renewable Energy Projects</b>                          | <b>0</b>  |

**2) NPCA 'Regulation of Development, Interference with Wetlands, and Alteration to Shorelines and Watercourses'**

| PERMIT # | MUNICIPALITY   | ADDRESS                  | WORKS PROPOSED /PURPOSE                           | REGULATED FEATURE             | TOTAL DAYS | COMMENTS   |
|----------|----------------|--------------------------|---|-------------------------------|------------|--|
| 3457 A   | Port Colborne  | 2380 Main Street East    | Horse Barn with Addition                          | Beaver Dam Drain Floodplain   | 2          |  |
| 3525 A   | St. Catharines | 1258 Old Martindale Road | Garage and Septic Installation                    | PSW Buffer                    | 9          |  |
| 3643     | Wainfleet      | 73845 RR#27              | Tile Outlet into Wetland                          | Wetland/Lands Adjacent        | 127        | Complete application not until August 20, 2015 therefore only 22 days to complete permit |
| 3600 A   | Wainfleet      | 10719 Lakeshore Road     | New Home  | Lake Erie Shoreline           | 2          | Amending of original Permit issued August 18, 2015                                       |
| 3602     | Niagara Falls  | Warren Woods Subdivision | Stormwater Management                             | Lands adjacent to watercourse | 126        | Complete application as of August 28, 2015 therefore only 33 days to complete permit     |
| 3626     | St. Catharines | 650 to 670 Read Road     | Improvements to existing Waterfront Pathway       | Lake Ontario Shoreline        | 42         | Complete application not until Sept 8, 2015 therefore only 2 days to complete permit     |
| 3628     | Thorold        | 1216 Cataract Road       | Garage Addition                                   | Floodplain                    | 12         |  |
| 3629     | Wainfleet      | 73782 Regional Road 27   | Garage Addition                                   | Welland River                 | 8          |  |
| 3630     | Haldimand      | 2964 North Shore Drive   | Shorewall   | Lake Erie Shoreline           | 15         |  |
| 3631     | Fort Erie      | 3532 River Trail         | New Home  | Lands adjacent to watercourse | 15         |  |
| 3632     | West Lincoln   | 5050 Canboro Road        | Dock Installation                                 | Welland River                 | 15         |  |
| 3633     | NOTL           | 677 Carlton Street       | Broadband Cable installation under Six Mile Creek | Six Mile Creek                | 8          |  |

|              |                |   |   |                               |    |  |
|--------------|----------------|---|---|-------------------------------|----|--|
| 3634         | West Lincoln   | 300 metres southwest of Sawmill Road and Centre Street intersection | Integrity Dig   | 15 Mile Creek                 | 35 | Complete application not until Aug 27, 2015 therefore only 4 days to complete permit     |
| 3635         | Hamilton       | 6060 to 6260 Airport Road   | Roadside Ditching                                     | Lands adjacent to watercourse | 3  |  |
| No Objection | Welland        | 220 Willowlanding Court   | Storage Shed  | Lands adjacent to watercourse | 15 |  |
| 3636         | Wainfleet      | 10409 Lakeshore Road  | Garage  | Lake Erie Shoreline           | 13 |  |
| 3637         | Port Colborne  | 23 Erie Street (Mud Lake)   | Pond and Dam Maintenance                              | Mud Lake                      | 37 | Required complex review.   |
| 3638         | Niagara Falls  | 9578 Carl Road  | Garage  | Lands adjacent to wetland     | 9  |  |
| 3639         | Lincoln        | 4362 Jordan Road  | Culvert   | Alteration to watercourse     | 12 |  |
| 3640         | St. Catharines | 23 Arlene Street  | Above Ground Pool                                     | Lands adjacent to watercourse | 9  |  |
| 3641         | Niagara Falls  | 10717 Niagara River Parkway   | Vegetation Clearing/Building Envelope Determination   | PSW                           | 15 |  |
| 3642         | Grimsby        | 551 Mud Street East   | Directional Bore under Spring Creek                   | Lands adjacent to watercourse | 9  |  |
| 3644         | St. Catharines | 18 Bayview Drive  | Shorewall and New Home Construction                   | Lake Ontario Shoreline        | 31 | Complete application not until August 17, 2015 therefore only 25 days to complete permit |
| 3645         | Grimsby        | West End Trail  | Miscellaneous Works                                   | Lake Ontario Shoreline        | 6  |  |
| 3646         | West Lincoln   | 6678 Townline Road  | Bell Cable Installation                               | Lands adjacent to watercourse | 19 |  |
| No Objection | NOTL           | 65 William Street   | New Deck  | Lands adjacent to watercourse | 9  |  |
| 3647         | Wainfleet      | 50639 Green Road South  | New 1.5 Storey Garage                                 | PSW Buffer                    | 8  |  |
| 3648         | Pelham         | 1046 Staines Street   | Septic System Replacement                             | Lands adjacent to watercourse | 6  |  |
| 3649         | NOTL           | Various   | Vegetation Management Demonstration                   | Watercourses/ wetland buffer  | 22 |  |
| 3650         | Wainfleet      | 12369 Lakeshore Road  | Moving cottage access and placing poured concrete pad | Lake Erie Shoreline           | 5  |  |

|              |              |                                   |   |   |    |  |
|--------------|--------------|-----------------------------------|---|---|----|--|
| 3652         | Pelham       | 777 Foss Road                     | Culvert Replacement                                   | Watercourse alteration                          | 22 |  |
| 3653         | NOTL         | South Side Lakeshore Road         | Enbridge Gas Directional Drilling to install Gas Main | Lands adjacent to watercourse                   | 27 |  |
| 3654         | Wainfleet    | 1199 Wainfleet/Dunnville Townline | Greenhouse Addition and Storage Building              | Lands adjacent to wetland                       | 11 |  |
| 3655         | Thorold      | 3547-3557 Thorold Townline Road   | Household Hazardous Waste Depot                       | Lands adjacent to wetland                       | 3  |  |
| No Objection | NOTL         | 1591 Concession 4 Road            | New Garage  | Project moved outside of all regulated features | 5  |  |
| No Objection | West Lincoln | 3976 Highway 20                   | Regional Ditch Maintenance                            | Lands adjacent to watercourse                   | 10 |  |
| No Objection | NOTL         | 42 Ann Street                     | Swimming Pool Installation                            | Lake Ontario Shoreline                          | 5  |  |

### 3) Tree and Forest Conservation By-law - See Forest By-Law Summary Report

### 4) Watershed Biology

In September the Watershed Ecological Technicians (Amy and Adam) provided biology reviews for a variety of planning and regulations files, completing at least 12 site visits for planning pre-consultation or permit application review, including formal follow up with internal and external biology comments.

The Ecological Technicians also completed approximately 15 Permit applications, with formal natural heritage comments being submitted to the Supervisor of Construction Approvals. A large focus of the Permit review in September was related to culvert replacement, drain maintenance activities and utility line installations.

Thanks to Amy for coaching Adam during his training for his new position with the NPCA, her expertise is greatly appreciated.

The Ecological Technicians have been providing their assistance and expertise to other projects. Adam assisted the MNRF with electrofishing the Welland River, assisted the NPCA restoration department with a vegetation survey in Port Colborne, and worked on enhancing his tree identification skillset, and Amy took part in meeting with the Cave Springs Writing Committee to begin the review of other Conservation Area Master Plans and to determine what should be included in the draft Cave Springs Master Plan.

As a member of the Joint Occupation Health and Safety Committee, Amy has also been conducting crossover workplace inspections at other conservation areas including the Central Workshop, Long Beach and the St. John's Valley Centre.

September was a busy month for large complex files, and the Supervisor of Watershed Biology conducted several site visits and meetings for files such as Paradise Niagara (Niagara Falls), the Miller Lands (Fort Erie), Grand Niagara (Niagara Falls), and the Niagara-on-the-Lake Official Plan review. Scoping and review of several Environmental Impact Studies has also been completed.

The Supervisor of Watershed Biology participated in a Chapter 5 Drainage Superintendents of Ontario meeting which was hosted at the NPCA. The group discussed many drainage and environmental related topics including the current Provincial review of the Conservation Authorities Act.

## **B. Projects / Programs**

### **1) Source Water Protection Plan**

- Staff continue to provide support to the municipalities and MOECC in source protection as needed.
- Staff held a source water protection orientation workshop on October 15<sup>th</sup> at Ball's Falls Centre for SPC members, source protection staff and interested board members.

### **2) Water Quality Monitoring Program**

- Staff continue with routine monitoring at 75 surface water stations within the NPCA watershed.
- The NPCA summer Assistant Water Resources Technician successfully completed an update to the water quality database import functions. This has increased overall efficiency and accuracy of water quality data input for NPCA Water Quality Monitoring Program.
- Provincial Groundwater Monitoring Network (PGMN): Staff are completing the fall portion of PGMN sampling at 13 sites and performing a QA/QC check on groundwater level data as part of their routine data maintenance protocol.
- To-date, the NPCA has received nine (9) applications under the Well Water Decommissioning Program and have completed 6 projects.
- The NPCA Water Quality Monitoring team is continuing with several collaborative projects in 2015. These include:
  - 1) The Microbial DNA Trackdown with Environment Canada and McMaster University,
  - 2) Climate Change Station with MOECC at Balls Falls;
  - 3) North Creek (West Lincoln) Nutrient Evaluation with MOECC;
  - 4) Reference Creek Study with MOECC; and
  - 5) Neonicotinoids monitoring for MOECC at Four Mile Creek (NOTL) and North Creek (West Lincoln).

### 3) Flood Control

#### a) Monitoring & Major Maintenance

- Binbrook Reservoir – Due to the extended dry summer, the reservoir's water level is presently sitting approximately 1.5 feet (450mm) below normal operational holding level. Discharge from the reservoir over the summer has been minimal. Staff continue to monitor reservoir water levels on a daily basis and make adjustments as warranted.
- Staff continue to monitor daily the water levels at our 14 stream gauge stations, climatic data at our 15 climate stations, and undertake routine maintenance, calibration, and inspections at all 29 installations, as part of the NPCA's routine **Flood Forecasting and Warning** duties. The public may access this real-time water level and rainfall information through the NPCA's website.
- In September staff attended the annual meeting of the *Provincial Flood Forecasting and Warning Conference* in order to ensure that the NPCA flood forecasting and warning efforts remain consistent and integrated with the Province and our local Conservation Authorities.
- As the grout on the outer masonry walls of the Binbrook Dam Control Building have continued to degenerate, the NPCA addressed this issue as part of the NPCA's 2015 'Water and Erosion Control Infrastructure (WECI)' project. The masonry walls have been re-grouted and a new man-door has been installed at the Control Building to replace the old corroding one. These works were completed late September at a total cost of \$20,000 with the WECI program picking up 50% of the cost of the project.
- In early October, NPCA staff undertook the semi-annual inspection of the Binbrook Dam. The facility was found to be in good shape and no defects or action items were noted.

#### b) Water Resource Engineering

- NPCA staff attended the quarterly meeting of the Conservation Authorities 'Coastal Working Group'. The purpose of this group is to provide a forum for staff from different Conservation Authorities to discuss issues, development, regulation, and the nature of hazards which occur along the Great Lakes shorelines.
- Staff continue to provide daily support to the Planning and Regulations program with respect to the analysis of natural hazards and the review of stormwater management engineering designs.

### 4) Restoration

#### Project Implementation – Watershed Plans

The Watershed Restoration Program is responsible for improving water quality, water quantity and biodiversity within the NPCA Watershed. The Restoration Program advances these areas through the implementation of our watershed plans.



## **Project Implementation – Voluntary Stewardship**

Staff are currently completing over 65 stewardship projects approved for implementation in 2015.

### **Ducks Unlimited Partnership**

Ducks Unlimited Canada and the NPCA have been working collaboratively together with Niagara landowners who are interested in undertaking wetland projects on their property since 2002. This collaboration allows for the sharing of expertise and resources. With the mutual goal of increasing wetland habitat in areas of Niagara where these features are lacking, together we have successfully implemented over 60 joint wetland projects, creating 170 acres of wetlands with a total project value of \$1.1 million dollars.

The NPCA renewed its on-going collaboration agreement in September for the implementation of five (5) wetland projects of mutual interest. All 5 projects are in design phase. Once constructed, they will result in an additional 6 acres of wetland habitat created and an additional 121 acres of naturalized area around the wetlands, including flowering trees, shrubs and wildflowers to support declining bee and butterfly populations.

### **Project – “Healing Waters”**

October 6th and 7th saw Restoration staff working closely with Trout Unlimited Niagara volunteers to host the 3rd annual *Soldier On Project Healing Waters* event in Pelham, hosted at the Leavens Family / NPCA Wetland Restoration Project site.

The two-day event is part of the wounded soldiers' rehabilitation process. The calm and quiet nature of fly fishing is therapeutic and used as a recovery strategy by groups as diverse as cancer survivors to Post Traumatic Stress Disorder sufferers. “Fly tying requires concentration and fine motor skills and is a calming exercise,” explains TUC President Dennis Edell. “The couple of days we spend with the soldiers are extremely positive and as fly fishermen we are honoured to help in our own unique way,” he added.

Carmen D'Angelo and his wife Ellen joined the volunteers and soldiers for a welcome dinner where he thanked the soldiers and introduced them to the NPCA and our work. He told the group that partnering with Trout Unlimited for this project is something the organization (NPCA) fully supports. “Trout Unlimited Niagara does a wonderful job with this project and we are happy to do what we can to support them and the brave men and women of our Canadian Armed Forces.”

Since its inception in 2006, Soldier On has helped more than 1,300 ill and injured members to obtain sporting or recreational equipment, gain access to high-level training from world-class instructors, and supported their participation in a wide range of structured activities from alpine skiing to fishing to adventure expeditions.

This year 10 Canadian soldiers spent time here in Niagara, enjoying our hospitality and learning a new skill. It is a very rewarding experience for all NPCA staff involved.

## **Port Dalhousie Naturalization (Pollinator) Project**

Staff have been working with the Port Dalhousie Beautification and Works Committee, a group working to make aesthetic and ecological improvements to the Port Dalhousie area of St. Catharines. On August 22nd, approximately 40 people from the Port Dalhousie community helped plant 3 pollinator gardens at Rennie Park. The project was done in partnership with the Niagara Restoration Council, the St. Catharines Green Advisory Committee and the NPCA.

Approximately 3,000 wildflower and grass plugs and 100 native shrubs were installed to provide host and nectar plants for pollinators on their migratory path across Lake Ontario.

The City will be doing the maintenance on the gardens and the second phase of this project will be the naturalization of Rennie Island in 2016.

## **Niagara River Remedial Action Plan (RAP) Stage 3: *Charting a course to delisting the Areas of Concern (AOC)***

The RAP Coordinating Committee met for their quarterly meeting at Ball's Fall's Centre for Conservation on September 15, 2015. A report by Ministry of Natural Resources concerning the status of fish population health in the Niagara River was reviewed at the meeting. The committee will be looking for evidence that the RAP delisting criteria will be satisfied and what measures need to be considered for progress.

The RAP requires a review of the Niagara River Remedial Action Plan Technical Assessments for the Degradation of Benthos and the Eutrophication or Undesirable Algae Beneficial Use Impairments (BUI). The conclusion of both these assessments recommends a re-designation of the BUI status from "impaired" to "unimpaired". In order to fulfill the re-designation process, stakeholder and public review of the assessments is required. Public friendly guidance documents of each technical assessment are required to assist with the facilitation of this process. An Outreach and Community Engagement Strategy is being developed for "de-listing" the Area of Concern.

## **5) Special Projects**

- Staff provided comments on planning applications, Niagara Escarpment Commission permits and Part 8 Building Permits for Niagara Region and local municipalities under the Planning Memorandum of Understanding.
- Staff continued the water resources investigation of Cave Springs to support the Master Plan.
- Staff welcomed Trevor White, third year Geological Engineering Student from University of Waterloo for a four month co-op term.
- Staff continued work on the Bedrock Valley Aquifer Study. Tasks included water level monitoring, monitoring well hydraulic and water quality testing. project management and annual reporting, with Ontario Geological Survey and McMaster University. The photos below show David Peck (Blumetric Environmental), Trevor White (University of

Waterloo) and Caitlin McEwan (McMaster University Researcher) at the Haldibrook Road well in the Township of West Lincoln.


- Staff attended a Conservation Ontario geoscience meeting and assisted with the source protection orientation workshop.



**Prepared by:**

  
Peter Graham, P.Eng.  
Director, Watershed Management

**Respectfully submitted by:**

  
Carmen D'Angelo, CAO/Secretary-Treasurer

*This report was prepared with consultative input from Suzanne McInnes, MCIP, RPP – Manager, Plan Review and Regulations, Brian Wright, P.Eng. – Manager, Watershed Projects and NPCA staff.*

**Report To:** Board of Directors

**Subject:** Operations Status Report

**Report No:** 101-15

**Date:** Oct. 21, 2015

**RECOMMENDATION:**

That the NPCA Board **RECEIVE** Report No. 101-15 for information.

**PURPOSE:**

Operations Status Report

**DISCUSSION:**

- **Ball's Falls CA**

Staff have been making preparations for the Thanksgiving Festival which has included the installation of new hydro services for the tent closest to 6<sup>th</sup> Ave and the stage, located in the field behind the pavilion. Internet service for the Center for Conservation is being upgraded and access points are being provided for WIFI on the Festival grounds for the vendors.

Shaftsbury Murdoch Mysteries IX has contacted park staff in order to do a part of an episode filming at Ball's Falls Conservation Area for their Season 9 production of Murdoch Mysteries that airs on the CBC. This will likely happen on October 6<sup>th</sup> and 7<sup>th</sup>.

Although youth have returned to school, admissions are still up.

For the month of September, Ball's Falls sold:

|   |     |
|---|-----|
| Adults admissions                             | 624 |
| Seniors/students admissions                   | 289 |
| Children admissions                           | 39  |
| Maximum - vehicles admissions                 | 98  |
| Self-pay admissions                           | 31  |
| Regular membership pass                       | 1   |
| Senior membership pass                        | 0   |
| Membership renewals                           | 1   |
| Pavilion Rentals                              | 1   |
| Historical Tours given                        | 1   |
| Barn Wedding Receptions                       | 12  |
| Church Ceremonies                             | 6   |
| Centre for Conservation - wedding receptions  | 4   |
| Centre for Conservation – non wedding rentals | 10  |

*Respectfully Submitted by Nathaniel Devos, Park Superintendent at Ball's Falls Conservation Area*

- **Binbrook CA**

Hunting Season

The waterfowl hunt is scheduled to begin Saturday September 26th and continue every Saturday and Monday thereafter until early December. All the Lottery Dates have been filled for the first two weeks of the season and we are continuing to receive additional reservations for the remainder of the scheduled hunting dates. The program continues to be strong and earn some additional revenue. The number of birds harvested fluctuates year-by-year due to many environmental factors.

Water Treatment Facility Inspection

Routinely every four years, the City of Hamilton's Public Health Unit inspects Binbrook's Water Treatment Facility to ensure that Safe Water regulations are being met. The inspection was positive and successful.

*This report was respectfully submitted by Mr. Mike Boyko, Park Superintendent*

- **Chippawa Creek CA & Long Beach CA**

Both Campgrounds have remained busy beyond Labour Day Weekend, even with a significant reduction in summer staff due to school resuming.

Chippawa Creek Conservation Area, in September, had 76 camping transactions, 243 Day Pass Sales, and 356 individual Retail Sales.

Annually, Chippawa Creek Conservation Area hosts several school Track Meets. To date, they have hosted 3 events for the District School Board of Niagara and the Catholic School Board of Niagara; with approximately 1200 students in attendance.

Upcoming Capital Projects for Chippawa Creek Conservation Area includes the re-siding of the Original Comfort Station and an expansion of the parking area by the Pavilion. These will be done after the Thanksgiving Weekend once campers have left for the season.

Long Beach Conservation Area held its first "Movie Night In The Park" in August. The Lego Movie was shown by "To The Moon And Back Productions." The event was well attended.

The Ministry of Natural Resources has reassessed their previous directive for Long Beach and are now allowing staff to clean the beach more regularly and remove the overgrowth that has grown up over the past few years.

Senior Park Staff led a Seasonal Camper's meeting at both parks on Saturday September 26<sup>th</sup>. The overall outcome was very positive. Staff were praised for their efforts and good work at both locations.

Finally, grass cutting and regular maintenance continue at both parks. Both parks are gearing up for closing on Monday October 12<sup>th</sup>.

*Respectfully Submitted by Rob Kuret, Park Superintendent, Chippawa Creek CA, and Mike MacIntyre, Park Superintendent, Long Beach CA.*

- **Central Workshop – Gainsborough CA**

The team at the Central Workshop continues to be busy. Aside from regular grass cutting and other maintenance activities at all our passive parks, they have also been working on a number of Capital related projects including the installation of the a new steel roof on the gatehouse at Chippawa Creek Conservation Area and a new steel roof on the Pavilion at Stevensville Conservation Area. A new additional pump was also installed at the Wainfleet Wetlands Conservation Area.

The Waterfowl Hunting Program continues at Mud Lake this season. The Lottery was successfully filled again. The Season opens on Saturday September 26<sup>th</sup>. Hunting Blinds were repaired in early September.

Staff is now in full swing to support the upcoming Thanksgiving Festival at Ball's Falls Conservation Area. The Festival set up and tear down/ clean-up take about 3 weeks of work.

*Respectfully Submitted by Mich Germain, Superintendent, Central Workshop*

## **ECOLOGICAL STATUS REPORT**

- **Cave Springs Conservation Area**

The Ecological Studies continue at the site, as part of the 2015 Resource Inventory for the site Master Plan. Surveys completed this month include: the fourth of small mammal surveys; and the fifth of 5 turtle surveys; Species at Risk plant surveys were completed.

To date the completed Master Plan surveys include: the Ecological Land Study Classification Study; snag habitat survey; spring salamander survey; amphibian survey; winter large mammal tracking survey; spring ephemeral plant survey; bat building exit surveys; the snake survey; small mammal survey; reptile survey; flying squirrel small mammal survey; the site bird study.

Surveys remaining to be completed in October include: the bat monitoring of the key site area, as well as the large mammal, salamander, bird, reptile and insect incidental sightings.

The Ecological Report summarizing all completed studies and findings will be completed in October/November by the staff Ecologist, outlining sensitive ecological areas and compatible uses. This information will be included in the Cave Springs Master Plan for a balanced environmental, community and economic needs.

- **Morgans Point Conservation Area**

In an effort to assist the Monarch Butterfly, Common milkweed was planted at the site. These plants augmented the existing milkweed population, following last year's plant removal due to 'Yellow's Phytoplasma' effects. Phytoplasma is a bacteria which can cause disease and death of the milkweed plant, and negatively affect monarch caterpillars. This bacteria spread by insects (i.e. leafhoppers). Additional plants and seeding will be completed later this fall for further augmentation of the site's Common milkweed population.



- Smith-Ness Conservation Area

Implementation of the site ecosystem restoration work continues at the site. Following the pit and mound creation, tree and shrubs will be planted later this fall in the south corner providing a stream buffer and shading as well as a more naturalized forested edge. Sloughs will also be excavated in October/November, mimicking the historic landscape. Meadow plantings, trails and parking lot will follow in 2016 to complete the site restoration and passive recreational use by the public for educational use and nature appreciate.

- Other Conservation Area Ecological Activity

NPCA Hunting Program

a) General: Hunting Permits

Staff has issued an additional 85 hunting permits for a total of 358 permits issued for the NPCA Conservation Areas for 2015. Of this total, hunting permits are issued to 60 individuals residing outside of our administrative area.

b) On September 1, the 2015 NPCA Waterfowl Hunting Blind Lottery was completed, for Binbrook and Mud Lake Conservation Areas. This lottery is for the hunting blinds during the first two weeks of the hunt. Also this year was a seasonal lottery for Binbrook's Blind 5.

- Geocaching

Staff met with several geocachers to hear their desires/needs of geocaching. These aspects will be considered in the review of corporate geocaching guidelines/policy.

*Respectfully Submitted by Kim Frohlich, NPCA Ecologist*

## **COMMUNITY & VOLUNTEER REPORT**

- Community Liaison Advisory Committee (CLAC):

The next CLAC meeting will be held on Thursday November 19th at 5:30PM at Henry of Pelham Winery. The Committee composition has had a few changes with three new faces joining this meeting. Jeff Jordan and Sarah Fraser will fill recent vacancies in the "public-at-large" representation and Grant Munday of the City of Welland will fill the vacancy left in the "lower-tier municipal" representation.

- Community Outreach

Stakeholder meetings for the Cave Springs Management Plan have been on-going for the month of September. Staff have met with a number of groups, organizations, individuals, including Brock University, Niagara College, Cave Springs Church Camp, Cave Spring Cellars, nature clubs/groups, Ontario Access Coalition, etc. These meetings have been enormously insightful and have allowed the NPCA to address concerns of various groups and to discuss future partnership opportunities for the site.

- Volunteers

Volunteer recruitment for the Ball's Falls Thanksgiving Festival has continued throughout the month of September. A volunteer orientation will be held on October 7th at the Centre for Conservation to train volunteers, discuss Health and Safety, and to answer any questions. Staff have started using a new on-line volunteer database called Volgistics and have successfully migrated over 400 volunteer records to this system. This software will greatly increase the efficiency of staff contacting, recognizing and recruiting volunteers.

- Yellow Fish Road™

NPCA staff are working with the Region to integrate the Yellow Fish Road Program™ into the Outreach and Education component of the Source water Protection Plan. This program will target school groups, girl guides, and scouts in the Intake Protection Zones of Port Colborne and Niagara Falls, as well as the larger surrounding areas. Staff have compiled a list of schools in the Intake Protections Zones for Port Colborne and Niagara Falls and will be contacting them in October.

- Niagara Envirothon

Plans for the 2016 Niagara Envirothon are currently underway. Staff will be meeting with the 2015 Niagara Envirothon teachers in October to discuss improvements for 2016. The location and dates will be selected at this time as well.

- Conservation Achievement Awards

The Niagara Peninsula Conservation Authority established the annual Conservation Achievement Awards in 1991 as a means to recognize those who voluntarily contribute to the conservation, restoration, development and management of natural resources. The awards are intended not only for the volunteers who work directly on NPCA projects or events, but also those residents whose contributions to conservation efforts are evident in their daily lives to ensure that our treasured natural resources will be sustained for generations to come.

The NPCA also bestows Awards of Merit which recognizes “significant achievements or contribution by an individual, group or business to improve and restore our local environment for the benefit of all watershed residents.”

The Authority hosts a reception as an occasion to meet and thank the recipients and hand out a small token of appreciation. The event gives the Authority Board and staff an opportunity for networking and establishing collaborative opportunities for future undertakings. This has grown to become an event that is greatly favoured and looked forward to. For those recipients that are unable to attend the reception, their awards are delivered to them either by a staff person or through courier service.

The Conservation Achievement Awards have historically been held on the last Wednesday in November, however in order to fully recognize all of the 2015 recipients at the same time and taking into account staff workload during the Fall months we have moved the Conservation Achievement Awards to February for future years. The 2015 Conservation Achievement Awards will be held on Wednesday February 24th 2016.

*Respectfully Submitted by Kerry Royer, Community & Volunteer Coordinator*

## **EVENTS STATUS REPORT**

- Children’s Festival Update

As per Board direction at its September meeting, staff will be purchasing an event tent for the festival as well as other uses. The remaining purchases to fulfill the allocation of the monies from the festival will take place through November and December.



- Thanksgiving Festival Update

At the time of writing this report, 165 artisans, concessionaires and farmer's market vendors have committed to the event and estimated revenue of \$87,000 has been collected from the group. The event will feature a Farmer's Market with VQA wines.

All logistical aspects of the event are now being implemented.

- Christmas with Santa

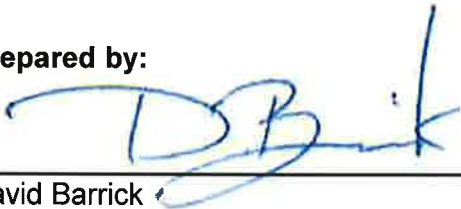
Once the Thanksgiving Festival commences, planning will be underway to execute the Christmas with Santa event at Ball's Falls. The date of the event will be December 5th, 2015 with the time still to be determined. Last year's event featured Santa, Wagon Rides, bouncy castles, and s'mores over an open fire.

*Respectfully Submitted by Brianne Wilson, Events Coordinator*

## **RELATED REPORTS AND APPENDICES:**

1 – None

**Prepared by:**



David Barrick  
Director of Operations

**Submitted by:**



Carmen D'Angelo  
Chief Administrative Officer  
Secretary Treasurer

**Report To:** Board of Directors

**Subject:** Corporate Services Project Status Report

**Report No:** 102-15

**Date:** October 21, 2015

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**RECOMMENDATION:**

That Report No. 102-15 be received for information.

**PURPOSE:**

To provide the NPCA Board of Directors information updates on the projects, programs and services of the Corporate Services Department.

**DISCUSSION:**

To provide the Board a summary of projects important to the Conservation Authority's business objectives. The project status report is to provide information pertaining to process improvements, initiatives in support of the strategic plan and supporting the organization to achieve its mission, vision and values.

**FINANCIAL IMPLICATIONS:**

Projects are within budget allocations for staff time and activity, including the job design and job evaluation project which is a new project initiative that was not identified during the budget preparation and approval cycle.

**RELATED REPORTS AND APPENDICES:**

**1.0 Accounting & Financial Management**

- ❖ The 2016 Budget was completed and approved by the budget committee on October 7, 2015. The budget meets the committee's recommendation of a 1% increase from Levy Apportionment from all municipalities. The committee also approved the 2016 Capital budget.
- ❖ Continue to spend significant amount of time on Union negotiations, next negotiation dates are October 19th and 29th.

## **2.0 GIS & Information Management**

GIS/Information Management staff have been working on several technical capital projects throughout the summer:

- ❖ The migration of information technology services to our new private managed services provider occurred over the weekend of October 3rd and 4th. All NPCA operations are now running on an NPCA network and infrastructure. This included assuming full control of our enterprise GIS environment and the publication of a replacement internal web mapping tool called the NPCA 'Watershed Manager'. The switch went smoothly and staff looks forward the many benefits identified in the business case that this offers the Authority long term.
- ❖ The Scope of Work Document has been signed and delivered to CityView enshrining the expectations through the configuration phase now that data collection is complete. A full report updating the board on the CityView implementation as the NPCA's development tracking system of choice as identified as needed through the Strategic Plan is included this month as well.
- ❖ Various maps and statistics created through geospatial analyses to support staff have occurred through day to day business support.

## **3.0 Foundation and Communications:**

- ❖ Thank you to all the Board members who were able to attend the first annual Rt. Hon. John Turner Award for Water & Environmental Leadership. Overall the event was a success helping to raise both profile and money for the NPCA and its Foundation. Nearly \$17,000 in net proceeds was raised. Feedback from those in attendance was very positive as was media coverage of the event.
- ❖ A new NPCA video premiered at the gala event and has since been posted on-line. The video was very well received at the event and by NPCA staff. The communications department will be producing similar videos in the spring to promote individual conservation areas.
- ❖ The communications team was pleased to support the annual Thanksgiving Festival through a marketing plan and ad buy. Use of social media, on-line ads and more traditional means of advertising like radio and billboards were all incorporated into the plan. The department is also pleased to be assisting in a communications role for both the policy review and flood plain mapping projects.
- ❖ Received \$5,973 donation from Toronto MG Car Club to the foundation.

#### **4.0 Human Resources**

- ❖ Began evaluating Human Resources Management Systems. Currently evaluating three software packages; Norming, Bamboo HR, and Ascentis. An HRMS system will allow us to have easily accessible information and allow streamlining data access. It will also allow for on-line access to employee manuals.
- ❖ Began finalizing employee handbooks and manuals.
- ❖ Reviewed collective bargaining material, cross referencing potential agreed upon items in the agreement ensuring consistent wording and identifying potential collective agreement conflicts.

**Prepared by:**



**Jeff Long**  
**Senior Manager, Corporate Services**

**Submitted by:**



**Carmen D'Angelo**  
**Chief Administrative Officer**  
**Secretary Treasurer**

***This report was prepared in consultation with: Cathy Kaufmann, Accounting Administrator; Geoff Verkade, Supervisor, GIS; Michael Reles, Communications Specialist; Kevin Valliers, Manager, Development & Communications; and Misti Ferrusi, HR Generalist.***

**Report To:** Board of Directors

**Subject:** 2015 Quarterly Capital Projects Update

**Report No:** 103-15

**Date:** October 21, 2015

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**RECOMMENDATION:**

That Report No. 103-15 be **RECEIVED** for information.

**PURPOSE:**

To provide Board members with a quarterly report on the 2015 Capital Projects, Operations Department.

**BACKGROUND:**

In the third quarter an additional 14 projects were initiated. In total, 57 of 60 capital projects (Operations Department) have been initiated, in 2015. (a detailed Projects Calendar is attached as Appendix 1).

Asset Inventory work was also completed in the third quarter. All assets within our revenue parks and other parks with significant capital assets were identified and documented. The data will be uploaded to the new asset management software, in November.

**DISCUSSION:**

The Operations Team has now developed a Draft 5-Year Capital Budget that has also been distributed to the Board Budget Committee.

For the second time, year-end campers' meetings were held at Chippawa Creek and Long Beach. The meetings have been well-attended and well-received. Campers appreciate the opportunity to provide input and feedback with respect to their camping experience. Campers expressed appreciation for the capital improvements that have been undertaken over the past two years, as well as appreciation for the staff in those parks.

One challenge that Board members should be aware of, pertains to staff efforts to deliver electrical upgrades to Chippawa Creek. Dealing with Hydro One has been challenging on this

**FINANCIAL IMPLICATIONS:**

All Capital Projects within the Operations Dept. are well within budget guidelines at this time.

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**RELATED REPORTS AND APPENDICES:**

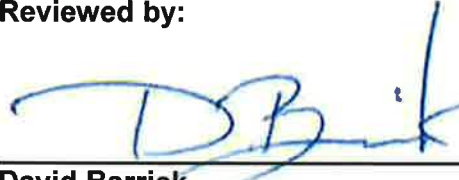
1. Appendix 1: Updated 2015 Capital Projects Calendar

**Prepared by:**



**Mark Brickell**  
Manager, Strategic Initiatives

**Reviewed by:**



**David Barrick**  
Director of Operations

**Submitted by:**



**Carmen D'Angelo**  
Chief Administrative Officer  
Secretary Treasurer

# Projects Calendar for 2015

| Conservation Area | Project Description                                   | Reference No.  | B U D G E T  | Pr. Lead | Project Schedule |     |           |           |           |      |           |           |      |           |           |     | ACTUAL EXPENSES |
|-------------------|---|----------------|--------------|----------|------------------|-----|-----------|-----------|-----------|------|-----------|-----------|------|-----------|-----------|-----|-----------------|
|                   |   |                |              |          | Jan              | Feb | Mar       | Apr       | May       | June | July      | Aug       | Sept | Oct       | Nov       | Dec |                 |
| Ball's Falls CA   | Glycol Leak Repair                                    | BF - 2015 - 01 | \$ 5,000.00  | N.D.     |                  |     | Completed |           |           |      |           |           |      |           |           |     | 1,808.00        |
|                   | January 1 - February 28, 2015                         |                |              |          |                  |     |           |           |           |      |           |           |      |           |           |     | -               |
|                   | Upgrades for Lower Level Washroom                     | BF - 2015 - 02 | \$ 15,000.00 | J.F.     |                  |     |           | Completed |           |      |           |           |      |           |           |     | 15,026.93       |
|                   | January 26 - March 30, 2015                           |                |              |          |                  |     |           |           |           |      |           |           |      |           |           |     | -               |
|                   | Purchase Folding Tables for Weddings                  | BF - 2015 - 03 | \$ 3,000.00  | N.D.     |                  |     |           | Completed |           |      |           |           |      |           |           |     | 1,800.00        |
|                   | March 2015  |                |              |          |                  |     |           |           |           |      |           |           |      |           |           |     | -               |
|                   | Re-roof the Cabin - Cedar Shingles                    | BF - 2015 - 04 | \$ 7,000.00  | N.D.     |                  |     |           |           |           |      | Hold      |           |      |           |           |     | -               |
|                   | May/June 2015   |                |              |          |                  |     |           |           |           |      |           |           |      |           |           |     | -               |
|                   | Electrical Upgrades - Thanksgiving Festival           | BF - 2015 - 05 | \$ 27,000.00 | N.D.     |                  |     |           |           |           |      |           | Completed |      |           |           |     | 29,429.61       |
|                   | June/July 2015  |                |              |          |                  |     |           |           |           |      |           |           |      |           |           |     | -               |
|                   | Purchase Heavy Duty Commercial Floor Cleaner for Barn | BF - 2015 - 06 | \$ 2,600.00  | N.D.     |                  |     |           | Completed |           |      |           |           |      |           |           |     | 2,593.35        |
|                   | March 2015  |                |              |          |                  |     |           |           |           |      |           |           |      |           |           |     | -               |
|                   | Wi-Fi System  | BF - 2015 - 07 | \$ 10,000.00 | N.D.     |                  |     |           |           |           |      |           |           |      | Completed |           |     | -               |
|                   | May 2015  |                |              |          |                  |     |           |           |           |      |           |           |      |           |           |     | -               |
|                   | Wireless Mic System \$20,000*                         |                |              | J.F.     |                  |     |           |           |           |      | Completed |           |      |           |           |     | 17,741.00       |
|                   | TBD   |                |              |          |                  |     |           |           |           |      |           |           |      |           |           |     | -               |
|                   | TOTAL: \$   |                | 69,600.00    |          |                  |     |           |           |           |      |           |           |      |           |           |     | 68,398.89       |
| Binbrook CA       | Fishing Docks   | BB - 2015 - 01 | \$ 28,000.00 | R.S.     |                  |     |           |           |           |      |           |           |      |           |           |     | -               |
|                   | April - September, 2015                               |                |              |          |                  |     |           |           |           |      |           |           |      |           |           |     | -               |
|                   | Metal roof for Pavilion 2                             | BB - 2015 - 02 | \$ 15,000.00 | M.B.     |                  |     |           |           |           |      |           |           |      |           |           |     | -               |
|                   | September - October, 2015                             |                |              |          |                  |     |           |           |           |      |           |           |      |           |           |     | -               |
|                   | Splash Pad Health and Safety Improvements             | BB - 2015 - 03 | \$ 30,000.00 | M.B.     |                  |     |           |           |           |      | Completed |           |      |           |           |     | 13,133.38       |
|                   | March - June 2015                                     |                |              |          |                  |     |           |           |           |      |           |           |      |           |           |     | -               |
|                   | POS System  | BB - 2015 - 04 | \$ 5,000.00  | D.B.     |                  |     |           |           | Completed |      |           |           |      |           |           |     | 0.01            |
|                   | March - April, 2015                                   |                |              |          |                  |     |           |           |           |      |           |           |      |           |           |     | -               |
|                   | Water softening system for Splash Pad                 | BB - 2015 - 05 | \$ 7,500.00  | M.B.     |                  |     |           |           |           |      | Completed |           |      |           |           |     | 6,633.10        |
|                   | March -May, 2015                                      |                |              |          |                  |     |           |           |           |      |           |           |      |           |           |     | -               |
|                   | Kubota Salt Spreader                                  | BB - 2015 - 06 | \$ 2,500.00  | G.F.     |                  |     |           |           | Completed |      |           |           |      |           |           |     | 2,079.20        |
|                   | March-April, 2015                                     |                |              |          |                  |     |           |           |           |      |           |           |      |           |           |     | -               |
|                   | Kubota Cab Enclosure                                  | BB - 2015 - 07 | \$ 2,500.00  | G.F.     |                  |     |           |           | Completed |      |           |           |      |           |           |     | 2,194.10        |
|                   | March-April, 2015                                     |                |              |          |                  |     |           |           |           |      |           |           |      |           |           |     | -               |
|                   | Wind Curtain  | BB - 2015 - 08 | \$ 5,000.00  | M.B.     |                  |     |           |           |           |      |           |           |      |           | Completed |     | 6,768.70        |
|                   | June-October, 2015                                    |                |              |          |                  |     |           |           |           |      |           |           |      |           |           |     | -               |
|                   | Kayak/Canoe Storage                                   | BB - 2015 - 09 | \$ 25,000.00 | M.B.     |                  |     |           |           |           |      |           |           |      |           |           |     | -               |
|                   | March-April, 2015                                     |                |              |          |                  |     |           |           |           |      |           |           |      |           |           |     | -               |
|                   | Gazebo  | BB - 2015 - 10 | \$ 35,000.00 | M.B.     |                  |     |           |           |           |      |           |           |      |           |           |     | -               |
|                   | May-August 2015                                       |                |              |          |                  |     |           |           |           |      |           |           |      |           |           |     | -               |
|                   | Septic System Upgrades as per Master Plan \$800,000*  |                |              | G.F.     |                  |     |           |           |           |      |           |           |      |           |           |     | -               |
|                   | TBD   |                |              |          |                  |     |           |           |           |      |           |           |      |           |           |     | -               |
|                   | Water System Upgrades as per Master Plan \$170,000*   |                |              | M.B.     |                  |     |           |           |           |      |           |           |      |           |           |     | -               |
|                   | TBD   |                |              |          |                  |     |           |           |           |      |           |           |      |           |           |     | -               |
|                   | Install electronic gates and related works \$100,000* |                |              | M.B.     |                  |     |           |           |           |      |           |           |      |           |           |     | 550.88          |
|                   | TBD   |                |              |          |                  |     |           |           |           |      |           |           |      |           |           |     | -               |
|                   | Purchase boat, motor and trailer \$30,000*            |                |              | G.F.     |                  |     |           |           |           |      | Completed |           |      |           |           |     | 29,841.01       |
|                   | June 2015'  |                |              |          |                  |     |           |           |           |      |           |           |      |           |           |     | -               |
|                   | TOTAL: \$   |                | 155,500.00   |          |                  |     |           |           |           |      |           |           |      |           |           |     | 61,200.38       |

[illegible]

Initiated
  Not Initiated
  On Hold



# Projects Calendar for 2015

| Conservation Area | Project Description  | Reference No.  | B U D G E T   | Pr. Lead | Project Schedule |     |     |     |           |      |      |     |      |     |     |     | ACTUAL EXPENSES |
|-------------------|--|----------------|---------------|----------|------------------|-----|-----|-----|-----------|------|------|-----|------|-----|-----|-----|-----------------|
|                   |  |                |               |          | Jan              | Feb | Mar | Apr | May       | June | July | Aug | Sept | Oct | Nov | Dec |                 |
| Chippawa Creek CA | 2 Fishing Pier Replacements                                | CC - 2015 - 01 | \$ 55,000.00  | R.S.     |                  |     |     |     |           |      |      |     |      |     |     |     | -               |
|                   | April-August 2015  |                |               |          |                  |     |     |     |           |      |      |     |      |     |     |     | -               |
|                   | POS System   | CC - 2015 - 02 | \$ 5,000.00   | D.B.     |                  |     |     |     | Completed |      |      |     |      |     |     |     | 0.01            |
|                   | March-April 2015   |                |               |          |                  |     |     |     |           |      |      |     |      |     |     |     | -               |
|                   | Upgrade Campsites  | CC - 2015 - 03 | \$ 20,000.00  | R.K.     |                  |     |     |     |           |      |      |     |      |     |     |     | -               |
|                   | August-November 2015                                       |                |               |          |                  |     |     |     |           |      |      |     |      |     |     |     | -               |
|                   | Insulation for New Comfort Station                         | CC - 2015 - 04 | \$ 3,000.00   | R.K.     |                  |     |     |     | Completed |      |      |     |      |     |     |     | 2,361.70        |
|                   | April 2015   |                |               |          |                  |     |     |     |           |      |      |     |      |     |     |     | -               |
|                   | Seal Old Wells   | CC - 2015 - 05 | \$ 5,000.00   | R.K.     |                  |     |     |     |           |      |      |     |      |     |     |     | 1,491.60        |
|                   | May 2015   |                |               |          |                  |     |     |     |           |      |      |     |      |     |     |     | -               |
|                   | Replace Old Comfort Station Tanks and Related Improvements | CC - 2015 - 06 | \$ 25,000.00  | R.K.     |                  |     |     |     |           |      |      |     |      |     |     |     | -               |
|                   | August-October 2015  |                |               |          |                  |     |     |     |           |      |      |     |      |     |     |     | -               |
|                   | Boardwalk Rail Repairs                                     | CC - 2015 - 07 | \$ 3,000.00   | R.K.     |                  |     |     |     |           |      |      |     |      |     |     |     | -               |
|                   | May-June 2015  |                |               |          |                  |     |     |     |           |      |      |     |      |     |     |     | -               |
|                   | New Metal Roof for Gatehouse                               | CC - 2015 - 08 | \$ 5,000.00   | R.K.     |                  |     |     |     |           |      |      |     |      |     |     |     | 2,137.01        |
|                   | April-June 2015  |                |               |          |                  |     |     |     |           |      |      |     |      |     |     |     | -               |
|                   | Beach Restroom Renovation                                  | CC - 2015 - 09 | \$ 15,000.00  | R.K.     |                  |     |     |     |           |      |      |     |      |     |     |     | 6,090.36        |
|                   | March-April 2015   |                |               |          |                  |     |     |     |           |      |      |     |      |     |     |     | -               |
|                   | Golf Cart Refurb   | CC - 2015 - 10 | \$ 3,500.00   | R.K.     |                  |     |     |     | Completed |      |      |     |      |     |     |     | 3,463.36        |
|                   | March-April 2015   |                |               |          |                  |     |     |     |           |      |      |     |      |     |     |     | -               |
|                   | Workshop Area Upgrades                                     | CC - 2015 - 11 | \$ 10,000.00  | R.K.     |                  |     |     |     | Completed |      |      |     |      |     |     |     | 2,429.50        |
|                   | March-April 2015   |                |               |          |                  |     |     |     |           |      |      |     |      |     |     |     | -               |
|                   | Entry/Exit Roadway and Gate Improvements                   | CC - 2015 - 12 | \$ 13,000.00  | R.K.     |                  |     |     |     |           |      |      |     |      |     |     |     | 1,358.34        |
|                   | April-June 2015  |                |               |          |                  |     |     |     |           |      |      |     |      |     |     |     | -               |
|                   | Purchase of a Water truck                                  | CC - 2015 - 13 | \$ 10,000.00  | G.F.     |                  |     |     |     |           |      |      |     |      |     |     |     | 11,300.00       |
|                   | March-May 2015   |                |               |          |                  |     |     |     |           |      |      |     |      |     |     |     | -               |
|                   | Create Parking Area Beside Pavilion                        | CC - 2015 - 14 | \$ 6,000.00   | R.K.     |                  |     |     |     |           |      |      |     |      |     |     |     | -               |
|                   | April-June 2015  |                |               |          |                  |     |     |     |           |      |      |     |      |     |     |     | -               |
|                   | Re-side Old Comfort Station                                | CC - 2015 - 15 | \$ 8,000.00   | R.K.     |                  |     |     |     |           |      |      |     |      |     |     |     | -               |
|                   | June-July 2015   |                |               |          |                  |     |     |     |           |      |      |     |      |     |     |     | -               |
|                   | Purchase Honey Wagon                                       | CC - 2015 - 16 | \$ 8,000.00   | G.F.     |                  |     |     |     |           |      |      |     |      |     |     |     | 7,545.00        |
|                   | March-May 2015   |                |               |          |                  |     |     |     |           |      |      |     |      |     |     |     | -               |
|                   | Electrical Upgrades  | CC - 2015 - 17 | \$ 125,000.00 | R.K.     |                  |     |     |     |           |      |      |     |      |     |     |     | -               |
|                   | February-September 2015                                    |                |               |          |                  |     |     |     |           |      |      |     |      |     |     |     | -               |
|                   | Water Plant Improvements \$4,102.12*                       |                |               |          |                  |     |     |     | Completed |      |      |     |      |     |     |     | 4,102.12        |
|                   | May 2015   |                |               |          |                  |     |     |     |           |      |      |     |      |     |     |     | -               |
|                   | TOTAL:   |                | \$ 319,500.00 |          |                  |     |     |     |           |      |      |     |      |     |     |     | 38,176.88       |

 Initiated  Not Initiated  On Hold

# Projects Calendar for 2015

| Conservation Area           | Project Description                                 | Reference No.  | B U D G E T     | Pr. Lead | Project Schedule |     |     |           |           |           |      |     |      |     |     |     | ACTUAL EXPENSES |
|-----------------------------|---|----------------|-----------------|----------|------------------|-----|-----|-----------|-----------|-----------|------|-----|------|-----|-----|-----|-----------------|
|                             |   |                |                 |          | Jan              | Feb | Mar | Apr       | May       | June      | July | Aug | Sept | Oct | Nov | Dec |                 |
| Long Beach CA               | Sidewalk around Comfort Station 3                   | LB - 2015 - 01 | \$ 6,000.00     | M.M.     |                  |     |     |           |           | Completed |      |     |      |     |     |     | 4,689.50        |
|                             | March-May 2015                                      |                |                 |          |                  |     |     |           |           |           |      |     |      |     |     |     | -               |
|                             | New Metal Roof for Pavilion 2                       | LB - 2015 - 02 | \$ 7,000.00     | M.M.     |                  |     |     |           |           |           |      |     |      |     |     |     | -               |
|                             | June-July 2015                                      |                |                 |          |                  |     |     |           |           |           |      |     |      |     |     |     | -               |
|                             | Purchase Gator/RTV                                  | LB - 2015 - 03 | \$ 20,000.00    | G.F.     |                  |     |     |           |           | Completed |      |     |      |     |     |     | 15,241.44       |
|                             | March-May 2015                                      |                |                 |          |                  |     |     |           |           |           |      |     |      |     |     |     | -               |
|                             | New Metal Stairs to Beach (2-4 sets)                | LB - 2015 - 04 | \$ 20,000.00    | M.M.     |                  |     |     |           |           |           |      |     |      |     |     |     | -               |
|                             | April-July 2015                                     |                |                 |          |                  |     |     |           |           |           |      |     |      |     |     |     | -               |
|                             | Improvements to Shower Floor In Comfort Station 3   | LB - 2015 - 05 | \$ 5,000.00     | M.M.     |                  |     |     |           | Completed |           |      |     |      |     |     |     | 4,853.35        |
|                             | March-April 2015                                    |                |                 |          |                  |     |     |           |           |           |      |     |      |     |     |     | -               |
|                             | Shower Fixtures/Controls and interior upgrades      | LB - 2015 - 06 | \$ 10,000.00    | M.M.     |                  |     |     |           |           |           |      |     |      |     |     |     | -               |
|                             | April-June 2015                                     |                |                 |          |                  |     |     |           |           |           |      |     |      |     |     |     | -               |
|                             | Trail markers and lighting                          | LB - 2015 - 07 | \$ 1,500.00     | M.M.     |                  |     |     |           |           |           |      |     |      |     |     |     | -               |
|                             | April 2015  |                |                 |          |                  |     |     |           |           |           |      |     |      |     |     |     | -               |
|                             | Campsite Drainage Improvements - North Side         | LB - 2015 - 08 | \$ 2,500.00     | M.M.     |                  |     |     |           |           |           |      |     |      |     |     |     | -               |
|                             | April-May 2015                                      |                |                 |          |                  |     |     |           |           |           |      |     |      |     |     |     | -               |
|                             | 30 Amp Meters - Phase 1                             | LB - 2015 - 09 | \$ 20,000.00    | M.M.     |                  |     |     |           |           |           |      |     |      |     |     |     | -               |
|                             | March-June 2015                                     |                |                 |          |                  |     |     |           |           |           |      |     |      |     |     |     | -               |
|                             | Paint Roof on Workshop                              | LB - 2015 - 10 | \$ 3,000.00     | M.M.     |                  |     |     |           |           |           |      |     |      |     |     |     | -               |
|                             | June-July 2015                                      |                |                 |          |                  |     |     |           |           |           |      |     |      |     |     |     | -               |
|                             | Siding on Comfort Station 2                         | LB - 2015 - 11 | \$ 5,000.00     | M.M.     |                  |     |     |           |           |           |      |     |      |     |     |     | 2,174.69        |
|                             | June-August 2015                                    |                |                 |          |                  |     |     |           |           |           |      |     |      |     |     |     | -               |
|                             | Valve Box Replacement                               | LB - 2015 - 12 | \$ 2,000.00     | M.M.     |                  |     |     |           |           |           |      |     |      |     |     |     | -               |
|                             | October-November 2015                               |                |                 |          |                  |     |     |           |           |           |      |     |      |     |     |     | -               |
|                             | Widening of the Main Entrance                       | LB - 2015 - 13 | \$ 15,000.00    | M.M.     |                  |     |     |           |           | Completed |      |     |      |     |     |     | 19,546.18       |
|                             | March-May 2015                                      |                |                 |          |                  |     |     |           |           |           |      |     |      |     |     |     | -               |
|                             | POS System  | LB - 2015 - 14 | \$ 5,000.00     | D.B.     |                  |     |     |           | Completed |           |      |     |      |     |     |     | 0.01            |
|                             | March-April 2015                                    |                |                 |          |                  |     |     |           |           |           |      |     |      |     |     |     | -               |
|                             | Honey Wagon Service                                 | LB - 2015 - 15 | \$ 8,000.00     | G.F.     |                  |     |     | Cancelled |           |           |      |     |      |     |     |     | -               |
|                             | TBD   |                |                 |          |                  |     |     |           |           |           |      |     |      |     |     |     | -               |
|                             | Upgrade campsites                                   | LB - 2015 - 16 | \$ 30,000.00    | M.M.     |                  |     |     |           |           |           |      |     |      |     |     |     | -               |
|                             | TBD   |                |                 |          |                  |     |     |           |           |           |      |     |      |     |     |     | -               |
|                             | Wi-Fi   | LB - 2015 - 17 | \$ 19,500.00    | M.M.     |                  |     |     |           |           |           |      |     |      |     |     |     | 689.03          |
|                             | TBD   |                |                 |          |                  |     |     |           |           |           |      |     |      |     |     |     | -               |
|                             | Chain Link Fence Replacement - Phase 1 - South Side | LB - 2015 - 18 | \$ 65,000.00    | M.M.     |                  |     |     |           |           |           |      |     |      |     |     |     | -               |
|                             | July-October 2015                                   |                |                 |          |                  |     |     |           |           |           |      |     |      |     |     |     | -               |
|                             | 2014 Electrical Upgrades \$28,125.70*               |                |                 |          |                  |     |     | Completed |           |           |      |     |      |     |     |     | 28,125.70       |
|                             | January-March 2015                                  |                |                 |          |                  |     |     |           |           |           |      |     |      |     |     |     | -               |
| TOTAL: \$                   |   |                | 244,500.00      |          |                  |     |     |           |           |           |      |     |      |     |     |     | 75,319.90       |
| TOTAL 2015 CAPITAL PROJECTS |   |                | \$ 1,116,100.00 |          |                  |     |     |           |           |           |      |     |      |     |     |     | \$ 337,610.87   |

Initiated
  Not Initiated
  On Hold

**Report To: Board of Directors**

**Subject: Financial and Reserve Report – Month Ending September 30, 2015**

**Report No: 104-15**

**Date: October 21, 2015**

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**RECOMMENDATION:**

That Report No. 104-15 be received for information.

**DISCUSSION:**

To provide the Board a summary of operations & capital expenditures versus revenues and to provide a comparison of actual results to the budget as approved by the Board.

The report confirms the general financial oversight and compliance with Public Sector Accounting Board standards. Trends and variance reporting will be provided in accordance with accounting best practices.

**FINANCIAL IMPLICATIONS:**

The lines of business are within budget allocations identified during the budget preparation and approval cycle.

**RELATED REPORTS AND APPENDICES:**

**Appendix “A” – Budget Status report month ending September 30, 2015**

**Appendix “B” – Statement of Reserves for month ending September 30, 2015**

**Prepared by:**



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**Jeff Long, Sr. Mgr., Corporate Services**

**Submitted by:**



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**Carmen D'Angelo; CAO / Secretary Treasurer**

***This report was prepared in consultation with Cathy Kaufmann, Accounting Administrator***

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**Niagara Peninsula Conservation Authority**  
**Consolidated Income Statement**  
**For the Period Ending - September 30, 2015**

|                             | Current Mth<br>Actual | Current Mth<br>Budget | Act vs.Bdgt<br>B / (W) | Y.T.D.<br>Actual | Y.T.D.<br>Budget | Act vs.Bdgt<br>B / (W) | 12 Month<br>Budget |
|-----------------------------|-----------------------|-----------------------|------------------------|------------------|------------------|------------------------|--------------------|
| <b>Revenue</b>              |                       |                       |                        |                  |                  |                        |                    |
| Municipal Funding           | 358,190               | -                     | 358,190                | 6,960,398        | 6,602,212        | 358,186                | 8,802,943          |
| Provincial Funding          | -                     | 41,100                | (41,100)               | 374,061          | 395,700          | (21,639)               | 519,500            |
| Federal Grants              | -                     | 29,700                | (29,700)               | 30,000           | 145,900          | (115,900)              | 235,000            |
| Permits and Regulatory Fees | 36,045                | 28,600                | 7,445                  | 356,731          | 264,100          | 92,631                 | 350,000            |
| Park Operations             | 47,303                | 109,650               | (62,347)               | 1,039,064        | 1,093,300        | (54,236)               | 1,374,000          |
| Other Revenue               | 59,858                | 49,650                | 10,208                 | 288,737          | 157,750          | 130,987                | 213,100            |
| Interest Income             | 2,279                 | 7,500                 | (5,221)                | 19,749           | 42,500           | (22,751)               | 98,000             |
| Reserves and Foundation     | -                     | 60,000                | (60,000)               | -                | 290,000          | (290,000)              | 480,000            |
| <b>Total Revenue</b>        | <b>503,674</b>        | <b>326,200</b>        | <b>177,474</b>         | <b>9,068,740</b> | <b>8,991,462</b> | <b>77,278</b>          | <b>12,072,543</b>  |
| <b>Expenses</b>             |                       |                       |                        |                  |                  |                        |                    |
| Salaries & Benefits         | 454,943               | 507,883               | 52,940                 | 4,294,477        | 4,438,751        | 144,274                | 5,793,556          |
| HR & Employee Expenses      | 11,129                | 15,845                | 4,716                  | 87,549           | 140,505          | 52,956                 | 193,220            |
| Board & Volunteer Expenses  | -                     | 11,745                | 11,745                 | 35,292           | 45,265           | 9,973                  | 60,100             |
| Professional Fees           | 6,430                 | 59,195                | 52,765                 | 152,116          | 227,115          | 74,999                 | 290,200            |
| Occupancy Costs             | 57,864                | 25,095                | (32,769)               | 371,297          | 365,485          | (5,812)                | 457,300            |
| Office Expenses             | 29,218                | 23,470                | (5,748)                | 112,027          | 122,000          | 9,973                  | 176,745            |
| IT, GIS & Communications    | 466                   | -                     | (466)                  | 12,372           | -                | (12,372)               | 1,400              |
| Marketing & Promotions      | 14,926                | 9,675                 | (5,251)                | 77,887           | 89,275           | 11,388                 | 187,800            |
| Vehicle & Equipment         | 15,808                | 28,755                | 12,947                 | 198,229          | 234,020          | 35,791                 | 316,677            |
| Watershed Maintenance       | 19,786                | 33,160                | 13,374                 | 213,619          | 312,720          | 99,101                 | 412,000            |
| Park Maintenance            | 32,424                | 26,013                | (6,411)                | 230,967          | 215,326          | (15,641)               | 352,000            |
| Corporate Services          | 60,266                | 48,385                | (11,881)               | 1,731,872        | 1,640,185        | (91,687)               | 1,841,445          |
| <b>Total Expenses</b>       | <b>703,262</b>        | <b>789,221</b>        | <b>85,959</b>          | <b>7,517,704</b> | <b>7,830,647</b> | <b>312,942</b>         | <b>10,082,443</b>  |
| <b>Surplus / (Deficit)</b>  | <b>(199,588)</b>      | <b>(463,021)</b>      | <b>263,434</b>         | <b>1,551,035</b> | <b>1,160,815</b> | <b>390,220</b>         | <b>1,990,100</b>   |
| Capital Purchases           | 51,748                | 45,000                | (6,748)                | 364,014          | 155,000          | (209,014)              | 1,990,100          |
| <b>Surplus / (Deficit)</b>  | <b>(251,336)</b>      | <b>(508,021)</b>      | <b>256,686</b>         | <b>1,187,021</b> | <b>1,005,815</b> | <b>181,206</b>         | <b>(0)</b>         |

**Report To:** Board of Directors

**Subject:** CityView Development Tracking System Implementation Update

**Report No:** 105-15

**Date:** October 21, 2015

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### **RECOMMENDATION**

**That the CityView Development Tracking System Implementation Update Report No. 105-15 be received for information purposes.**

### **PURPOSE**

To inform about the adjusted implementation timelines for CityView, the NPCA's selection for a development tracking system identified as an objective in the NPCA Strategic plan (2014-2017).

### **BACKGROUND**

At the March 2015 members meeting, the NPCA Board of Directors approved staff's recommendation to purchase the CityView development tracking system and associated implementation services.

Initial project planning by CityView anticipated a go-live date in January of 2016.

### **SYSTEM IMPLEMENTATION PROGRESS**

Since the award of services, CityView has been working with NPCA staff on understanding our specific business better in order to apply it to the functionality of the system and leverage its capabilities to the best that the NPCA is prepared for at this time. NPCA is the first Conservation Authority in Ontario that CityView has had the opportunity to work with, as most CA's have not implemented development tracking systems yet, and only a few are in initial stages of identifying the need for a similar type of solution. Further to that, most of these systems, including CityView, are primarily designed to address municipal plan review and permitting business needs, and an implementation for the unique business of a Conservation Authority's development review processes in contrast, deviates from the typical application of the system requiring some additional considerations.

This 'data collection' phase of the project implementation plan has just completed with the milestone of signing of a 'Scope Document' clarifying and enshrining the technical considerations agreed to that CityView will initially configure the system with. This process helped NPCA staff further appreciate the capabilities and potential with the system in application to their specific needs and was highlighted by three days of meetings during an onsite visit by CityView staff in July.

This event and the subsequent follow-up clarifying communications proved an extensive effort where NPCA and CityView staff collaborated to capture workflow information and associated inputs such as the applications, issue verification and policy review processes, comments, inspections, conditions, meetings, and letter types that the NPCA typically deals with through their development review operations. Since a lot of these aspects of our review processes are not inherently clear, integrated and consistent, it took a lot of effort to organize and capture what is status quo as operational procedures that the system will now essentially provide a day to day framework to standardize with.

Many potential continuous improvement projects are emerging that the NPCA will not be able to address through the initial implementation, as we simply have some internal homework to do to further leverage some of the functionality in the system that if implemented would offer additional efficiencies. These are not critical for the main objectives identified for implementing the system such as those associated with the KPI's it was selected and intended to address which will be met at go live. They are simply additional improvements currently deemed out of scope that we can use the system to refine our processes further which were not anticipated or appreciated through the system evaluation and selection process. They have come to light through further appreciation of its capabilities achieved during the discovery of system potential during this data collection phase and are welcome surprises. CityView is a robust system with a rich set of capabilities that the Authority will be able to grow into over time.

### **REVISED PROJECT TIMELINE**

Due to the data collection process taking longer, and associated resourcing on CityView's end to complete the remaining tasks, CityView has revised the project schedule to go live in early February of 2016.

The implementation and project timeline now looks as follows:

| <b>Milestone</b>             | <b>Date</b>    |
|------------------------------|----------------|
| Data Collection              | End September  |
| System Configuration         | Oct – Nov      |
| Validation Training (onsite) | Nov 30 – Dec 1 |
| Validation                   | Dec – Jan      |
| End User Training (onsite)   | Feb 3 – 4      |
| Reporter Training (onsite)   | Feb 5          |
| Go Live (onsite)             | Feb 8 - 9      |
| Project Close out            | March          |

### **CONCLUSION**

The amended implementation schedule is perceived as reasonable by NPCA staff appreciating the necessity and value in the additional effort on both parties to perform a proper business discovery and data collection phase as a Conservation Authority.

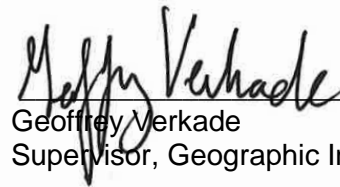
### **Alignment to NPCA's 2014-2017 Strategic Plan**

The NPCA Strategic Plan identifies the need for the Authority to improve performance within its development approvals process. It specifically recommends the adoption of a software system for monitoring development applications. Selecting and implementing the appropriate development tracking system is essential to ensuring that information management activities and the associated plan and permit review workflows of the development approvals process are optimized, integrated and standardized.

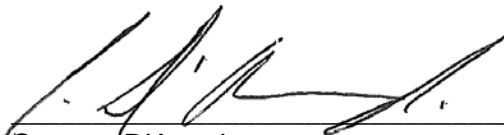
### **Reports Pertinent to this Matter**

Report No. 52-14, 'iDARTS Implementation – Status Update', June 18, 2014.  
Report No. 102-14, 'Development Tracking System Update', November 19, 2014.  
Report No. 26-15, 'Development Tracking System Selection', March 11, 2015

### **Prepared by:**

  
\_\_\_\_\_  
Geoffrey Verkade  
Supervisor, Geographic Information Services

### **Submitted by:**

  
\_\_\_\_\_  
Carmen D'Angelo,  
Chief Administrative Officer / Secretary-Treasurer

*This report was prepared by Geoffrey Verkade – Supervisor, Geographic Information Services and reviewed by Peter Graham, P.Eng. – Director, Watershed Management.*

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**Report To:** Board of Directors

**Subject:** Development Tracking System Selection

**Report No:** 26-15

**Date:** March 11, 2015

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### **RECOMMENDATIONS**

**THAT:**

1. The Development Tracking System Selection Report No. 26-15 be received and
2. The Board approve the purchase and implementation of the *CityView* software solution as the Niagara Peninsula Conservation Authority's development tracking system of choice.

### **REPORT**

#### **Purpose**

To recommend the NPCA's preferred solution and associated implementation plan for a development tracking system as identified in the NPCA Strategic plan (2014-2017).

#### **Background**

In 2014, staff conducted business analysis to clearly understand NPCA needs and completed research and evaluation of several development tracking software system solutions. The comparative analysis included a review of *iDARTS*, the solution currently used by the Region of Niagara for some of its planning requirements, two commercial off-the-shelf products, and a Customer Relationship Management (CRM) system. Owing to the significant importance of this project as it relates to the implementation of the NPCA's Strategic Plan, two staff reports to the Board have been provided throughout this process to update on progress and scope.

Currently, NPCA staff challenges in tracking the status of development approvals in its permit and plan review business processes. Additionally, the workflow associated with the NPCA's permit and plan review processes are not standardized, clear or documented. Implementing a tracking software system as a tool that will provide a framework to guide staff through the workflow for this business process is critical for the NPCA to realize its performance related targets.

Beyond technical requirements the prospective development tracking system will assist the development approvals process, improve customer service and corporate transparency with regards to its plan review and permitting activities.



A series of Key Performance Indicators (KPIs) were developed by the NPCA project team to measure the potential system's reporting needs as it relates to monitoring improvements within NPCA development approvals processes. These KPI's include the:

1. Ability to determine types and totals of application approvals processed.
2. Ability to determine time to complete various application approvals by type, including ability to 'stop/restart' processing clock at reasonable junctures in the processing workflow.
3. Ability to determine a percentage for meeting targeted processing timelines.
4. Ability to determine total human resources effort put into a file by the various internal roles that participate in the approvals process.
5. Ability to determine types and totals of pre-consultation activities.
6. Ability to determine time to complete application approvals in contrast to an established baseline and breakdown by the various internal roles.
7. Ability to determine fees collected by application type.
8. Ability to provide a comprehensive repository of all property issues.

### **Solution Search and Evaluation**

Staff researched what other Conservation Authorities and member municipalities utilize to meet similar business needs. From this investigation CityView, AMANDA, and Sage CRM were selected to complement *iDARTs* in a quantitative evaluation. Staff spoke with the additional vendors, visited several of their local clients to share experiences using their systems, received live demonstration webinars, and compiled detailed product documentation including preliminary cost estimates to help inform the analysis.

Results confirmed that the commercial off-the-shelf development tracking systems *AMANDA* and *CityView*, used predominantly in local municipal environments, were unmistakably more sophisticated. These systems have superior workflow and data management capabilities that translate better to meeting NPCA business requirements. They are both much more robust and mature systems, developed with modern software technologies and platforms. All four (4) potential solutions investigated were scored in the weighted criteria-based evaluation. A focused detailed analysis confirmed that two (2) of these solutions were a superior fit for the NPCA in the long term.

The detailed evaluation between CityView and AMANDA was extensive and vetted through the NPCA project team. Several overall system, administration and security, reporting, vendor support, and cost comparison requirements were equated against a total of 84 weighted criteria.

### **Selection**

Results of the thorough analysis indicated that CityView scored ahead of AMANDA by a 5% margin in terms of total score. This system also scored better in each of the general categories, with the biggest margin being established in overall cost.

Beyond the quantifiable results, the CityView system is robust yet not over complex in terms of requiring additional modules and add-ons to address the core needs identified by the project team. It also appears to be extremely user friendly.

It should also be noted that the Authority's member municipalities of Grimsby, Lincoln and Haldimand County use CityView for their development tracking and other municipal permitting and compliance needs. The system has a significant and increasing market share within North America with a total user base upwards of 200 organizations.

## **Benefits**

### ***Experience***

CityView focuses on creating and implementing land and records management and enforcement software for local governments in North America. It offers 32 years of experience doing business with government and entities through Ontario and Canada and it is built in and supported from Canada. It is developed by former public sector employees who understand the challenges and needs of local government based on their experiences. As a result, they are leaders in the market place for development tracking type solutions and bring an unrelenting focus and dedication to solving their client's business problems and providing the tools to make sure staff are more productive, and citizens are more conveniently served.

### ***Flexible***

CityView is a dynamic solution. It is not static software and is extremely flexible, boasting many configuration and development tools that assist users adapt the system on a day to day basis. It allows organizations to evolve at its own pace by affording customers with flexibility in all aspects of implementation recognizing that needs, technology, and legislation are continuously changing.

### ***Activities-Based***

Most importantly, CityView is an activities-based workflow system providing users with a consistent path through the system, facilitating the training of new employees, and ensuring that employees and departments are aware when tasks have been assigned to them. NPCA current business practices will be examined and a suitable workflow of activities and outcomes will be created, making it clear to staff which steps are part of a particular process, when those tasks come due, and who is responsible for them. This is achieved through a visual workspace to diagram existing business processes which drive the steps behind the system. NPCA will be able to create activities, set statuses, add default reviews or inspections (site visits), and set default fees in a simplified working environment.

### ***Ease of Use***

The ease of use and usability of CityView comes from combination of many factors, from the User Interface design and tools to the design of every screen in the system and the structure of the various components to facilitate navigation and workflow. Staff will appreciate the Microsoft Ribbon set up so that it takes no more than two mouse clicks to get to any feature or function on the interface. User preferences can be defined for each end user. Google-like search tools help rapidly find data and information. Searches and reports can be bookmarked for quick access. Each user is provided with his or her own To-Do list providing all task assigned to that user which are also accessible by the user in Microsoft Outlook and the corporate email system. The system has an integrated GIS viewer that enables retrieving information and starting applications through a map as well.

### ***Ready Access to Information***

CityView runs on a property base as opposed to an application base. Application types and associated documentation surrounding review activities are stored in reference to properties so that related applications (planning application and associated regulations permit) do not have to be referenced to each other exclusively. This will also enable the Authority to leverage its existing Property Information base which compiles Authority planning and regulations issues from our policy and regulations spatial datasets on the mapped parcel, and maintain a history of planning and permit activities associated with a specific property. When looking up a property for a potential information request, or initiation of a planning application or permit review, the system will be able

to return the property with an issue identification list already assembled for staff to vet and confirm, along with any existing history of previous review activities the Authority has been involved with.

### ***Reporting Capabilities***

The system also possesses powerful search and query tools that allow staff, including management, to easily find features or generate reports. The reporting capabilities address all of the NPCA's identified KPI's, which can be set up as regular reports, and also provides rich tools to create many robust queries and associated reports that will help measure and track performance.

### ***Technical Support / Upgrades***

The Annual Maintenance Agreement ensures NPCA customer and technical support, ongoing software development and upgrades, and assurance that it will never have to seek another vendor solution for a development tracking system again.

### **Options**

Staff recommends that the Board approve the purchase of the CityView software system from Harris Computer Systems. The associated implementation options and costs are outlined below in the various options to meet its development tracking needs as supported by the Strategic Plan:

1. Full Scope: CityView Property Information, Planning and Cashiering, and Portal

This option includes the minimum base system components required to address the Authority's internal information management needs with respect to tracking development applications.

This option also includes the implementation of an integrated public web portal that will enhance customer service and increase transparency with the Authority's processing of development applications.

|                          |           |
|--------------------------|-----------|
| Software and Licenses    | \$ 64,250 |
| Implementation Services* | \$110,513 |
| Annual Fees              | \$ 15,653 |
| <hr/>                    |           |
| Total                    | \$190,416 |

2. Minimum Requirements: CityView Property Information, Planning and Cashiering

This option includes the base system components required to address the Authority's internal information management needs with respect to tracking development applications.

|                          |           |
|--------------------------|-----------|
| Software and Licenses    | \$53,000  |
| Implementation Services* | \$98,468  |
| Annual Fees              | \$13,178  |
| <hr/>                    |           |
| Total                    | \$164,646 |

The vendor has prepared an associated implementation plan that would start in April with a scheduled go-live launch in September 2015.

\*Includes 10% contingency on professional services aspects (including workflow analysis) from vendor associated with custom system set up and configuration.

### 3. Status Quo

This option is to choose to not implement any development tracking software solution and carry on with business as usual. This option will seriously limit the Authority's ability to improve its development process performance as stipulated in the Strategic Plan. Workflows, business rules and associated information for the Plan Review and Regulations processes will have to be created, documented, prescribed and monitored with no realistic practical means to integrate all of these operational functional dependencies.

### **Alignment to NPCA's 2014-2017 Strategic Plan**

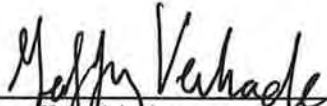
The NPCA Strategic Plan identifies the need for the Authority to improve performance within its development approvals process. It specifically recommends the adoption of a software system for monitoring development applications. Selecting and implementing the appropriate development tracking system is essential to ensuring that information management activities and the associated plan and permit review workflows of the development approvals process are optimized, integrated and standardized.

### **Reports Pertinent to this Matter**


Report No. 52-14, 'iDARTS Implementation – Status Update', June 18, 2014.

Report No. 102-14, 'Development Tracking System Update', November 19, 2014.


#### **Prepared by:**

  
\_\_\_\_\_  
Geoffrey Verkade  
Supervisor, Geographic Information Services

#### **Reviewed by:**

  
\_\_\_\_\_  
Jeff Long  
Senior Manager, Corporate Services

#### **Submitted by:**

  
\_\_\_\_\_  
Carmen D'Angelo,  
Chief Administrative Officer / Secretary-Treasurer

*This report was prepared by Geoffrey Verkade – Supervisor, Geographic Information Services and reviewed by Peter Graham, P.Eng. – Director, Watershed Management.*

**Report To: Board of Directors**

**Subject: NPCA Forestry and Tree and Forest Conservation By-law Status**

**Report No: 106-15**

**Date: October 21, 2015**

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**RECOMMENDATION:**

**That Report No. 106-15 regarding the status of NPCA Forestry activities and the Tree and Forest Conservation By-law be received for information.**

**PURPOSE:**

To provide an update on the status of Tree & Forest Conservation By-law and forestry activities being conducted by the NPCA Forester.

**DISCUSSION:**

By-law issues/main activities since September 16, 2015 include:

- Harvest operations are in progress under Good Forestry Practices (GFP) permits in woodlots located in Thorold, West Lincoln and Fort Erie. Operations are being routinely monitored by the NPCA Forester to ensure conformance with permit conditions and operating conditions are suitable (dry weather).
- Conducted site visits to two woodlands at the request of the land owners. The site visits were to determine if the woodlands would benefit from a selection harvest because of ash decline from Emerald Ash Borer. Assessments were conducted with the land owners to determine if a harvest operation under a Good Forestry Practices permit would be feasible. The owners were informed about the permit process and provided a list of reputable logging contractors.
- Commenced work on Managed Forest Plans (MFP) for five Conservation Authority properties (Chippawa Creek, Balls Falls, Stevensville, Willoughby Marsh and Long Beach). The plans must be submitted to the MNRF by June 30, 2016. The purpose of a MFP is to guide the land owner in the management of their forest and values found within it. The intent of the Managed Forest Program is to foster ecologically sound forest management on private lands while providing a reduction in property taxes to landowners of forested land who prepare a plan and agree to be good stewards of their property.
- Provided a forestry presentation to a grade 2/3 class at Plymouth Public School in Welland as part of National Forest Week.

- Responded to tree cutting/clearing complaints in Welland and West Lincoln. The complainants involved removal of dead or dying ash trees and clearing of areas with shrub vegetation and low tree density. These areas are not covered by the Bylaw.
- Received and provided advice to persons calling about declining ash trees located in urban areas not covered by the By-law. Some inquired if the NPCA would remove their ash trees. They were informed that if the tree is on their property then they are responsible for its removal, or contact the adjacent owner if they are located on their land.
- Conducted an assessment of trees along the south east property boundary of Mountainview Conservation Area. The adjacent private land owner requested verification of the health and ownership of several large willows along the boundary. The assessment determined all but one of the trees are on the adjacent owner's property.

**RELATED REPORTS AND APPENDICES:**

None

**Prepared by:**

Dan Drennan

Dan Drennan,  
R.P.F; Forester

**Reviewed by:**

Peter Graham

Peter Graham  
Director, Watershed Management

**Submitted by:**

Carmen D'Angelo

Carmen D'Angelo  
Chief Administrative Officer  
Secretary Treasurer

# REPORTS FOR CONSIDERATION

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- ❖ **REPORT NO. 107-15** – *Weighted Vote Policy*
- ❖ **REPORT NO. 108-15** – *2016 Operating and Capital Budget*
- ❖ **REPORT NO. 109-15** – *Conservation Area Rates & Fee Schedule 2016*
- ❖ **REPORT NO. 110-15** – *Morningstar Mill*
- ❖ **REPORT NO. 111-15** – *Glanbrook & Tyneside Trail Agreement*
- ❖ **REPORT NO. 112-15** – *RAP Impairment Re-Designation Process*

October 21, 2015 Full Authority Meeting

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**Report To:** Board of Directors

**Subject:** Weighted Voting – Ontario Regulation 139/96

**Report No:** 107-15

**Date:** October 21, 2015

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**RECOMMENDATION:**

That the NPCA Board of Directors **RECEIVE** Report No. 107-15 for information.

**PURPOSE:**

To ensure the NPCA Board of Directors are compliant with Ontario Regulation 139/96 as per the *Conservation Authorities Act*.

**DISCUSSION:**

Based on an inquiry from a Board Member, staff investigated why the Niagara Peninsula Conservation Authority has never adopted a “weighted majority” voting protocol for budgets as per Ontario Regulation 139/96 entitled “Municipal Levies” (see Appendix 1 attached).

The regulation requires that there be a weighted vote for the “non-matching” levy.

The “matching levy” is the funds that match the provincial funding received by the NPCA under Section 39 which has been consistent year to year at \$174,500. Thus the “matching levy” from the NPCA is \$174,500.

The “non-matching levy” is the balance of the funding obtained from the municipal levy. The 2016 operating and capital budget is currently proposed at \$5,638,973 in formula levies and \$3,230,369 in special levies. Thus, the NPCA “non-matching levy” is \$5,638,973 - \$174,500 = \$5,464,473.

As per the regulation, the “non-matching levy” is “...approved by a weighted majority of the members at a meeting...” Further, the “weighted majority” means the votes of 51 per cent of those represented after the votes are weighted. Most conservation authorities calculate this weight by dividing the municipality’s CVA (current value assessment) based apportionment percentage by the number of members representing the municipality.

For example, the CVA based apportionment percentage for the City of Hamilton is 19.92%, and given the two current representatives, each vote has a weight of  $19.92/2 = 9.96\%$ .

The regulation then continues to state “...the weighting for a municipality may not exceed 50 per cent of the total weighting, except where the majority of the members of a conservation authority are appointed by one municipality.”

For some conservation authorities, such as the Grand River Conservation Authority (GRCA), there is not a single municipality that represents a majority of the Directors. The GRCA has 26 Directors with one municipality having the largest CVA that exceeds 50%, which is the Region of Waterloo. Given that the Region of Waterloo appoints 10 of the 26 Directors (which is not a majority), each Director appointed from the Region of Waterloo is assigned a weighted vote of 5.0% ( $50\%/10 = 5$ ). See Appendix 2 attached.

In the case of the NPCA, the Region of Niagara has the largest CVA at 78.15% that also exceeds the 50% rule. However, the Region of Niagara qualifies for the exception, where the majority of the members are appointed by one municipality. The current Board of Directors; which is comprised of 15 members, has 12 Directors from the Region of Niagara appointed to the NPCA.

Thus, it can be concluded that the weighted majority vote is not applicable to the NPCA, which in turn, explains why the NPCA has not adopted a weighted majority vote as per O. Reg. 139/96. For the NPCA, past budget have been approved by a majority of votes received from the Board of Directors that are not weighted.

This is the initial review of O. Reg. 139/96. The NPCA Board of Directors may opt to direct staff to obtain a legal review of the regulation for further analysis and interpretation.

#### **FINANCIAL IMPLICATIONS:**

None at this time.

#### **APPENDICES:**

1. Ontario Regulation 139/96
2. GRCA Report GM-02-15-12 (dated February 27, 2015)

**Prepared and Submitted by:**



**Carmen D'Angelo**  
**Chief Administrative Officer**  
**Secretary Treasurer**

**Conservation Authorities Act  
Loi sur les offices de protection de la nature**

**ONTARIO REGULATION 139/96**

**MUNICIPAL LEVIES**

**Consolidation Period:** From March 6, 1998 to the [e-Laws currency date](#).

Last amendment: O.Reg. 106/98.

***This Regulation is made in English only.***

**1. (1)** In this Regulation,

“non-matching levy” means a levy approved by a weighted majority of the members at a meeting for which 30 days notice was provided to the affected municipalities and at which a recorded vote was taken;

“weighted majority” means the votes of 51 per cent of those represented after the votes are weighted by the percentage that applied under this definition in 1997 for each municipality. O. Reg. 139/96, s. 1 (1); O. Reg. 231/97, s. 1 (1); O. Reg. 106/98, s. 1.

(1.1) A notice provided under subsection (1) for a meeting must include the amount of the non-matching levy to be voted on and must be accompanied by the financial information relied on in support of that levy. O. Reg. 231/97, s. 1 (2).

(2) For the purpose of the definition of “weighted majority”, the weighting for a municipality may not exceed 50 per cent of the total weighting, except where the majority of the members of a conservation authority are appointed by one municipality. O. Reg. 139/96, s. 1 (2).

**2.** A non-matching levy may be levied by conservation authorities against participating municipalities. O. Reg. 139/96, s. 2.

**3.** The total of non-matching levies for any project or activity may not exceed the total cost of the project or activity. O. Reg. 139/96, s. 3.

## Grand River Conservation Authority

**Report number:** GM-02-15-12  
**Date:** February 27, 2015  
**To:** Members of the Grand River Conservation Authority  
**Subject:** Weighted Voting – 2015 Budget and General Levy

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### **Recommendation:**

THAT Report GM-02-15-12 - Weighted Voting – 2015 Budget and General Levy be received as information.

### **Summary:**

The General Levy of a Conservation Authority must be approved by the General Membership, with each member's vote weighted by Modified Current Value Assessment as outlined in Ontario Regulation 139/96.

### **Report:**

Ontario Regulation 139/96 provides the basis for weighted voting to approve a Conservation Authority's General Levy. The formula caps any one municipality at 50%, in order to ensure that support is required from more than one participating municipality. In the case of Grand River Conservation Authority (GRCA), the Region of Waterloo's Modified Current Value Assessment (CVA) exceeds 50% of the watershed CVA, but under this formula, each of the Region's ten members are assigned a weighting of 5%. The remaining 50% is spread among the other members according to the proportion of CVA that their municipalities represent.

Attached, is a copy of the Regulation as well as the calculations of the weighted voting that will be used for the 2015 Budget and General Levy.

### **Financial implications:**

The proposed total General Levy for 2015 is \$10,548,000.

### **Other department considerations:**

None

### **Prepared by:**

*Keith Murch*  
*Assistant CAO and Secretary Treasurer*

### **Approved by:**

*Joe Farwell*  
*CAO*

**Conservation Authorities Act**  
**ONTARIO REGULATION 139/96**  
**MUNICIPAL LEVIES**

**1. (1) In this Regulation,**

“non-matching levy” means a levy approved by a weighted majority of the members at a meeting for which 30 days notice was provided to the affected municipalities and at which a recorded vote was taken;

“weighted majority” means the votes of 51 per cent of those represented after the votes are weighted by the percentage that applied under this definition in 1997 for each municipality. O. Reg. 139/96, s. 1 (1); O. Reg. 231/97, s. 1 (1); O. Reg. 106/98, s. 1.

(1.1) A notice provided under subsection (1) for a meeting must include the amount of the non-matching levy to be voted on and must be accompanied by the financial information relied on in support of that levy. O. Reg. 231/97, s. 1 (2).

(2) For the purpose of the definition of “weighted majority”, the weighting for a municipality may not exceed 50 per cent of the total weighting, except where the majority of the members of a conservation authority are appointed by one municipality. O. Reg. 139/96, s. 1 (2).

**2. A non-matching levy may be levied by conservation authorities against participating municipalities. O. Reg. 139/96, s. 2.**

**3. The total of non-matching levies for any project or activity**

| GRAND RIVER CONSERVATION AUTHORITY                |                              |               |               |                |                  |                |
|---|------------------------------|---------------|---------------|----------------|------------------|----------------|
| 2015 General Levy - Weighting of votes by Members |                              |               |               |                |                  |                |
| <u>Appointed</u>                                  | <u>Municipality/Group</u>    | <u>Weight</u> | <u>Absent</u> | <u>Present</u> | <u>In Favour</u> | <u>Opposed</u> |
| Les Armstrong                                     | Region of Waterloo           | 5.0%          |               |                |                  |                |
| Sue Foxton  | Region of Waterloo           | 5.0%          |               |                |                  |                |
| Helen Jowett                                      | Region of Waterloo           | 5.0%          |               |                |                  |                |
| Geoff Lorentz                                     | Region of Waterloo           | 5.0%          |               |                |                  |                |
| Jane Mitchell                                     | Region of Waterloo           | 5.0%          |               |                |                  |                |
| Joe Nowak   | Region of Waterloo           | 5.0%          |               |                |                  |                |
| Wayne Roth  | Region of Waterloo           | 5.0%          |               |                |                  |                |
| Sandy Shantz                                      | Region of Waterloo           | 5.0%          |               |                |                  |                |
| Warren Stauch                                     | Region of Waterloo           | 5.0%          |               |                |                  |                |
| Wayne Wettlaufer                                  | Region of Waterloo           | 5.0%          |               |                |                  |                |
| Bernie Corbett                                    | Haldimand & Norfolk Counties | 1.2%          |               |                |                  |                |
| Fred Morison                                      | Haldimand & Norfolk Counties | 1.2%          |               |                |                  |                |
| <i>name to be announced</i>                       | Region of Halton             | 2.8%          |               |                |                  |                |
| <i>name to be announced</i>                       | City of Hamilton (adjusted)  | 2.8%          |               |                |                  |                |
| Bruce Banbury                                     | County of Oxford             | 1.0%          |               |                |                  |                |
| Robert Hillier                                    | City of Brantford            | 4.8%          |               |                |                  |                |
| Vic Prendergast                                   | City of Brantford            | 4.8%          |               |                |                  |                |
| Bob Bell  | City of Guelph               | 8.6%          |               |                |                  |                |
| Mike Salisbury                                    | City of Guelph               | 8.6%          |               |                |                  |                |
| Guy Guardhouse                                    | Group 1:                     | 1.2%          |               |                |                  |                |
| Pat Salter  | Group 2:                     | 1.5%          |               |                |                  |                |
| George Wicke                                      | Group 3:                     | 0.5%          |               |                |                  |                |
| Kelly Linton                                      | Twp of Ctr Wellington        | 3.3%          |               |                |                  |                |
| Chris White                                       | Group 5:                     | 4.1%          |               |                |                  |                |
| Brian Coleman                                     | County of Brant              | 1.8%          |               |                |                  |                |
| Shirley Simons                                    | County of Brant              | 1.8%          |               |                |                  |                |
| TOTAL   |                              | 100.0%        | 0.0%          | 0.0%           | 0.0%             | 0.0%           |

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**Report To:** Board of Directors

**Subject:** 2016 Operating and Capital Budget

**Report No:** 108-15

**Date:** October 21, 2015

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**RECOMMENDATION:**

That the 2016 Operating and Capital budget for the Niagara Peninsula Conservation Authority be approved and the following apportionment costs identified in Chart #1 be forwarded to the participating municipalities in accordance with Section 2.(1)(b) of Ontario Regulation 670/00.

**Chart #1: Apportionment of Costs to Participating Municipalities**

| <b>Municipality</b> | <b>Niagara</b>   | <b>Hamilton</b>  | <b>Haldimand</b> | <b>Total</b>     |
|---------------------|------------------|------------------|------------------|------------------|
| Levy Formula        | 4,744,526        | 1,209,294        | 116,897          | 6,070,717        |
| Special Levy        | 2,678,728        | 119,897          | 0                | 2,798,625        |
| <b>Totals</b>       | <b>7,423,254</b> | <b>1,329,191</b> | <b>116,897</b>   | <b>8,869,342</b> |

**PURPOSE:**

To receive approval on the 2016 Operating and Capital budget by the NPCA Board of Directors and the subsequent approval on the apportionment costs to the participating municipalities.

**DISCUSSION:**

**Budget Guidance**

In preparation of their budgets, participating municipalities typically set “budget guidance” to their respective internal departments and ABCs (agencies, boards and commissions). For 2016, the Region of Niagara set their budget guidance at 0% with a 1% assessment growth option. The City of Hamilton provided a budget guidance of 1%. To date, no formal correspondence has been received from Haldimand County.

On September 17, 2015 the NPCA Budget Steering Committee met and deliberated revenue sources. One of the outcomes of the committee was the passing of a motion that staff prepare the 2016 Operating and Capital budgets with a total 1% increase budget guidance.



## Revenue

The primary revenue sources for the NPCA are identified via Chart #2:

**Chart #2: Revenue Sources for the NPCA**

| Revenues              | 2015              | 2016              | Variance       | %          |
|-----------------------|-------------------|-------------------|----------------|------------|
| <b>Municipal Levy</b> |                   |                   |                |            |
| Niagara               | 7,370,183         | 7,423,254         | 53,071         | 0.7        |
| Hamilton              | 1,317,020         | 1,329,191         | 12,171         | 0.9        |
| Haldimand             | 115,740           | 116,897           | 1,157          | 1.0        |
| <b>Sub-Totals</b>     | <b>8,802,943</b>  | <b>8,869,342</b>  | <b>66,399</b>  | <b>0.8</b> |
| Provincial            | 519,500           | 504,500           | (15,000)       |            |
| Federal               | 235,000           | 480,000           | 245,000        |            |
| Parks                 | 1,394,500         | 1,293,050         | (101,450)      |            |
| Permits               | 350,000           | 355,000           | 5,000          |            |
| Other                 | 290,600           | 266,675           | (23,925)       |            |
| Grants (Matching)     | 0                 | 694,500           | 694,500        |            |
| Reserves              | 480,000           | 245,244           | (234,756)      |            |
| Foundation            | 0                 | 70,000            | 70,000         |            |
| <b>Totals</b>         | <b>12,072,543</b> | <b>12,778,311</b> | <b>705,768</b> | <b>5.8</b> |

As identified in Chart #2, the overall levy increase for municipalities is 0.8%, which meets the budget guidance as set by the NPCA Steering Committee. The levy increase for the Region of Niagara is 0.7% with a received municipal budget guidance of 0% with a 1% assessment growth option (as determined by Niagara Regional Council), the levy increase for the City of Hamilton is 0.9% with a received municipal budget guidance of 1.0%, and the levy increase for Haldimand County is 1%.

There is an increase in federal revenue as the NPCA was successful in receiving a Canada 150 funding grant for the federal government. The \$245,000 is allocated to the Binbrook Conservation Area for an enhanced children's splash pad as identified in the Binbrook Conservation Authority Master Plan.

Grants and Revenues increased \$694,500, where \$245,000 is required to match the Canada 150 funding grant, \$224,750 from the Region of Niagara has been carried over for the Lakefront Enhancement Strategy projects and subsequently another \$224,750 is matching funding for the Lakefront Enhancement Strategy projects.

Direction from the NPCA Board was received to reduce operating cost dependency on reserves. In 2015, \$480,000 was required to offset operational costs and in 2016 this dependency was reduced to \$245,244 in 2016 and is anticipated to be further reduced in 2017.

It should be noted that the City of Hamilton is continuing with their appeal on the levy apportionment under O. Reg. 670/00. All parties involved (NPCA, Region of Niagara, City of Hamilton, and Haldimand County) have agreed to mediation that will be administered by the Office of the Mining and Lands Commissioner. Mediation may occur in December of this year.

## 2016 Operating Costs

Overall, the operating costs for the NPCA are projected to increase 1.95% in 2016 as identified in Chart #3:

**Chart #3: 2016 Operating Costs**

|                       | 2015              | 2016              | Variance            |
|-----------------------|-------------------|-------------------|---------------------|
| Wages and Benefits    | 5,818,577         | 5,954,724         | 136,147             |
| Corporate Services    | 1,825,424         | 1,740,652         | (84,772)            |
| Occupancy Costs       | 457,300           | 470,600           | 13,300              |
| Watershed             | 412,000           | 435,500           | 23,500              |
| Park Operations       | 353,000           | 398,660           | 45,660              |
| Vehicle and Equipment | 316,677           | 314,810           | (1,867)             |
| Professional Fees     | 290,200           | 307,800           | 17,600              |
| Employee Expenses     | 179,720           | 212,660           | 32,940              |
| Marketing             | 191,300           | 189,560           | (1,740)             |
| Office Expenses       | 178,145           | 178,090           | (55)                |
| Board Expenses        | 60,100            | 59,510            | (590)               |
| Ecological            | 0                 | 16,000            | 16,000              |
| <b>Total</b>          | <b>10,082,443</b> | <b>10,278,566</b> | <b>196,123 1.95</b> |

The primary pressure is employee wages, benefits and expenses which equates to 86% increase in the operating costs. Park operations has also increased to reflect greater attendance and usage at the NPCA parks.

## 2016 Capital Projects

In 2015, the Region of Niagara passed a motion to set the 2015 levy apportionment for NPCA consideration at 2% over the 2014 levy.

Given that the levy apportionment formula was changed in 2015 to comply with O. Reg. 670/00, the overall result for the City of Hamilton was an increase of \$803,507 and a decrease for the Region of Niagara of \$427,469.

However, for 2015, given the Region of Niagara's motion, the decrease in the levy was not applied and funds were allocated to the capital reserve. The difference between the Region of Niagara levy apportionment as per the provincial funding formula and the amount of levy the Region of Niagara allocates to the NPCA is called the "Niagara Levy Apportionment Differential".

The “Niagara Levy Apportionment Differential” for 2016 is \$431,744 and the NPCA Budget Steering Committee has recommended allocation of this funding to the Niagara Capital Reserve.

The NPCA has prepared a 5-Year Capital Forecast and work has commenced to extend the forecast to 10 years. Overall, the current capital deficit is approximately \$32 million. The 5-Year Capital Forecast was prepared prioritizing capital projects from 2016 to 2020 respectively. The total funding required for the 2016 prioritized capital projects is \$3,152,500 (see Appendix 1 entitled 2016 Capital Projects).

In 2016, total revenues of \$12,778,311 were subtracted by operating costs of \$10,278,566 leaving a balance of \$2,499,745. The balance was then further reduced by \$1,031,744 representing contributions to the land acquisition programs and reserves. The remainder \$1,468,001 is then allocated to the 2016 prioritized capital projects.

With only \$1,468,001 allocated to the 2016 capital projects, and a capital need of \$3,152,500, a total of \$1,684,500 has been deferred to 2017. The 5-Year Capital Forecast is referenced in Chart #4.

**Chart 4: 5-Year Capital Forecast**

| Year             | Projections |            | Balance   |
|------------------|-------------|------------|-----------|
| 2016 Prioritized | 3,152,500   | -1,468,000 | 1,684,500 |
| 2017 Prioritized | 2,071,000   | +1,684,500 | 3,755,500 |
| 2018 Prioritized | 2,336,000   |            |           |
| 2019 Prioritized | 2,716,000   |            |           |
| 2020 Prioritized | 2,016,000   |            |           |
| Other Projects   | 19,805,000  |            |           |

## Summary

Overall, the 2016 NPCA Operating and Capital budgets represents a 0.8% increase to the municipal levies which meets the NPCA Steering Committee's budget guidance of 1.0%.

Revenue increased 5.2% primarily due to matching funding grants. Operations increased 1.95% primarily due to wages, benefits and expenses.

The Niagara levy apportionment differential of \$427,469 was allocated to capital reserves.

Prioritized 5-Year Capital forecast has been developed.

At the NPCA's Budget Steering Committee of October 7, 2015 the 2016 Operating and Capital budgets were approved to be recommended to the NPCA Board of Directors.

**RELATED REPORTS AND APPENDICES:**

1. 2016 Capital Budget
2. 2016 Operating Budget

**Submitted by:**

A handwritten signature in black ink, appearing to read 'C. D'Angelo', is written over a solid horizontal line.

**Carmen D'Angelo  
Chief Administrative Officer  
Secretary Treasurer**

*This report was prepared with the consultative input from Budget Steering Committee and the Senior Management Team.*

**Niagara Peninsula Conservation Authority  
Consolidated Income Statement  
2015 Forecast & 2016 Budget**

|                                    | 2015<br>Forecast | 2015<br>Budget | Act vs. Bdgt<br>B / (W) | 2016<br>Budget | 2016 Bdgt vs. 2015 Bdgt |             |
|------------------------------------|------------------|----------------|-------------------------|----------------|-------------------------|-------------|
|                                    |                  |                |                         |                | \$<br>B / (W)           | %<br>Change |
| <b>Revenues</b>                    |                  |                |                         |                |                         |             |
| <b>Region of Niagara</b>           |                  |                |                         |                |                         |             |
| Matching Levy - Formula            | 4,697,550        | 4,697,550      | -                       | 4,744,526      | 46,976                  | 1.0%        |
| Special Levy                       | 2,672,633        | 2,672,633      | -                       | 2,678,728      | 6,095                   | 0.2%        |
| <b>Total Region of Niagara</b>     | 7,370,183        | 7,370,183      | -                       | 7,423,254      | 53,071                  | 0.7%        |
| <b>City of Hamilton</b>            |                  |                |                         |                |                         |             |
| Matching Levy - Formula            | 1,197,320        | 1,197,320      | -                       | 1,209,294      | 11,974                  | 1.0%        |
| Special Levy                       | 119,700          | 119,700        | -                       | 119,897        | 197                     | 0.2%        |
| <b>Total City of Hamilton</b>      | 1,317,020        | 1,317,020      | -                       | 1,329,191      | 12,171                  | 0.9%        |
| <b>Haldimand County</b>            |                  |                |                         |                |                         |             |
| Matching Levy - Formula            | 115,740          | 115,740        | -                       | 116,897        | 1,157                   | 1.0%        |
| <b>Total Municipalities</b>        |                  |                |                         |                |                         |             |
| Matching Levy - Formula            | 6,010,610        | 6,010,610      | -                       | 6,070,717      | 60,107                  | 1.0%        |
| Special Levy                       | 2,792,333        | 2,792,333      | -                       | 2,798,625      | 6,292                   | 0.2%        |
| <b>Total Municipalities</b>        | 8,802,943        | 8,802,943      | -                       | 8,869,342      | 66,399                  | 0.8%        |
| <b>Provincial Funding</b>          | 471,561          | 519,500        | (47,939)                | 504,500        | (15,000)                | -2.9%       |
| <b>Federal</b>                     | 105,000          | 235,000        | (130,000)               | 480,000        | 245,000                 | 104.3%      |
| <b>Permits and Regulatory Fees</b> | 417,726          | 350,000        | 67,726                  | 355,000        | 5,000                   | 1.4%        |
| <b>Park Operations</b>             | 1,162,760        | 1,394,500      | (231,740)               | 1,293,050      | (101,450)               | -7.3%       |
| <b>Other Revenues</b>              | 145,461          | 192,600        | (47,139)                | 206,675        | 14,075                  | 7.3%        |
| <b>Interest Income</b>             | 73,970           | 98,000         | (24,030)                | 60,000         | (38,000)                | -38.8%      |
| <b>Reserves &amp; Foundation</b>   | -                | 480,000        | (480,000)               | 1,009,744      | 529,744                 | 110.4%      |
| <b>Total Revenue</b>               | 11,179,421       | 12,072,543     | (893,122)               | 12,778,311     | 705,768                 | 5.8%        |

**Niagara Peninsula Conservation Authority  
Consolidated Income Statement  
2015 Forecast & 2016 Budget**

|                                  | 2015<br>Forecast | 2015<br>Budget    | Act vs. Bdgt<br>B / (W) | 2016<br>Budget    | 2016 Bdgt vs. 2015 Bdgt |               |
|----------------------------------|------------------|-------------------|-------------------------|-------------------|-------------------------|---------------|
|                                  |                  |                   |                         |                   | \$<br>B / (W)           | %<br>Change   |
| <b>Expenses</b>                  |                  |                   |                         |                   |                         |               |
| Salaries & Benefits              | 5,543,781        | 5,818,577         | 274,795                 | 5,954,724         | (136,148)               | -2.3%         |
| HR & Employee Expenses           | 136,209          | 179,720           | 43,511                  | 212,660           | (32,940)                | -18.3%        |
| Board & Volunteer Expenses       | 59,292           | 60,100            | 808                     | 59,510            | 590                     | 1.0%          |
| Professional Fees                | 233,628          | 290,200           | 56,572                  | 307,800           | (17,600)                | -6.1%         |
| Occupancy Costs                  | 459,064          | 457,300           | (1,764)                 | 470,600           | (13,300)                | -2.9%         |
| Office Expenses                  | 144,860          | 176,745           | 31,885                  | 176,690           | 55                      | 0.0%          |
| Ecological Expenses              | -                | -                 | -                       | 16,000            | (16,000)                | 100.0%        |
| IT, GIS & Communications         | 13,306           | 1,400             | (11,906)                | 1,400             | -                       | 0.0%          |
| Marketing & Promotions           | 137,004          | 191,300           | 54,296                  | 189,560           | 1,740                   | 0.9%          |
| Vehicles & Equipment             | 213,318          | 316,677           | 103,359                 | 314,810           | 1,867                   | 0.6%          |
| Watershed Services               | 376,327          | 412,000           | 35,673                  | 435,500           | (23,500)                | -5.7%         |
| Park Maintenance                 | 254,542          | 353,000           | 98,458                  | 398,660           | (45,660)                | -12.9%        |
| Corporate Services               | 2,308,674        | 1,825,424         | (483,250)               | 1,740,652         | 84,772                  | 4.6%          |
| <b>Total Operating Expenses</b>  | <b>9,880,006</b> | <b>10,082,443</b> | <b>202,437</b>          | <b>10,278,566</b> | <b>(196,124)</b>        | <b>-1.95%</b> |
| <b>Operating Surplus</b>         | <b>1,299,415</b> | <b>1,990,100</b>  | <b>(690,685)</b>        | <b>2,499,745</b>  | <b>509,644</b>          | <b>25.6%</b>  |
| <b>Less:</b>                     |                  |                   |                         |                   |                         |               |
| Land Acquisition Reserve Funding | 600,000          | 600,000           | -                       | 600,000           | -                       |               |
| Levy Apportionment Reserve       | 347,000          | 347,000           | -                       | 431,744           | 84,744                  |               |
| Capital Budget                   | 1,043,100        | 1,043,100         | -                       | 1,468,000         | 424,900                 |               |
| <b>Surplus / (Deficit)</b>       | <b>(690,685)</b> | <b>0</b>          | <b>(690,685)</b>        | <b>1</b>          | <b>0</b>                | <b>24.0%</b>  |

**Report To:** Board of Directors

**Subject:** Conservation Area Rates & Fee Schedule 2016

**Report No:** 109-15

**Date:** October 21, 2015

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**RECOMMENDATION:**

That the NPCA Board **APPROVE** the 2016 Conservation Area Fee Schedule as outlined in Appendix 1 of this report.

**PURPOSE:**

For the NPCA Board to consider the 2016 Conservation Area fee structure.

This report aligns with the 2014-2017 NPCA Strategic Plan under 'Effective Communication with Stakeholders & Public.'

**BACKGROUND:**

NPCA staff have consulted with neighbouring Conservation Authorities and park agencies to compare fees for services (Appendix 2). Senior Operations staff, including Park Superintendents, met to analyze and recommend fee changes to the Board. A summary of the proposed Conservation Area Program Fees is attached as Appendix 1 of this report.

**DISCUSSION:**

◆ Day Use Fees

The recommendation for Day Use fees for adults, students and seniors is to make them consistent throughout the four revenue generating parks. This results in a nominal increase for 3 of the parks as they meet the existing benchmark set by Binbrook. From an advertising perspective, it makes the fee structure more uniform and easier to read and enforce.

NPCA should also generate additional revenue capture by having the prices excluding taxes (historically prices have been set to be inclusive of taxes). All fees will be advertised without tax included. Most areas are experiencing a steady growth in day use attendance, with the exception of Long Beach, where visitor numbers are being impacted by the nearby Regional Access Beach.



◆ Pavilion Rentals

Pavilion rental fees are recommended to increase from \$100 to \$110 + tax for a roofed Pavilion and from \$55 to \$60 + tax for an Open Air Picnic Area.

◆ Membership Pass

The membership (seasonal day) pass fee is recommended to be adjusted to a uniform \$89, plus tax, across the board. This pass will be good at all NPCA owned and operated parks. It will become a Season pass, recommended to be valid only for the 2016 season. It will not carry over from year to year as a 12-month pass as has been past practice. Staff believe the price point of this product is well placed in comparison to similar pass programs offered by the Hamilton Conservation Authority and Conservation Halton; who have more fee-for-service operations. Staff further recommend eliminating the Senior/ Youth and early renewal fees for simplicity and easier advertising. No further incentive coupons are being recommended.

◆ Camping Fees

As previously noted, NPCA staff have consulted with neighbouring Conservation Authorities and park agencies to compare fees for services (Appendix 2). NPCA rates for camping, both one-night rates and seasonal rates, are the lowest amongst the twelve comparables. Therefore, staff have been recommending nominal fee increases over the next few years in an attempt to bring fees closer to the public park average. Currently, NPCA camping facilities and amenities do not justify a significant increase relative to the amenities offered by private parks.

In 2015, Seasonal camping fees increased \$100, however, seasonal campers were offered one free membership pass to offset their 'extra vehicle permit' cost; valued at \$70. 2015 also saw the NPCA add a Long Weekend premium on all sites of \$4. NPCA campgrounds are at capacity during these peak periods showcasing the high demand. This is a common practice at many campgrounds and it is recommended to continue to do so at NPCA campgrounds.

For 2016, staff is recommending the one-night fee for camping increase by \$1. Further, that the Seasonal camping fee increase by \$100.

Demand at Long Beach and Chippawa Creek, particularly 30amp electrically serviced camping, is very strong. There is a waiting list for these sites and an increase in advance bookings each season. Trends in both advanced bookings and increased waiting lists, point to a steady increase in demand and supports an additional nominal increase for the 2016 season.

**FINANCIAL IMPLICATIONS:**


The estimated financial implications of the recommended nominal fee changes should result in additional revenues of approx. \$30-35,000/year (approx. \$15,000 Day-Use/\$4,000 Membership Pass/\$15,000 Seasonal).

Further, as a friendly reminder to the Board, staff anticipate additional revenue capture in the 2016 season as a result of the fee increases approved by the Board in Nov. 2014 related to rentals for the Church/Barn/Centre at Balls Falls as well as the Pavilions at the other operating parks (Appendix 3).

**RELATED REPORTS AND APPENDICES:**

1. Appendix 1- Proposed 2016 CA Fee Schedule
2. Appendix 2- 2015 Fee Comparison
3. Appendix 3- Approved Rates & Fees for Church/Barn/Centre/Pavilions to 2017

**Prepared by:**

  
\_\_\_\_\_  
**David Barrick**  
**Director of Operations**

**Submitted by:**

  
\_\_\_\_\_  
**Carmen D'Angelo**  
**Chief Administrative Officer**  
**Secretary Treasurer**

*This report was prepared with the consultative input from: Gregg Furtney, Supervisor of Operations.*

### Proposed 2016 Fee Schedule

#### Long Beach and Chippawa Creek

| Day Use (plus tax)                                   | 2014        | 2015        | 2016        |
|--|-------------|-------------|-------------|
| Adults   | \$ 4.00     | \$ 4.00     | \$ 6.00     |
| Seniors  | \$ 3.00     | \$ 3.00     | \$ 4.00     |
| Students   | \$ 3.00     | \$ 3.00     | \$ 4.00     |
| Max Car  | \$ 15.00    | \$ 15.00    | \$ 18.00    |
| Bus (over 20/ vehicle)                               | \$ 79.10    | \$ 79.10    | \$ 120.00   |
| Camping (non-serviced) (plus tax)                    | 2014        | 2015        | 2016        |
| One Night  | \$ 34.00    | \$ 34.00    | \$ 35.00    |
| Seasonal   | X           | X           | X           |
| Camping (15 Amp) (plus tax)                          |             |             |             |
| One Night  | \$ 38.00    | \$ 38.00    | \$ 39.00    |
| Seasonal   | \$ 1,900.00 | \$ 2,000.00 | \$ 2,100.00 |
| Camping (15 Amp Premium) (plus tax)                  | 2014        | 2015        | 2016        |
| One Night  | \$ 40.00    | \$ 42.00    | \$ 43.00    |
| Seasonal   | \$ 2,100.00 | \$ 2,200.00 | \$ 2,300.00 |
| Camping (30 Amp + Water) (plus tax)                  | 2014        | 2015        | 2016        |
| One Night  | \$ 42.00    | \$ 44.00    | \$ 45.00    |
| Seasonal   | \$ 2,200.00 | \$ 2,300.00 | \$ 2,400.00 |
| Camping (30 Amp Premium/<br>or Lakefront) (plus tax) | 2014        | 2015        | 2016        |
| One Night  | \$ 44.00    | \$ 46.00    | \$ 47.00    |
| Seasonal   | \$ 2,400.00 | \$ 2,500.00 | \$ 2,600.00 |

| Hunting Permits (tax included) | 2014     | 2015     | 2016     |
|--------------------------------|----------|----------|----------|
| Hunting Permit                 | \$ 25.00 | \$ 30.00 | \$ 30.00 |

#### Binbrook Conservation Area

| Day Use (plus tax)           | 2014      | 2015      | 2016      |
|------------------------------|-----------|-----------|-----------|
| Car and Driver               | \$ 5.25   | \$ 6.00   | \$ 6.00   |
| Additional Adult             | \$ 4.25   | \$ 5.00   | \$ 5.00   |
| Senior/ Student              | \$ 3.25   | \$ 4.00   | \$ 4.00   |
| Max Car                      | \$ 16.00  | \$ 18.00  | \$ 18.00  |
| Bus (over 20/ vehicle)       | \$ 79.10  | \$ 90.00  | \$ 120.00 |
| Facilities Rental (plus tax) | 2014      | 2015      | 2016      |
| Picnic Pavilion              | \$ 100.00 | \$ 100.00 | \$ 110.00 |
| Open Air Picnic Area         | \$ 55.00  | \$ 55.00  | \$ 60.00  |

#### Ball's Falls Conservation Area

| Day Use (plus tax)     | 2014      | 2015      | 2016      |
|------------------------|-----------|-----------|-----------|
| Adult                  | \$ 5.75   | \$ 5.00   | \$ 6.00   |
| Senior/ Student        | \$ 4.25   | \$ 3.50   | \$ 4.00   |
| Max Car                | \$ 18.00  | \$ 14.00  | \$ 18.00  |
| Bus (over 20/ vehicle) | \$ 110.00 | \$ 110.00 | \$ 120.00 |
| Self Pay/ Donation     |           | \$ 5.00   | \$ 5.00   |

#### Membership Pass (plus HST)

| Park (plus tax)                   | 2014     | 2015     | 2016     |
|-----------------------------------|----------|----------|----------|
| Ball's Falls                      | \$ 70.00 | \$ 80.00 | x        |
| Ball's Falls Senior/ Student Rate | X        | \$ 70.00 | x        |
| Binbrook                          | \$ 70.00 | \$ 85.00 | x        |
| Binbrook Senior/ Student Rate     | X        | \$ 75.00 | x        |
| CCCA/ LBCA                        | \$ 70.00 | \$ 70.00 | x        |
| CCCA? LBCA Senior/ Student Rate   | X        | \$ 60.00 | x        |
| All Park Pass                     | X        | \$ 95.00 | \$ 89.00 |

**2015 Fee Comparison**

\*based on comparisons with 12 other parks / agencies

Notes:

All fees shown do NOT include tax

Some cells have been left blank where fee was unclear or not provided.

| <u>Organization</u>                  | <u>NPCA</u>  | <u>NPCA</u>  | <u>GRCA</u> | <u>HCA</u> | <u>HCA</u> | <u>Rock Pt.</u> | <u>Bissell's</u> | <u>N.E.T</u> | <u>Windmill</u> | <u>Highland</u> | <u>Knight's</u> | <u>NF KOA</u> | <u>Campark</u> | <u>Jellystone</u> |
|--------------------------------------|--------------|--------------|-------------|------------|------------|-----------------|------------------|--------------|-----------------|-----------------|-----------------|---------------|----------------|-------------------|
| Year                                 | 2014         | 2015         | 2015        | 2015       | 2015       | 2015            | 2015             | 2015         | 2015            | 2015            | 2015            | 2015          | 2015           | 2015              |
| Facility                             | <u>LB/CC</u> | <u>LB/CC</u> | Byng        | Valens     | 50 Point   |                 |                  |              | seasonal        |                 | website         |               |                |                   |
|                                      |              |              |             |            |            |                 |                  |              | rate very       |                 | down            |               |                |                   |
|                                      |              |              |             |            |            |                 |                  |              | old             |                 |                 |               |                |                   |
| RESERVATION FEE:                     | \$12.00      | \$12.00      | \$13.00     | \$12.00    | \$12.00    | \$13.00         |                  |              |                 |                 |                 |               |                |                   |
| RESERVATION "Change" FEE (shorten):  | \$8.00       | \$12.00      | \$8.00      | \$7.00     | \$7.00     | \$10.50         |                  |              |                 |                 |                 |               |                |                   |
| RESERVATION "Cancellation" FEE:      | \$8.00       | \$12.00      | \$15.00     | \$7.00     | \$7.00     | \$10.50         |                  |              |                 |                 |                 |               |                |                   |
|                                      |              |              |             |            |            |                 |                  |              |                 |                 |                 |               |                |                   |
| Debit Fee (for purchases under \$10) | \$0.50       | \$0.50       |             |            |            |                 |                  |              |                 |                 |                 |               |                |                   |
|                                      |              |              |             |            |            |                 |                  |              |                 |                 |                 |               |                |                   |
| ADDITIONAL VEHICLE FEE / night:      | \$12.00      | \$12.00      | \$12.50     | \$10.00    | \$10.00    | \$13.00         | 20pp             |              |                 |                 |                 |               |                |                   |
| WEEKEND PREMIUM FEE / night:         |              |              |             |            |            |                 | extra            | extra        |                 |                 | extra           | extra         | extra          | extra             |
|                                      |              |              |             |            |            |                 |                  |              |                 |                 |                 |               |                |                   |
| <b>CAMPING</b>                       |              |              |             |            |            |                 |                  |              |                 |                 |                 |               |                |                   |
| <b>NON-SERVICED:</b>                 |              |              |             |            |            |                 |                  |              |                 |                 |                 |               |                |                   |
| 1 night                              | \$34.00      | \$34.00      | \$36.00     | \$37.00    | n/a        | \$36.00         | \$65.00          | \$40.00      | \$45.00         |                 | \$42.00         | \$ 63.00      | \$42.00        | \$ 42.00          |
| Week                                 |              |              |             |            |            |                 |                  |              | \$270.00        |                 | \$269.95        |               |                |                   |
| Season                               | none         | none         | \$1,635.00  | n/a        |            | n/a             |                  |              |                 |                 |                 |               |                |                   |
|                                      |              |              |             |            |            |                 |                  |              |                 |                 |                 |               |                |                   |
| <b>NON-SERVICED PREMIUM (NEW):</b>   |              |              |             |            |            |                 |                  |              |                 |                 |                 |               |                |                   |
| 1 night                              | \$36.00      | \$36.00      |             |            |            |                 |                  |              |                 |                 |                 |               |                |                   |
| season                               | none         | none         | \$1,750.00  |            |            |                 |                  |              |                 |                 |                 |               |                |                   |
|                                      |              |              | \$1,985.00  |            |            |                 |                  |              |                 |                 |                 |               |                |                   |
| <b>15AMP &amp; WATER</b>             |              |              |             |            |            |                 |                  |              |                 |                 |                 |               |                |                   |
| 1 night                              | \$38.00      | \$38.00      |             |            |            |                 |                  |              |                 |                 |                 | \$ 63.00      | \$ 48.00       | \$ 49.00          |
| Week                                 |              |              |             |            |            |                 |                  |              |                 |                 |                 |               |                |                   |
| Season                               | \$1,900.00   | \$2,000.00   |             |            |            |                 |                  |              |                 |                 |                 |               |                |                   |
|                                      |              |              |             |            |            |                 |                  |              |                 |                 |                 |               |                |                   |
| <b>15AMP PREMIUM &amp; WATER</b>     |              |              |             |            |            |                 |                  |              |                 |                 |                 |               |                |                   |
| 1night                               | \$40.00      | \$42.00      |             |            |            |                 |                  |              |                 |                 |                 |               |                |                   |
| Week                                 |              |              |             |            |            |                 |                  |              |                 |                 |                 |               |                |                   |
| Season                               | \$2,100.00   | \$2,200.00   |             |            |            |                 |                  |              |                 |                 |                 |               |                |                   |
|                                      |              |              |             |            |            |                 |                  |              |                 |                 |                 |               |                |                   |
| <b>30AMP &amp; WATER</b>             |              |              |             |            |            |                 |                  |              |                 |                 |                 |               |                |                   |
| 1 night                              | \$42.00      | \$44.00      | \$45.00     | \$43.00    | \$43.00    | \$41.00         | \$75.00          | \$45.00      | \$48.00         |                 | \$52.00         | \$ 78.00      | \$ 53.00       | \$ 53.00          |
| Week                                 |              |              |             |            | sewer      |                 |                  | sewer        | 288-312         |                 | \$332.10        |               |                |                   |
| Season                               | \$2,200.00   | \$2,300.00   | \$2,335.00  | n/a        | n/a        | n/a             | \$3,900.00       | \$2,575.00   | \$2,900.00      | \$2,550.00      | \$2,260.00      |               |                |                   |
|                                      |              |              |             |            |            |                 |                  |              |                 |                 | sewer           |               | sewer          | sewer             |
| <b>30AMP PREMIUM &amp; WATER</b>     |              |              |             |            |            |                 |                  |              |                 |                 |                 |               |                |                   |

| Organization                               | NPCA       | NPCA       | GRCA       | HCA         | HCA       | Rock Pt. | Bissell's  | N.E.T      | Windmill   | Highland   | Knight's   | NF KOA    | Campark   | Jellystone |
|--|------------|------------|------------|-------------|-----------|----------|------------|------------|------------|------------|------------|-----------|-----------|------------|
| 1 night                                    | \$44.00    | \$46.00    | \$45.00    |             |           | \$44.75  |            |            |            |            |            |           |           |            |
| Week                                       |            |            |            |             |           |          |            |            |            |            |            |           |           |            |
| Season                                     | \$2,400.00 | \$2,500.00 | \$2,610.00 |             |           |          |            |            |            |            | \$3,765.00 |           |           |            |
|  |            |            |            |             |           |          |            |            |            |            |            |           |           |            |
| <b>50AMP WATER &amp; SEWER</b>             |            |            |            |             |           |          |            |            |            |            |            |           |           |            |
| 1 night                                    |            |            |            |             | \$48.00   |          | \$80.00    |            |            |            |            | \$ 83.00  | \$ 53.00  | \$ 68.00   |
| Week                                       |            |            |            |             | sewer     |          |            |            |            |            |            | sewer     | sewer     | sewer      |
| Season                                     |            |            |            |             | n/a       |          | \$4,500.00 | \$2,775.00 |            |            |            |           |           |            |
|  |            |            |            |             |           |          |            |            |            |            |            |           |           |            |
| <b>OTHER:</b>                              |            |            |            |             |           |          |            |            |            |            |            |           |           |            |
| sewer hookup                               |            |            |            |             |           |          | extra      |            |            |            |            |           |           |            |
| electricity bill (seasonal)                |            |            |            |             |           |          | extra      | extra      |            |            |            |           |           |            |
| cabin                                      |            |            |            |             |           |          | 100 - 300  | \$70.00    |            |            | available  | available | available |            |
| Weekend Premium Rates                      |            |            |            | below       | below     |          | extra      | \$5/nt     |            |            | extra      |           |           |            |
| Extra person                               |            |            |            |             |           |          | \$20.00    |            |            |            |            |           |           |            |
| Pets                                       | 2 max      | 2max       |            |             |           |          |            |            | \$5.00     |            |            |           |           |            |
| Air Conditioner Fee / day                  |            |            |            |             |           |          |            |            |            |            |            |           |           |            |
| Premium Campsite Fee                       |            |            |            |             |           |          | extra      |            |            |            | \$7,000.00 |           |           |            |
| Large Trailer Premium                      |            |            |            |             |           |          |            | \$175.00   |            |            |            |           |           |            |
| Full-Time Seasonal Premium                 |            |            |            |             |           |          |            | \$200.00   |            |            |            |           |           |            |
| Pull-Thru Site Premium                     |            |            |            |             |           |          |            |            |            |            |            |           |           |            |
| Combined Shed / Storage Fee                |            |            |            |             |           |          |            |            |            |            |            |           |           |            |
| Vehicle Pass                               |            |            | 122 & 77   | 100/72/57   | 100/72/57 |          | 15pp       |            |            |            | \$300.00   |           |           |            |
| Deck storage fee                           | \$20.00    | \$20.00    |            |             |           |          |            |            |            |            |            |           |           |            |
|  |            |            |            | alcohol ban |           |          |            |            |            |            |            |           |           |            |
|  |            |            |            |             |           |          |            |            |            |            |            |           |           |            |
| <b>COMPARISONS (weekends):</b>             |            |            |            |             |           |          |            |            |            |            |            |           |           |            |
| Non-serviced: 2 nights, 2 adults, 3 kids   | \$72.00    | \$72.00    | \$72.00    | \$74.00     | none      | \$72.00  | \$130.00   | \$80.00    | \$90.00    | none       | \$84.00    | \$ 126.00 | \$ 84.00  | \$ 84.00   |
| 15amp Serviced: 2 nights, 2 adults, 3 kids | \$76.00    | \$76.00    | none       | none        | none      | none     | none       | none       | none       | none       | none       | \$ 126.00 | \$ 96.00  | \$ 98.00   |
| 30amp Serviced: 2 nights, 2 adults, 3 kids | \$84.00    | \$88.00    | \$90.00    | \$86.00     | \$86.00   | \$82.00  | \$150.00   | \$90.00    | \$96.00    | none       | \$104.00   | \$156.00  | \$ 106.00 | \$ 136.00  |
| 30amp/seasonal: 2adults, 2students, 2cars  | \$2,200.00 | \$2,300.00 | \$2,335.00 | none        | none      | none     | \$3,900.00 | \$2,575.00 | \$2,900.00 | \$2,550.00 | \$2,260.00 | ?         | none      | none       |

**Where We Sit:**

|                                |                              |                         |                 |
|--------------------------------|------------------------------|-------------------------|-----------------|
| Lowest unserviced weekend rate | Lowest serviced weekend rate | Lowest "seasonal" rate. | Area of concern |
|--------------------------------|------------------------------|-------------------------|-----------------|

\$6 nightly discount to passholders  
changes from weekend premium rate to upselling passes

| CONSERVATION AREAS PRICE LIST | 2014 | 2015 | 2016 | 2017 |
|-------------------------------|------|------|------|------|
|-------------------------------|------|------|------|------|

**Ball's Falls Conservation Area \***

|   |       |        |        |        |
|---|-------|--------|--------|--------|
| Church Wedding (2 hour limit)   | \$577 | \$577  | \$700  | \$750  |
| Barn Reception – non-licensed   | \$688 | \$890  | \$1800 | \$2000 |
| Barn Reception –licensed  | \$880 | \$1150 | \$1800 | \$2000 |
| Set-up Rental (5pm – 10pm)<br>*These rates apply only if available within 2 weeks of wedding date | \$50  | \$75   | \$200  | \$225  |

All Barn Wedding Ceremonies are to be held inside only. No outside receptions permitted. Alcohol is not permitted outside of the barn.

**Centre for Conservation Glen Elgin Room \***

|   |        |        |        |        |
|---|--------|--------|--------|--------|
| Glen Elgin Room Reception – non-licensed  | \$1100 | \$1155 | \$2100 | \$2300 |
| Glen Elgin Room Reception –licensed   | \$1280 | 1400   | \$2100 | \$2300 |
| Glen Elgin Room Ceremony<br>*up to 170 Guests, 11-4pm   | -      | \$750  | \$900  | \$950  |
| Set-up Rental (5pm – 10pm)<br>*These rates apply only if available within 2 weeks of wedding date | \$150  | \$150  | \$200  | \$225  |
| Pavilion Wedding *All Pavilion have a maximum of 25 guests.                                       | \$500  | \$500  | \$600  | \$650  |
| Outdoor Natural Setting Ceremony  |        |        | \$625  | \$675  |

**Long Beach, Binbrook & Chippawa Creek Conservation Areas \***

|   |  |  |        |        |
|---|--|--|--------|--------|
| Beach/Outdoor Natural Setting Ceremony (2hr time allotment) |  |  | \$300  | \$325  |
| Pavilion ceremony only (3hr time allotment)                 |  |  | \$300  | \$325  |
| Pavilion Reception-Licensed                                 |  |  | \$850  | \$950  |
| Pavilion Ceremony & Reception- Licensed                     |  |  | \$1100 | \$1100 |
| Outdoor Ceremony & Pavilion Reception- Licensed             |  |  | \$1100 | \$1200 |

Other Conservation Areas where permissible-Contact Main office for rates

\*Received Full Board approval Nov. 19, 2014

**Report To:** Board of Directors

**Subject:** Morningstar Mill Discussions with City of St. Catharines  
**RE:** Land Management Agreement

**Report No:** 110-15

**Date:** October 21, 2015

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**RECOMMENDATION:**

1. That Report No. 110-15 be **RECEIVED**;
2. That the NPCA Board **AUTHORIZE** staff to enter into negotiations with the City of St. Catharines for the purpose of formulating a Land Management Agreement; for the NPCA to manage the Morningstar Mill property for a period of 2 years (2016/2017).
3. That staff report a draft agreement for Board consideration at a future meeting.

**PURPOSE:**

To determine whether the Board has an interest in furthering discussions with the City of St. Catharines regarding its Morningstar Mill property (Appendix 1: Map).

This report aligns with the NPCA 2014-2017 Strategic Plan under 'Effective Communication with Stakeholders & Public. This report further aligns with the Strategic Plan under 'Improved Capacity for Managing Assets & Land Program.' The NPCA fulfills this mandate by using its lands for regional recreation, heritage preservation and conservation education.

**BACKGROUND:**

At its February 23, 2015 meeting, the St. Catharines Ad Hoc Budget Review Committee passed the following motion:

*"That staff examine and report back to Council the potential sales possibilities and partnerships of the facilities listed."*

Among the properties listed was the Morningstar Mill. Following the resolution, in February, 2015, City staff approached NPCA staff to determine whether NPCA would be interested in acquiring the property. A meeting of the two staff groups was held to determine next steps and information needs. While the property appears to be well-suited to the NPCA portfolio of land holdings, preliminary findings suggest the financial



considerations may be significant. A staff report was then prepared for the NPCA Board and at its April 16, 2015 meeting the Board passed the following resolution:

*“That the NPCA Board **AUTHORIZE** staff to enter into in-depth discussions with the City of St. Catharines for the purpose of negotiating and determining the terms and conditions under which the acquisition of the Morningstar Mill could occur; and, that staff report back to the Board at a future Board meeting.”*

NPCA Board members and senior staff were also invited to tour the Morningstar Mill property.

### **DISCUSSION:**

Learning from the St. Johns Valley Centre experience, NPCA staff have been diligent in scoping the risks associated with acquiring the Morningstar Mill site. Part of this diligence includes an updated analysis of Capital improvements (Appendix 2); exploring possible revenue generating possibilities to help off-set any operating expenditures (Appendix 3 shows current City operating expenditures); a Rock Slope Assessment of the site, completed in Sept., to assess degree of liability (Appendix 4); as well as a dam assessment (currently underway).

The Capital improvements required for this site over the next 5-10 years, depending on programming requirements, is close to \$2 million. With that sated, City staff have shown that approximately \$590,000 of capital work has recently been completed on site and that there is an additional \$780,000 of approved budget room for additional projects to be completed at Morningstar Mill. This seriously lessens the impact on the NPCA should it wish to proceed in acquisition discussions.

The Rock Slope Assessment states, *“All buildings at the Morningstar site are currently located well back from the rock faces and the overhangs are presently no cause for concern in terms of the stability of the structures above.”* Further, the City is waiting to see the results of the dam assessment in order to determine where to best invest its \$780,000 of approved capital dollars for the site.

Therefore, in order to more fully assess the opportunities, challenges and risks associated with the potential transfer of the Morningstar Mill to the NPCA, both NPCA and City staff are recommending a 2-year Land Management Agreement. The NPCA management of the site would allow the waters to be tested, so to speak, and will give both parties an opportunity to move toward a transition, without a full acquisition, until the dam assessment is complete and capital works by the City can be completed as agreed upon.

Staff believe this is a responsible approach that, after a 2-year period, would allow both parties the option to move forward on acquisition or pull back at that time. It would also allow the NPCA to make a more informed decision that, after 2 years of managing the property, would be more fully aware of the impacts of acquiring Morningstar Mill.

### **FINANCIAL IMPLICATIONS:**

There are no direct costs associated with this report. However, should the Board approve staff to negotiate a Land Management Agreement, financial implications will be reported prior to final approval. With that stated, the intent of any agreement considered would be to have zero impact on the expenditure side of the 2016 budget.

Other options include, ceasing all discussions with the City of St. Catharines regarding Morningstar Mill or to move forward negotiating for the acquisition of this property.

### **RELATED REPORTS AND APPENDICES:**

1. Appendix 1: Map of Morningstar Mill
2. Appendix 2: Capital Project Summary for Morningstar Mill
3. Appendix 3: City of St. Catharines, 2014 Morningstar Mill Operating Budget
4. Appendix 4: Golder and Associates Report

Prepared by:

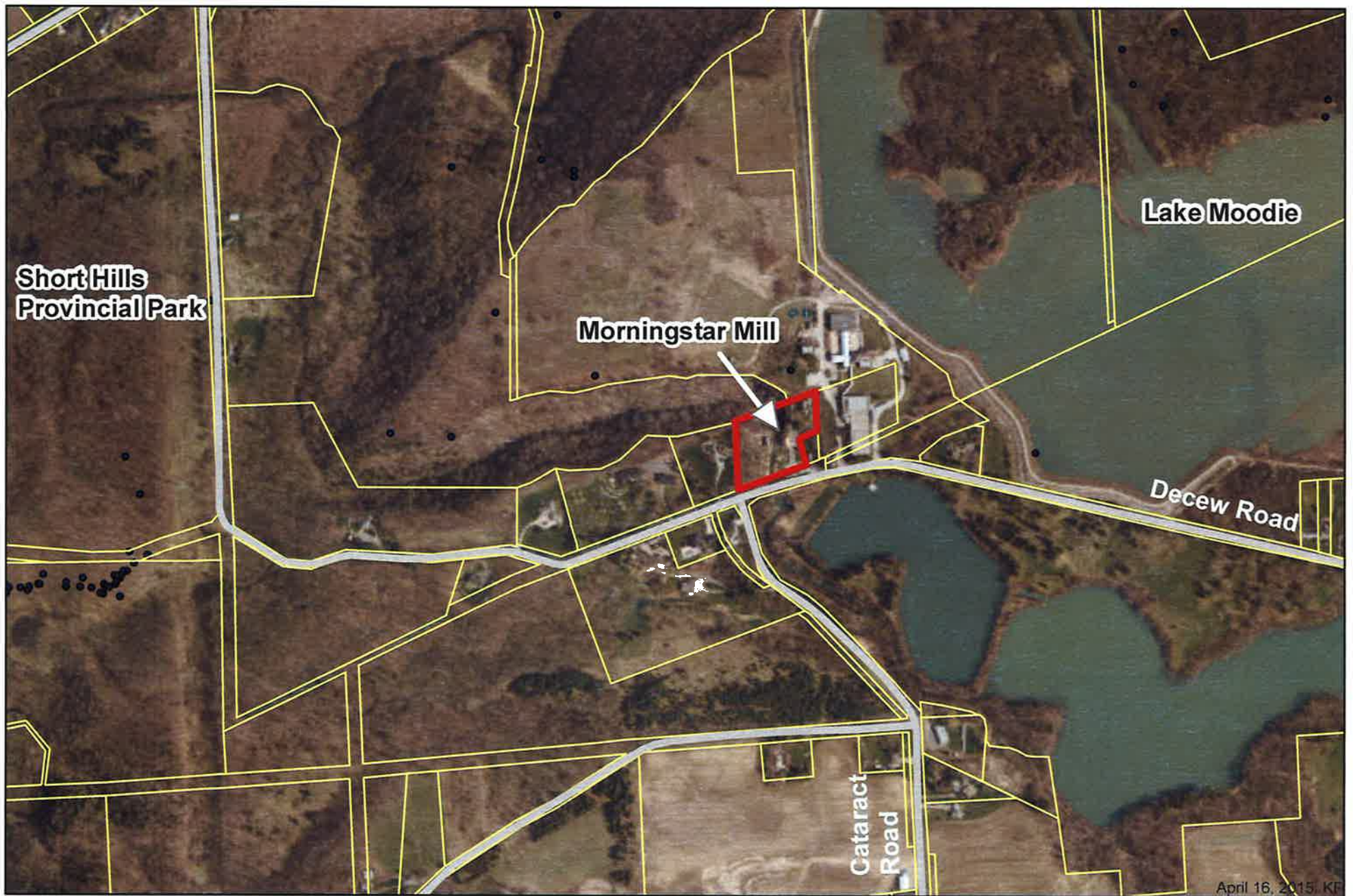


**David Barrick**  
**Director of Operations**

Submitted by:



**Carmen D'Angelo; CAO / Secretary Treasurer**



Morningstar Mill Location



**Legend**





**Project Summary for Morning Star Mill****06-Oct-15**

| <b>Outstanding Unapproved Projects</b>  |  | <b>Estimated Budget</b> |
|---|--|-------------------------|
| Miller's House - Waterproofing and structural repairs                             |  | \$75,000                |
| Miller's House - Replace roof   |  | \$50,000                |
| Miller's House - Roof repairs on porches  |  | \$10,000                |
| Garage - Replace electric heaters and wiring                                      |  | \$5,000                 |
| Regional Barn - Structural repairs  |  | \$55,000                |
| Regional Barn - Repairs to the electrical   |  | \$5,000                 |
| Saw Mill - Replace roof   |  | \$30,000                |
| Grist Mill - Water ponding issue at faucet  |  | \$5,000                 |
| Grist Mill - Gas Service and furnace replacement                                  |  | \$50,000                |
| Grist Mill - Wood repairs to structure and floor **                               |  | \$25,000                |
| Grist Mill - Structural assessment  |  | \$10,000                |
| Dam - Continual Maintenance**   |  | \$5,000                 |
| Dam - Install Fall Arrest **  |  | \$50,000                |
| New Public Washroom for site*   |  | \$400,000               |
| Implement accessibility into new public washroom *                                |  | \$60,000                |
| Implement accessibility for the site(Parking, routes, access to buildings)*       |  | \$150,000               |
| New Water Service   |  | \$150,000               |
| <b>Total:</b>   |  | <b>\$1,135,000</b>      |
| <b>Outstanding Approved Projects</b>  |  |                         |
| Protective Fencing and observation area (design completed, project not completed) |  | \$140,000               |
| Gristmill Repointing and structural repairs (not completed)                       |  | \$300,000               |
| Dam Rehabilitation (not completed, Dam safety review first) **                    |  | \$300,000               |
| Turbine shaft replacement - \$40,000 (not completed)                              |  | \$40,000                |
| <b>Total:</b>   |  | <b>\$780,000</b>        |
| <b>Completed projects to date</b>   |  |                         |
| Fire Alarm and Emergency Lighting in the house and mill - \$85,000 (Complete)     |  | \$85,000                |
| Oil furnace and tank replacement - \$15,000 (Complete)                            |  | \$15,000                |
| Lead removal and Painting of House - \$120,000 (Complete)                         |  | \$120,000               |
| Replacement of bridge – \$300,000 (Complete)                                      |  | \$300,000               |
| Extend Gas service to house - \$20,000 (complete)                                 |  | \$20,000                |
| Gristmill Roof Replacement - \$50,000 (complete)                                  |  | \$50,000                |
| <b>Total:</b>   |  | <b>\$590,000</b>        |

























































































\* Identified as a programming deficiency for the site. The budget would changed based on final site programming

\*\* Budgets will require revision based on the results of the assessments.

## Appendix 3

**Version** Council Approved  
**Year** 2015  
**View** Budget Input by Organization  
**Selection** 752.125 Morningstar Mill

Date: March 11, 2015

|   |  | 2015 Budget                           | 2014<br>Revised<br>Budget | 2014 Actuals   | 2013 Budget   | 2013 Actuals   | Comments      | % to 2014<br>Budget | % to 2014<br>Actual | % to 2013<br>Budget | % to 2013<br>Actual |   |
|---|--|---------------------------------------|---------------------------|----------------|---------------|----------------|---------------|---------------------|---------------------|---------------------|---------------------|---|
|    |    | 752.125.001                           | Salaries/Wages-Regular    | 40,502         | 41,365        | 38,599         | 38,703        | (100.00%)           | (100)               | (100)               | (100)               |    |
|    |    | 752.125.003                           | Salaries/Wages-Extra      |                |               |                |               |                     |                     |                     |                     |    |
|    |    | 752.125.007                           | Holiday/Vacation Pay      |                |               |                |               |                     |                     |                     |                     |    |
|    |    | 752.125.030                           | Pensions                  | 6,105          | 5,828         | 5,726          | 5,217         | (100.00%)           | (100)               | (100)               | (100)               |    |
|    |    | 752.125.031                           | Other Benefits            | 6,858          | 6,413         | 6,595          | 5,830         | (100.00%)           | (100)               | (100)               | (100)               |    |
|    |    | 752.125.032                           | Workers Compensation      | 191            | 155           | 183            | 139           | (100.00%)           | (100)               | (100)               | (100)               |    |
|    |    | 752.125.033                           | Employment Insurance      | 1,105          | 1,031         | 1,014          | 916           | (100.00%)           | (100)               | (100)               | (100)               |    |
|    |    | 752.125.050                           | Rentals                   | 500            |               | 500            |               | (100.00%)           |                     | (100)               |                     |    |
|    |    | 752.125.053                           | Service Contracts         | 3,995          | 3,255         | 3,305          | 3,594         | (100.00%)           | (100)               | (100)               | (100)               |    |
|    |    | 752.125.067                           | Mileage                   |                | 515           |                | 487           |                     | (100)               |                     | (100)               |    |
|    |    | 752.125.102                           | Small Tools and Equipment |                |               |                | 242           |                     |                     |                     | (100)               |    |
|    |    | 752.125.152                           | Gen Bldg Mtce Supplies    | 500            |               | 1,045          | 114           | (100.00%)           |                     | (100)               | (100)               |    |
|    |    | 752.125.162                           | Repairs                   | 7,000          | 11,009        | 7,000          | 8,024         | (100.00%)           | (100)               | (100)               | (100)               |    |
|    |    | 752.125.163                           | Heat,Light,Power,Water    | 7,200          | 6,557         | 7,200          | 5,738         | (100.00%)           | (100)               | (100)               | (100)               |    |
|    |    | 752.125.173                           | Insurance-Bldg,Contents   | 1,000          | 979           | 910            | 953           | (100.00%)           | (100)               | (100)               | (100)               |    |
|  |  | 752.125.180                           | Improvements - Non TCA    |                |               | 5,000          |               |                     |                     | (100)               |                     |  |
|  |  | 752.125.210                           | Portable Toilets          | 2,400          | 2,450         | 2,400          | 2,200         | (100.00%)           | (100)               | (100)               | (100)               |  |
|  |  | 752.125.235                           | Contract-Pest Control     |                | 60            |                |               |                     | (100)               |                     |                     |  |
|  |  | 752.125.307                           | Printing                  |                |               |                |               |                     |                     |                     |                     |  |
|  |  | 752.125.309                           | Advertising & Promotion   |                |               |                | 299           |                     |                     |                     | (100)               |  |
|  |  | 752.125.356                           | Buildings/Improvements    | 20,000         | (1,000)       | 20,000         | 16,580        | (100.00%)           | (100)               | (100)               | (100)               |  |
|  |  | 752.125.380                           | Capitalized Assets        |                | (27,530)      |                |               |                     | (100)               |                     |                     |  |
|  |  | 752.125.382                           | Change in WIP             |                | 27,530        |                | (31,580)      |                     | (100)               |                     | (100)               |  |
|  |  | 752.125.384                           | TCA - Current Year Deprec |                | 25,359        |                | 24,911        |                     | (100)               |                     | (100)               |  |
|  |  | 752.125.389                           | TCA Offset                |                | (25,359)      |                | 6,669         |                     | (100)               |                     | (100)               |  |
|  |  | 752.125.417                           | Study/Consulting Fees     |                |               |                |               |                     |                     |                     |                     |  |
|  |  | 752.125.438                           | Honorarium-Guide          |                |               |                |               |                     |                     |                     |                     |  |
|  |  | 752.125.439                           | Volunteer Projects        | 16,000         | 11,898        | 15,071         | 10,050        | (100.00%)           | (100)               | (100)               | (100)               |  |
|  |  | 752.125.805                           | Donations                 | (5,000)        |               | (5,000)        |               | (100.00%)           |                     | (100)               |                     |  |
|   |  | <b>TOTAL 752.125 Morningstar Mill</b> |                           | <b>108,356</b> | <b>90,514</b> | <b>109,548</b> | <b>99,086</b> | <b>(100.00%)</b>    | <b>(100)</b>        | <b>(100)</b>        | <b>(100)</b>        |  |

September 22, 2015

**NIAGARA PENINSULA CONSERVATION  
AUTHORITY**

**Rock Slope Assessment -  
Beamer Memorial Conservation  
Area, Balls Falls Conservation  
Area and Morningstar Mill**

**Submitted to:**

Niagara Peninsula Conservation Authority  
250 Thorold Road West, 3rd Floor  
Welland, Ontario, L3C 3W2



**Report Number: 1531287**

**Distribution:**

1 e-copy - Niagara Peninsula Conservation  
Authority  
1 e-copy - Golder Associates Ltd.

REPORT





## ROCK SLOPE ASSESSMENT

### 1.0 INTRODUCTION

Golder Associates Ltd. (Golder) was retained by the Niagara Peninsula Conservation Authority (NPCA) to carry out a geotechnical assessment of the rock conditions at three locations along the Niagara Escarpment. The locations included:

- Two scenic lookouts at the Beamer Memorial Conservation Area in Grimsby, Ontario,
- Three scenic lookouts at the Balls Falls Conservation Area in Lincoln, Ontario, and
- The waterfall area at the Morningstar Mill in St. Catharines, Ontario.

A site visit was carried out to visually inspect the three sites noted above. This report summarizes the findings from the visual inspections and provides recommendations for further maintenance or inspection work as required.

The reader is referred to the "Important Information and Limitations of This Report" which follows the text of this report but forms an integral part of this document.

### 2.0 SITE DESCRIPTIONS AND OBSERVATIONS

The visual inspection of the three sites was carried out on June 10<sup>th</sup>, 2015 by Mr. Mike Harris, a geotechnical technician, and Ms. Gabriele Mellies, P.Eng., both from Golder.

#### 2.1 Beamer Memorial Conservation Area

The Beamer Memorial Conservation Area is located at 28 Quarry Road in Grimsby Ontario. The condition of the rock foundations at two lookout areas located along the Niagara Escarpment were identified by the NPCA as a potential concern. The lookouts are approximately 575 m (North Scenic lookout) and 610 m (East Scenic lookout) from the start of the trailhead. It is our understanding that the North Scenic Lookout will be partially or completely reconstructed in the near future due in part to the poor condition of the concrete foundations.

##### 2.1.1 North Scenic Lookout

The North Scenic Lookout consists of an elevated wooden platform with a steel railing and wooden steps on two sides (refer to Plate 1). The platform is founded on a number of circular concrete "sonotube" type foundations resting on bedrock. The concrete foundations were noted to be partly deteriorated or damaged (refer to Plate 1).

The rock underneath the lookout consists of light greyish brown, slightly weathered to fresh, thinly to thickly bedded dolostone (refer to Plate 1). A large overhang was noted at the crest of the rock face, which is approximately 7 m in height and up to approximately 3.5 m deep (measured at the deepest point back from the crest of the rock face). The length of the overhang was approximately 10 m measured along the rock face. The overhang appears to be the result of ongoing weathering and erosion of the lower part of the rock face (most likely ice jacking due to freeze-thaw in the winter months). The overlying cap rock at the crest consists of massive dolostone slabs and blocks that sit on top of thinly layered, very blocky rock layers that has eroded back creating the overhang. It is expected that rock from below the overhang will continue to ravel from the face over time. Some steeply oriented fractures that extend vertically up through the overhang at the back were also noted during the inspection.



## ROCK SLOPE ASSESSMENT

The edge of the lookout deck is approximately 1 m away from the crest face and the concrete foundations are located further 0.5 m back resulting in a distance of 1.5 m between foundations and the face of the overhang. There is a concern that the steeply inclined fractures will act as a release surface and that a part of the overhanging rock may eventually become unstable and fall as blocks of rock ravel and fall from underneath the overhang.

### 2.1.2 East Scenic Lookout

The East Scenic Lookout is of similar construction as the North Scenic Lookout in that it is also constructed of wooden decking supported on circular concrete “sonotube” foundations on bedrock (refer to Plate 2). The lookout deck is situated approximately 2.5 m from the crest of the rock face. However, the concrete foundations are located farther back from the crest of the rock face compared to the North Scenic Lookout resulting in a distance between rock face and foundations of approximately 4.5 m (see Plate 2).

Due to accessibility and dense forest conditions the view of the rock face was obscured by the vegetation and a complete visually inspection of the rock conditions underneath the East Scenic Lookout was not possible. As discussed with the NPCA, Golder will inspect the site again in the fall of 2015 after the leaves are gone.

## 2.2 Balls Falls Conservation Area

The Balls Falls Conservation Area is located at 3292 Sixth Avenue, in Lincoln, Ontario. The falls are located on the Twenty Mile Creek and consist of the Upper Falls and the Lower Falls (refer to Plate 3 and 4).

### 2.2.1 Upper Falls - Left Bank

The lookout area at the left bank of the Upper Falls is enclosed by a 0.9 m high stone and mortar wall towards the edge of the rock face and the waterfall (refer to Plate 3). The distance between the wall and the crest of the rock face ranges from 6.3 m towards the falls to 1.8 m at the downstream end of the lookout area.

The rock conditions underneath the lookout area consist of the dolostone cap rock with an underlying shale layer at the bottom of the rock face. The rock face consists of relatively massive rock layers at the top and medium to thinly layered, very blocky rock below (see Plate 3). The rock face was generally near-vertical; however, locally, some slabs of the cap rock have been undermined due to weathering of the rock face (most likely freeze-thaw actions during winter) and are now forming small overhangs, which are generally less than a metre deep (refer to Plate 3). These overhangs are currently not undermining the lookout area and, therefore, do not pose a concern for the safety of the lookout. Some vegetation was noted at the crest of the rock face; only very sparse vegetation was observed on the face.

### 2.2.2 Upper Falls - Right Bank

The right bank of the Upper Falls comprises approximately 4 m of steeply sloping overburden and a near-vertical rock face below (refer to Plate 3). The overburden slope is densely overgrown with trees and bushes. The rock face consists of massive layers of dolostone at the top followed by underlying thinly layered, very blocky shale and limestone layers. An approximately 2.5 m thick dolostone overhang was noted at the crest of the rock face, which is approximately 4 m in depth (measured back from the rock face). The underlying rock layers are near-vertical with no significant undercutting. Some vegetation was noted on the rock face.

The massive dolostone cap rock is blocky with open fractures and joints created by roots from trees growing at the top of the slope and out of the rock face. Significant seepage was noted from the right bank rock face next to





## ROCK SLOPE ASSESSMENT

the falls between the dolostone and shale contact. With time this water will continually erode the shale and limestone layers underneath the right bank dolostone creating overhangs and further increasing the existing overhang.

A fence line was noted on the overburden slope that is located in relatively close proximity to the crest of the rock face. It is our understanding that there is a trail on the right bank slope with a chain link fence installed to prevent the public from falling from the top of the slope.

### 2.2.3 Lower Falls

Along the right bank of the Lower Falls underneath the scenic lookout a near vertical rock face of approximately 13 m height was noted, which consists of blocky layers of various thickness comprising dolostone, limestone, sandstone and shale (refer to Plate 4). Many small overhangs and ledges were noted on the entire face that were formed due to differential weathering of the various rock layers; however, these overhangs and ledges appear to be generally less than 0.5 m in depth. The shale layer at the bottom of the rock face is approximately 14 m in height. A talus slope consisting of small rock debris that has ravelled from the rock face has formed at the toe of the face below and extends down to the river bank. Vegetation is sparse on the rock face and appears to grow mostly along the crest of the slope. The rock conditions along the left bank of the Lower Falls are generally similar to the conditions on the right bank.

A stone wall is located along the scenic lookout area towards the crest of the rock face that has been constructed approximately 1.2 m back from the crest. The ledge between the wall and the crest of the rock face is overgrown with small trees, grass and bushes. Considering the small overhangs observed on the rock face, it appears that these are currently not undermining the stone wall. The wall is approximately 28 m long with a height of approximately 1.1 m. Several cracks were noted in the mortar (refer to Plate 4) and the wall appears to be leaning slightly towards the crest of the slope. In the area of the most prominent crack, a small water runoff area was noted on the ledge between the wall and the crest of the rock face and the wall appears to be slightly undermined at this location.

## 2.3 Morningstar Mill

The Morningstar Mill is located at 2714 Decew Road in St. Catharines, Ontario. The Morningstar Mill features a working grist mill built in 1872, a turbine shed, a sawmill, a blacksmith and carpentry shop and the historic home of the Morningstar family. A waterfall, the Decew Fall, is located downstream of the mill site where the water of the falls flows into a ravine (refer to Plate 5).

The site was briefly visited by Golder in May 2015 while the water over the Decew Falls was shut down and pictures were taken of the rock face behind the falls. A second visit was carried out in June 2015 at which time the water flow over the falls had resumed.

The rock faces at the Decew Falls consist of thickly to thinly layered dolostone with underlying thinly layered shale, which have eroded over the years to create a bowl shaped cataract that reaches up to a height of approximately 22 m (refer to Plate 6). The maximum depth of erosion was measured to be 7 m (distance measured from the rock face at the crest of the waterfall area to the deepest part in the rock face below the falls). Significant overhangs were noted in the dolostone along the crest of the rock face (refer to Plate 6). The overhangs consist of thick to thin layers of dolostone that have formed due to differential weathering and erosion of the underlying shale which has undermined the overlying dolostone. The crest of the rock faces is vegetated



## ROCK SLOPE ASSESSMENT

with trees and bushes; some mostly small vegetation was noted on the rock faces. Some undercutting was also noted on the rock faces at the left bank above the falls downstream of the mill wheel (refer to Plate 5).

Weathering and erosion of the faces are caused most likely by the flowing water and freeze-thaw actions during the winter months. The ongoing weathering of the rock faces and in particular the differential weathering of the dolostone and the underlying weaker shale will continue to undermine the overlaying rock layers and create overhangs which will eventually fail. However, all buildings at the Morningstar Mill site are currently located well back from the rock faces and the overhangs are presently no cause for concern in terms of the stability of the structures above.

At the bottom of the rock faces a pool has formed below the falls that is encircled by talus slopes consisting of mostly medium to small rock debris which has ravelled from the rock faces above (refer to Plate 6). The large overhangs at the crest of the rock faces are overhanging the talus slopes, extending towards the pool area. Some small vegetation was noted on the left bank talus slopes; only sparse vegetation was noted on the right bank talus slopes. Along the right bank of the falls area, signs of recent rockfalls from the shale and dolostone overhangs were noted along the toe of the rock face and on the talus slopes. Rock debris falling from the rock faces is prone to slide down the talus slopes towards the pool. It is our understanding that the pool is used by the public for swimming. It has to be noted that there is a high risk for rockfalls from the shale layers and in particular from the overhangs at the top of the rock faces. Falling debris will not only reach the area underneath the overhangs but also the pool area itself. It is recommended that public access to the pool and in particular to the areas underneath the overhangs be prevented.

### 3.0 SUMMARY OF ROCK CONDITION ASSESSMENT AND RECOMMENDATIONS

The following summarizes Golder's findings and recommendations for the three inspected sites. Since there is no historic information for the three sites available, the rock conditions observed during the current inspection cannot be compared to previously observed conditions. Hence, recommendations for regular inspections are based on engineering judgement and typical inspection frequencies. If future inspections clarify the rate of change in the rock conditions (considering weathering rates of rock, etc.), the inspection frequencies should be adjusted accordingly. It is recommended that visual inspections be carried out in the spring or in the fall (before the leaves come out or after the leaves are fallen).

#### 3.1 Beamer Memorial Conservation Area

##### 3.1.1 North Scenic Lookout

An overhang was noted below the North Scenic Lookout. The rock below the overhang and the overhang itself will continue to weather and deteriorate over time and at some time in the future, the overhanging rock will likely fall from the face. Since we understand that some type of repair/reconstruction of the observation deck foundations and possibly of the wooden decking will be carried out in the near future (i.e. next one to two years) we recommend that new concrete foundations be constructed to replace the existing foundations and that these be constructed a minimum of 1.5 m to 2 m back from the existing foundations (i.e. 3 m to 3.5 m back from the crest of the rock face).



## ROCK SLOPE ASSESSMENT

### 3.1.2 East Scenic Lookout

No immediate concerns were noted for the East Scenic Lookout; however, the rock face below the lookout could not be inspected adequately given the amount of vegetation and tree cover at the time of the inspection. It is recommended that the rock face be inspected in the late fall or early winter of this year after the leaves have fallen.

## 3.2 Balls Falls Conservation Area

### 3.2.1 Upper Falls - Left Bank

There are of no immediate concerns regarding the integrity of the left bank scenic lookout area at the Upper Falls. The rock conditions observed at the rock face underlying the lookout area suggest that in the near future the lookout area including the enclosing stone wall won't be compromised by any instability in the rock below. Regular geotechnical inspections of the lookout area should be carried out every 3 to 5 years to monitor the ongoing weathering of the rock face.

### 3.2.2 Upper Falls – Right Bank

The relatively close proximity of the chain link fence to the crest of the rock face along the right bank at the Upper Falls poses some concern. It is recommended that the chain link fence be moved back from the crest of the rock face to a safe distance if the trail above the rock face is used as a lookout for the Upper Falls. Alternatively the trail could be closed for the public. Further investigation is required in this area using industrial rope access methods to assess the rock face and to determine the required set-back distance for the fence.

### 3.2.3 Lower Falls

No immediate areas of concern were noted during the inspection with regards to the rock conditions below the Lower Falls scenic lookout area. However, cracks were noted in the stone retaining wall that is located at the crest of the rock face. We recommend that with regard to public safety the structural integrity of the wall be inspected by a structural engineer. Instrumentation (for example crack meters or survey pins) could also be installed across the cracks

Regular geotechnical inspections of the lookout area should be carried out at a frequency of every 3 to 5 years to monitor the ongoing weathering of the rock faces.

## 3.3 Morningstar Mill

Significant undermining of the rock faces and large overhangs at the crest were noted below the falls at the Morningstar Mill site and these overhangs will eventually fail due to ongoing weathering and erosion of the rock. However, no immediate concerns were identified during the inspection that could compromise the stability of the foundations of the structures located adjacent to the falls. However, in order to identify hazards that might occur due to the ongoing weathering of the rock faces, it is recommended that regular inspections of the area should be carried out every 3 to 5 years to monitor the regression of the falls.

Rockfall hazards were identified for the area below the falls including the right and left bank of the falls area as well as the pool that has formed below the falls. Rockfalls from the underlying shale as well as from the large overhangs at the top of the rock faces pose a high risk for the public using the area underneath the overhangs and around the pool as well as the pool itself. It is recommended that public access to the area below the falls be



## ROCK SLOPE ASSESSMENT

prevented and that the risk of rockfalls in the ravine below the falls be indicated to the public (for example signage).

### 4.0 CLOSING

We trust that the recommendations in this report address your concerns. Please contact us if you have any questions regarding the information provided above. If the rock conditions change significantly at any of the sites in the future please contact the authors.

Sincerely,

**GOLDER ASSOCIATES LTD.**

Mike Harris  
Geotechnical Technician

Gabriele Mellies, P.Eng.  
Rock Mechanics Engineer, Project Manager



Mark Telesnicki, P.Eng.  
Principal

MH/MJT/GM/gm

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Rock faces next to the water fall area;  
Morningstar Mill buildings in the back



Some undercutting observed on the rock face (left bank  
downstream of the mill wheel)



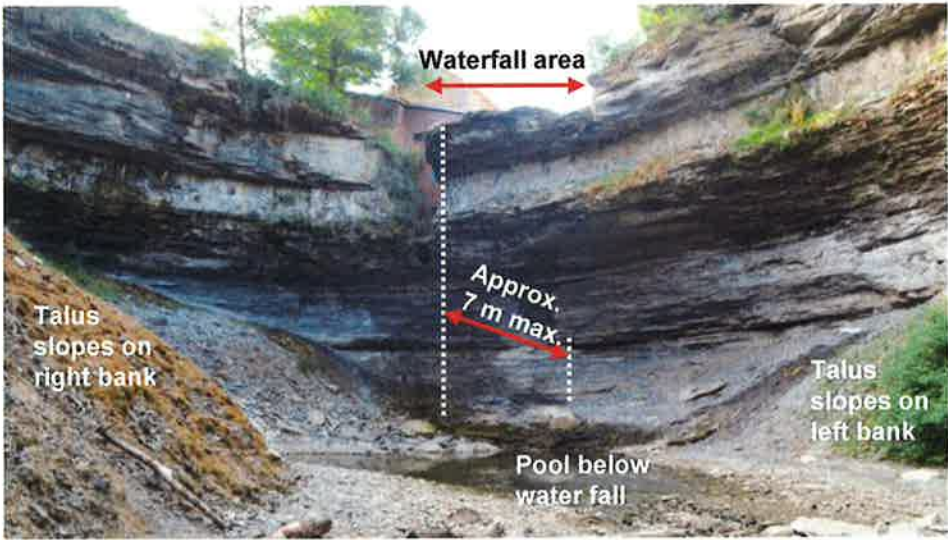
Top of waterfall: view from the right bank towards left bank;  
mill building in safe distance from the rock face; access to  
face prevented by fence



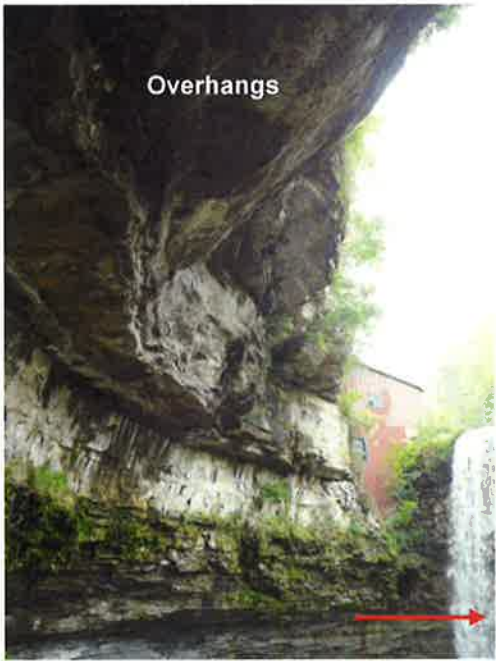
Top of water fall: view from the left bank towards right  
bank; access to face prevented by fence

|  |               |
|--|---------------|
| Morningstar Mill<br>Decew Falls  | Plate 5       |
|  | 1531287       |
|  | Sept 18, 2015 |





Rock face below the water fall with massive dolostone at the top and underlying shale (during water shut down in May 2015); large overhangs noted at the crest of the rock faces; large talus slopes consisting of small rock debris have formed around the pool below the falls



Rock face with large overhangs along the right bank below the falls



Rock face along left bank below the falls with overhangs at the crest



Pool formed below the falls, encircled by talus slopes



Details of the overhangs along the left bank of the ravine

|  |               |
|--|---------------|
| Morningstar Mill<br>Decew Falls  | Plate 6       |
|  | 1531287       |
|  | Sept 18, 2015 |

**Report To:** Board of Directors

**Subject:** Trail Maintenance Agreement with Glanbrook Conservation Committee

**Report No:** 111-15

**Date:** October 21, 2015

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**RECOMMENDATION:**

That the NPCA Board **AUTHORIZE** staff to execute the attached 3-year Trail Maintenance Agreement (Appendix 1) with the Glanbrook Conservation Committee (GCC) regarding the Tyneside Trail at Binbrook Conservation Area.

**PURPOSE:**

For the NPCA Board to consider entering into a formal agreement with the Glanbrook Conservation Committee for the maintenance of Tyneside Trail at Binbrook.

This report aligns with the 2014-2017 Strategic Plan Alignment under 'Effective Communication with Stakeholders & Public,' specifically, 'Identify potential new partners, funders and allies. Encourage commitment and involvement.'

**BACKGROUND:**

The Glanbrook Conservation Committee is a group of passionate and knowledgeable local community volunteers that was established in 1990. Its primary mandate is to work to improve the habitat for wildlife in what was previously Glanbrook Township; now part of the City of Hamilton. The GCC includes naturalists, environmentalists, bird watchers, hikers, canoeists, as well as fishermen and hunters.

The majority of GCC activities occur at Binbrook Conservation Area in cooperation with the NPCA staff. From helping to establish and maintain a number of hiking trails to a large aquatics planting program and tree planting program, the GCC has improved the natural habitat for both wildlife and visitors in and around the shores of Lake Niapenco.

Some of these projects include:

- Establishment, maintenance and monitoring of Bluebird trails at the Binbrook CA

- Hyslop Bay Wetland Restoration project that involved the construction of a carp barrier, planting of aquatic plants, tree planting in the fields adjacent to the bay, construction of nesting structures (Ontario Stewardship Project No. 805)
- Building and supply of Nesting box kits for schools, Scout, Guide and other groups (over 900 kits supplied since 1991).
- Aquatics nursery program where they grew seed and planted over 30,000 wetland plant species.
- Development and maintenance of walking trails in different areas of the Conservation Area with construction of boardwalks and benches for use on the various trails.
- Year-round maintenance of the Tyneside parking area at the west end of the conservation area.
- Yearly tree planting program.
- Ongoing shoreline protection projects that have included anchoring of stumps, brush and logs to vulnerable shoreline areas
- Placement of gabion stone over a 8m x 105m area on the main island on Lake Niapenco to create a pickerel spawning bed and protected the island from wave erosion.
- Fish structure program
- Ongoing year-round pick-up of litter over the entire conservation area.

Upon NPCA staff and members of the GCC meeting July 21, 2015, several items were discussed, including formalizing an Agreement for the maintenance of Tyneside Trail. Further, a trail walk/inspection was held with NPCA and GCC on August 11, 2015 (Appendix 2), where it was determined that formalized assistance from GCC would be beneficial to the NPCA.

## **DISCUSSION:**

The NPCA is grateful for the contributions made by the GCC over the years. This Agreement will be the first of its kind with the GCC although is not unprecedented as the NPCA has had similar Agreements in the past and currently maintains a similar agreement with the Fort Erie Conservation Club at Stevensville CA.

This proposed Agreement will further open communication between the GCC and NPCA staff. Most important, it outlines some rules and etiquette that needs to be



addressed in light of the changes established by the Ministry of Labour, WSIB, and the Ontario Occupational Health and Safety Act that had never been addressed previously. This proposed Agreement gives staff and volunteers a clearer direction and will help build a frame work for other partnerships at Binbrook Conservation Area and other parks as the NPCA moves forward.

#### **FINANCIAL IMPLICATIONS:**

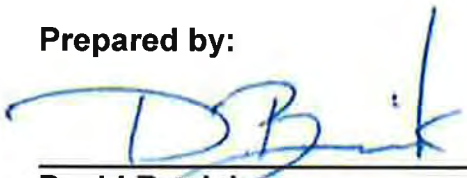
The proposed Agreement recommends to, *"Reimburse the Glanbrook Conservation Committee for supplies and materials up to a maximum of \$2000 per annum."* These materials and supplies are all in relation to the improvement of the NPCA owned trail and any additional materials/supplies will be returned to the park with the completion of projects. Further, NPCA staff recommends utilizing the funds received from the Camp Marydale Agreement for boat launch access (\$3000/2015, \$4000/2016 and \$5000/2017) to support this agreement.

The Board has the option not to proceed with this proposed agreement and/or make any revisions.

#### **RELATED REPORTS AND APPENDICES:**

1. Appendix 1: DRAFT Tyneside Trail Maintenance Agreement
2. Appendix 2: Tyneside Trail walk (with notes/photos)
3. Appendix 3: Tyneside Trail map

**Prepared by:**

  
\_\_\_\_\_  
**David Barrick**  
**Director of Operations**

**Submitted by:**

  
\_\_\_\_\_  
**Carmen D'Angelo**  
**Chief Administrative Officer**  
**Secretary Treasurer**

*This report was prepared with consultative input from: Gregg Furtney, Supervisor of Operations.*

# DRAFT

Appendix 1

## THE NIAGARA PENINSULA CONSERVATION AUTHORITY THE GLANBROOK CONSERVATION COMMITTEE

January 1st, 2016 – December 31, 2018

For

### Binbrook Conservation Area (TYNESIDE TRAIL) Maintenance Agreement

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#### Parties to the Agreement:

Niagara Peninsula Conservation Authority (NPCA)

And

The Glanbrook Conservation Committee (GCC)

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#### PURPOSE

The purpose of this Agreement is to describe the framework that will be undertaken by the Glanbrook Conservation Committee in cooperation with the Niagara Peninsula Conservation Authority.

#### BACKGROUND

The Glanbrook Conservation Committee is a local conservation group committed to providing safe and enjoyable visitor experience at the Binbrook Conservation Area. The Committee is also involved in many projects which improve wildlife habitat throughout the property.

The committee members have been assisting with the maintenance of the Tyneside Trail for a number of years and are still interested in its continuous improvement. Recognizing this, the Conservation Authority proposed to enter into an agreement whereby the committee contracts to undertake maintenance activities at Binbrook Conservation Area, specific to the Tyneside Trail. This allows the NPCA to clearly identify their maintenance needs and to compensate the committee for their work.

#### OBJECTIVES

The Glanbrook Conservation Committee will work with the NPCA to maintain the Tyneside Trail. The Club will also monitor the Tyneside Trail and advise the NPCA when maintenance or repair is required.

#### FUNDRAISING

The NPCA will allow the Glanbrook Conservation Committee to promote and conduct fundraising activity on NPCA property. All fundraising activities must be approved by the NPCA

prior to the activity taking place. The NPCA reserves the right to approve or reject all fundraising activity performed by the Glanbrook Conservation Committee.

### TRAINING

All active members of the Glanbrook Conservation Committee must complete all prescribed Health and Safety training by the NPCA prior to performing any work on NPCA property. The training will include, but is not limited to the following;

- Annual successful completion of WHMIS
- Successful completion of Ministry of Labour Worker Awareness

The NPCA will provide all training modules and material to the GCC. The GCC will be responsible for administering all aforementioned training and remit all necessary documentation to the NPCA as needed.

#### **The Glanbrook Conservation Committee commits to:**

- i) Maintain the Tyneside Trail in a safe and suitable condition,
- ii) Advise the Conservation Authority if any of the Tyneside Trail structures or facilities have been damaged or need repair.
- iii) Allow for public access and enjoyment of the Tyneside Trail.

#### **The Niagara Peninsula Conservation Authority commits to:**

- i. Reimburse the Glanbrook Conservation Committee for supplies and materials up to a maximum of \$2000 per annum.
- ii. Respond to the Committee as to the approval or rejection of GCC purchases

### IMPLEMENTATION

- Each organization will assign project leads as appropriate, and schedule a start-up meeting
- The GCC and the NPCA representatives will meet at the start of the contract period and annually thereafter to discuss progress
- The GCC shall purchase materials or supplies using its own funds and submit receipts to the NPCA for re-imbursement. The NPCA reserves the right to approve or reject any/all submitted receipts by the GCC.
- GCC will forward to the NPCA, on an annual basis, a financial report pertaining to how the funds are dispersed.
- Both the NPCA and the GCC shall agree to the aforementioned terms prior to any work being performed on NPCA property.
- Either party may withdraw from this Agreement providing 90 days written notice.

### CONTACTS:

Glanbrook Conservation Committee  
Brett Harrington - Treasurer

Niagara Peninsula Conservation Authority  
David Barrick – Director of Operations

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**Name**

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**Name**

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**Date**

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**Date**

Glanbrook Conservation Committee  
Andy Fevez – Chair

Niagara Peninsula Conservation Authority  
Carmen D'Angelo - CAO/Secretary Treasurer

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**Name**

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**Name**

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**Date**

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**Date**

# Tyneside Trail Walk

August 11, 2015

NPCA, GCC

## Appendix 2

| No. | Item                                       | Description  | Image   |
|-----|--|--|---|
| 1   | <b>*Request* Gate at entrance to trail</b> | <ul style="list-style-type: none"> <li>- A new gate to be installed</li> <li>- Serves as a deterrent to ATVs and dirt bikes accessing the trail</li> <li>- Shrubs to be planted around the trail head</li> <li>- New sign at head of trail stating that the trail was built and is maintained by the Glanbrook Conservation Committee</li> </ul> |     |
| 2   | <b>Drain pipes under trail</b>             | <ul style="list-style-type: none"> <li>- Drain pipe grates must be cleaned out regularly in spring and fall seasons</li> </ul>   |   |

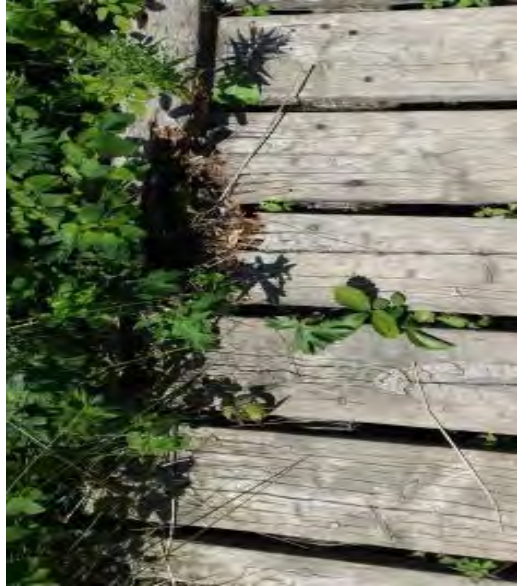



## Tyneside Trail Walk

August 11, 2015

NPCA, GCC

## Appendix 2



|   |  |   |  |
|---|--|---|--|
| 3 | Boardwalk repair   | <ul style="list-style-type: none"><li>- 2 boards or more to be replaced</li></ul>                           |   |
| 4 | <b>*Request* Bench at fork of trail at Observation Tower</b> | <ul style="list-style-type: none"><li>- GCC would like the addition of one bench to this location</li></ul> |  |

# Tyneside Trail Walk

August 11, 2015

NPCA, GCC

## Appendix 2

|   |  |  |  |   |
|---|--|--|--|---|
| 5 | <b>*Request* Fishing dock below observation tower, bench</b> | <ul style="list-style-type: none"> <li>- New fishing platform/dock to prevent erosion in this area (4' x 4')</li> <li>- New bench situated at base of observation tower</li> </ul> |   |  |
| 6 | <b>*Request* Marsh platform</b>                              | <ul style="list-style-type: none"> <li>- Construction of new viewing platform 2' into marsh area for spring bird activity</li> </ul>   |  |   |





## Tyneside Trail Walk



August 11, 2015

NPCA, GCC

## Appendix 2

|   |   |  |  |
|---|---|--|--|
| 7 | <b>*Request* Switchback<br/>addition to trail</b> | <ul style="list-style-type: none"><li>- Addition of a second switchback section of the trail (pine groves)</li></ul> |   |
| 8 | <b>Boardwalk Repair</b>                           | <ul style="list-style-type: none"><li>- Replace boards along the boardwalk bridge</li></ul>                          |  |



|    |   |   |  |
|----|---|---|--|
| 9  | Marydale's "North Gate"                           | <ul style="list-style-type: none"> <li>- Farm gate, stonework stairs and path down from Marydale property to trail constructed without permission/consultation</li> </ul> |   |
| 10 | *Request* Boardwalk over low ground and marshland | <ul style="list-style-type: none"> <li>- 250 ft floating boardwalk on low-lying section of trail in marsh land</li> </ul>   |  |

# Tyneside Trail Walk

August 11, 2015

NPCA, GCC

## Appendix 2

|    |   |   |  |
|----|---|---|--|
| 11 | <b>*Request* Fishing Platform and Bench</b> | <ul style="list-style-type: none"> <li>- New fishing platform and bench to be built at the lake access point on path off of the trail</li> <li>- Site is heavily used with evidence of campfires, vandalism to benches</li> </ul> |    |
| 12 | <b>Wood removal</b>                         | <ul style="list-style-type: none"> <li>- The removal of wood and limbs along the trail. (Teepees were built using natural material along the trail, creating risk to users.)</li> </ul>   |    |





# Tyneside Trail Walk

August 11, 2015

NPCA, GCC

# Appendix 2

|    |   |  |  |
|----|---|--|--|
| 13 | <b>*Request* Bench at low point in trail</b>                    | <ul style="list-style-type: none"> <li>- New bench to be installed along trail, nearby to Marydale property line. Firewood must also be removed from this area.</li> </ul>   |   |
| 14 | <b>Wood and natural material removed from trail by Marydale</b> | <ul style="list-style-type: none"> <li>- Wood and other natural material was seen collected and gathered as firewood on Marydale property close to fence line.</li> <li>- Much garbage and litter left on trail in this area.</li> <li>- NPCA fence appears to have been tampered with.</li> <li>- Caution tape left along trail by Marydale.</li> </ul> |  |





## Tyneside Trail Walk

August 11, 2015

NPCA, GCC

## Appendix 2

|    |  |  |  |
|----|--|--|--|
| 15 | Damaged NPCA fence                               | <ul style="list-style-type: none"> <li>- NPCA fence appears to be damaged and tampered with in numerous places along trail.</li> </ul> |   |
| 16 | *Request* Shrubs to separate trail from Marydale | <ul style="list-style-type: none"> <li>- The planting of shrubbery to divide the trail from Marydale's lake access point.</li> </ul>   |  |

# Tyneside Trail Walk

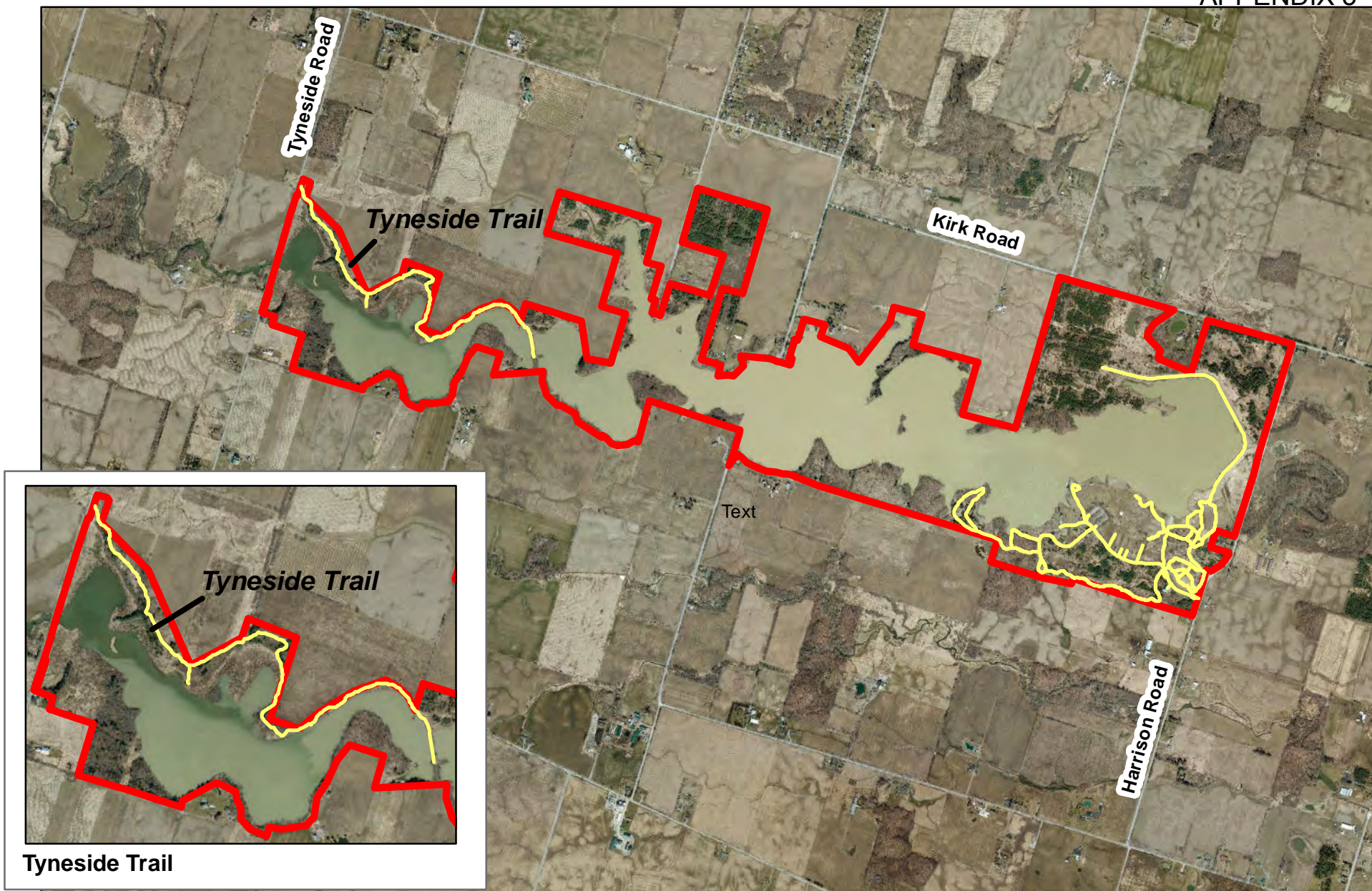
August 11, 2015

NPCA, GCC

# Appendix 2

|    |   |   |  |
|----|---|---|--|
| 17 | <b>Marydale lake access trail extension</b>                         | <ul style="list-style-type: none"> <li>- Marydale has extended their lake access trail so that it merges with the Tyneside trail.</li> <li>- Marydale has cut grass and a natural divider/buffer between the two properties without permission.</li> <li>- Marydale uses vehicles on this section of the Tyneside trail.</li> </ul> |      |
| 18 | <b>Cutting of pine limbs and creation of camp site on the trail</b> | <ul style="list-style-type: none"> <li>- Pine trees in grove along Tyneside trail have been extensively limbed, with brush left alongside the trail.</li> <li>- The creation of a fire-ring and what appears to be a camp site has been set up among the pines.</li> </ul>  |   |





## Binbrook Conservation Area- Tyneside Trail Location



### Legend



Conservation Area Boundary  
Airphoto 2010



NPCA Trails

0 0.5 1 2 Kilometers



October 2015: KF

**Report To: Board of Directors**

**Subject: Niagara River (RAP) Impairment Re-designation Process**

**Report No: 112-15**

**Date: October 21, 2015**

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**RECOMMENDATION:**

That the NPCA Board authorize staff to hire a consultant, in accordance with the NPCA Consultant Selection policies, to produce guidance documents (public documents) for the Benthos & Eutrophication Beneficial Use Impairment Technical Assessments.

**PURPOSE:**

The Niagara Peninsula Conservation Authority requires a review of the Niagara River Remedial Action Plan Technical Assessments for the Degradation of Benthos and the Eutrophication or Undesirable Algae Beneficial Use Impairments (BUI). The conclusion of both these assessments recommends a re-designation of the Beneficial Use Impairment (BUI) status from “impaired” to “unimpaired”. In order to fulfill the re-designation process, stakeholder and public review of the assessments is required. Guidance (public friendly) documents of each technical assessment are required to assist with the facilitation of this process.

The purpose of the project is to have an independent third party consultant with experience working with Remedial Action Plan processes and requirements, develop a plain language, user-friendly document for the public that highlights the key findings and results of the technical assessments for the Degradation of Benthos and the Eutrophication or Undesirable Algae

**BACKGROUND:**

The Great Lakes Water Quality Agreement was first signed in 1972 between Canada and the U.S. in order to restore and maintain the overall integrity of the Great Lakes Basin ecosystem. In 1987, an amendment to the Agreement called for the development and implementation of Remedial Action Plans (RAPs) to restore ecosystem health at 43 identified Areas of Concern (AOCs) located within the Great Lakes Basin. The Niagara River was designated as one of the 43 AOCs, and thus required a Remedial Action Plan. The Niagara River received this designation owing to its degraded water quality, which limits the river’s ability to provide beneficial uses to both humans and wildlife. Examples of beneficial uses include recreational uses such as swimming at local beaches, and ecological uses such as fish and wildlife habitat.

The purpose of the Niagara River RAP is to identify major water quality concerns and take actions to resolve them. A RAP is developed in the following three stages:

- Stage 1 identifies and assesses use impairments;



- Stage 2 identifies proposed remedial actions and their method of implementation; and
- Stage 3 documents evidence that uses have been restored and communicate these results through extensive public engagement.

Once Stages 1 through 3 have been completed and the issues identified in the RAP have been addressed, the Niagara River AOC will be considered remediated or “delisted”. The Niagara River RAP is currently in the third and final stage of the RAP process, with a delisting goal of 2020.

The lead government agencies guiding the development of the Niagara River RAP in Ontario are Environment Canada and the Ontario Ministry of the Environment and Climate Change (MOECC). On April 14, 1999, the NPCA assumed the role of Coordinator for the Niagara River Remedial Action Plan on behalf of the Province of Ontario and the Federal Government. The NPCA’s role as coordinator is that of providing project management, secretariat support, and coordinating stakeholder involvement and completing remedial actions for the Niagara River AOC.

### **PROJECT DELIVERABLES:**

The guidance documents are to communicate the technical information in an interesting and informative manner for a wide-ranging public audience. They will support and promote dialogue on the subject matter and invite the audience to express their views on the information. The documents will consider accessibility requirements and provide printed material in a suitable format so that all members of the public can access the information.

This will include:

- 1) A guidance document summarizing the findings for each BUI assessment (max. 12 pages).
- 2) A short briefing document for each BUI assessment (max. 2 pages).

The NPCA Niagara River Remedial Action Plan (RAP) Project Manager, will manage the project in consultation with the RAP Steering Committee consisting of representation from the Ministry of the Environment and Climate Change and Environment Canada. Once the consultant is hired, the project is required to be completed by March 31<sup>st</sup>, 2015 as per the current RAP Coordination client services agreements between the NPCA, the province and the federal government.

### **FINANCIAL IMPLICATIONS:**

The upset limit for this work is \$25,000. This project is a deliverable as set out in the 2015/16 Client Services Agreement and Work Plan for RAP Coordination and Project Management and is being fully funded through the 2015/16 RAP budget provided by Environment Canada and the Ministry of Environment and Climate Change.



**RELATED REPORTS AND APPENDICES:**

1. Request for Proposal – Benthos & Eutrophication Beneficial Use Impairment Technical Assessment Guidance Documents

**Prepared by:**



Jocelyn Baker  
Project Manager Niagara River RAP

**Reviewed by:**



Peter Graham, P. Eng.  
Director, Watershed Management

**Submitted by:**



Carmen D'Angelo  
Chief Administrative Officer  
Secretary Treasurer

*This report was prepared by Jocelyn Baker, Project Manager, Niagara River RAP and reviewed by Peter Graham, P.Eng. – Director, Watershed Management.*

## **Benthos & Eutrophication Beneficial Use Impairment Assessment Guidance Documents - Request for Proposal**

### **TERMS OF REFERENCE**

#### **INTRODUCTION**

The Niagara Peninsula Conservation Authority is issuing this Request for Proposal to undertake a review of the Niagara River Remedial Action Plan Beneficial Use Impairment Assessments for the Degradation of Benthos and the Eutrophication or Undesirable Algae. The conclusion of both these assessments recommends a re-designation of the Beneficial Use Impairment (BUI) status. In order to achieve the re-designation process, stakeholder and public review of the assessments is required. Guidance documents of each assessment are required to assist with the facilitation of this process.

#### **BACKGROUND- Benthos Assessment**

As a result of historical pollution, there are a number of environmentally degraded spots around the Great Lakes that are designated Areas of Concern (AOC). This term is used to identify those locations where water quality has been degraded to the point that use and enjoyment of the area are impaired. In 1987, the governments of Canada and the United States identified 43 Areas of Concern.

The Niagara River is one of the 43 AOCs that were identified. The AOC designation applies to both sides of the Niagara River; however separate RAPs have been developed in Ontario and New York State. The Niagara River (Ontario) AOC includes the Welland River watershed and those tributaries that flow directly into the upper Niagara River.

RAPs proceed through three stages:

- **Stage 1:** Assessment of the severity and identification of the underlying causes of environmental degradation that are the basis for the location being designated an AOC;
- **Stage 2:** Development and implementation of remedial actions to restore, protect and monitor environmental quality and beneficial uses; and
- **Stage 3:** Confirmation, through monitoring, that the issues identified in Stage 1 have been addressed successfully through the remedial actions described in Stage 2. This final stage results in the “delisting” of the AOC.

In 1993, the Niagara River (Ontario) AOC Remedial Action Plan (RAP) Stage 1 report designated the Degradation of Benthos BUI as “Impaired” and provided scientific evidence in this report and the Stage 1 Update report (1995) to support this designation. The RAP Stage 2 report (1995) and subsequent Stage 2 Update report (2009) presented recommended actions and revised delisting criteria (performance targets) for addressing and assessing this BUI. Since then, substantial progress in addressing the delisting criteria has been achieved. Examples of this progress include the assessment of 14 potentially contaminated sites in the AOC; the Welland River Full-Scale Cleanup Project (1995) and follow-up monitoring results; and, the development and implementation of the Administrative Controls Protocol for Monitored Natural Recovery of contaminated sediments at Lyons Creek East.

A Beneficial Use Impairment assessment was carried out by Golder Associates. Thirteen of the 14 historically identified sites were assessed against the new delisting criteria (see Stage2 report) to ensure that they have been achieved and that all relevant RAP management actions have been taken. In conclusion, the following was determined:

1. The *Degradation of Benthos* BUI is “Not Impaired” for 11 of the 13 sites.
2. The *Degradation of Benthos* BUI is “Not Impaired” at Lyons Creek East (site 12) provided Administrative Controls are implemented at the site so that the sediments are not disturbed. (An Administrative Controls Protocol was signed by the participating agencies in 2011 and is being implemented. The Niagara Peninsula Conservation Authority is the lead coordinating agency.
3. The *Degradation of Benthos* BUI is “Not Impaired” at Lyons Creek West (Site 13). Transport Canada has determined that natural attenuation/recovery is the preferred remedial approach. (Transport Canada owns the majority of the contaminated property and is the agency responsible for developing a sediment management strategy for the site).
4. Benthic communities in the area of the Welland River Atlas Reefs are re-established at levels similar to the remainder of the river and, therefore, are not impaired (Site 14).

### **BACKGROUND- Eutrophication Assessment**

The 1993 RAP Stage 1 report described the environmental conditions in the AOC whereby the Eutrophication BUI designation was split to take into consideration both the Welland River (the largest tributary to the Niagara River) and the Niagara River itself. For the Eutrophication component of the BUI, the Niagara River was designated as “Not Impaired” and the Welland River as “Impaired”; for Undesirable Algae, the AOC was designated as “Not Impaired”. During the Stage 2 review (2004 – 2006) however; the designation for Undesirable Algae was changed to “Impaired” based on anecdotal evidence from the Welland River, and thereby designating the entire BUI as “Impaired” for the AOC.

Many actions have been taken within the Welland River watershed to reduce nutrient inputs. Additionally, the Welland River Eutrophication Study was carried out (2008 – 2010) following the Stage 2 review in an effort to develop delisting criteria for the BUI; however, appropriate delisting criteria could not be defined.

With the recent update to the Great Lakes Water Quality Agreement, the Niagara River RAP Steering Committee arranged for a technical assessment of the Eutrophication or Undesirable Algae BUI to be undertaken in accordance with the terms outlined in the 2012 Protocol. Specifically, the BUI was assessed for the “waters of the Great Lakes”, meaning the watersheds to the Niagara River were only considered in regard to causing any direct eutrophication impacts on the Niagara River. Based on the weight-of-evidence, the assessment concluded that Eutrophication or Undesirable Algae is Not Impaired in the Niagara River (Ontario) AOC. As such, it is recommended that the status of Eutrophication or Undesirable Algae for the Niagara River (Ontario) AOC be changed to “Not Impaired”. Further, this status is consistent with Niagara River (New York) RAP designation of “Not Impaired” for this beneficial use (Niagara River (New York) RAP, 2012).

## **PROJECT OBJECTIVES**

The goal of this project is to develop a plain language, user-friendly document for the public that highlights the key findings and results of the technical assessments for the Degradation of Benthos and the Eutrophication or Undesirable Algae Beneficial Use Impairments.

## **PROJECT DELIVERABLES**

The documents are to communicate the technical information in an interesting and informative manner for a wide-ranging public audience. They are to support and promote dialogue on the subject matter and invite the audience to express their views on the information. The documents should consider accessibility requirements and provide printed material in a suitable format so that all members of the public can access the information in it.

This will include:

- 1) A guidance document summarizing the findings in no more than 12 pages (for each BUI assessment).
- 2) A short briefing document no more than 2 pages (for each BUI assessment).

## **PROJECT PROPOSAL**

The proposal shall contain the following:

- 1) An outline demonstrating the understanding of the project goals and deliverables.
- 2) A list of activities to be carried out to meet the projects goals and objectives with associated timelines.
- 3) A list of project team members and their curriculum vitae. Changes in project team members will not be allowed without prior written approval of the NPCA.
- 4) A detailed breakdown of the project costs and disbursements including the team members, their time allocations, and per diem costs.
- 5) The firm's related experience in undertaking projects of similar scope and magnitude.

## **PROJECT GUIDANCE DOCUMENTS**

The consultant shall submit (1) hard copy and a digital copy of the following final products:

- 1) A guidance document summarizing the findings in no more than 12 pages (for each BUI assessment).
- 2) A short briefing document no more than 2 pages (for each BUI assessment).

## **AVAILABLE RESOURCES**

- Niagara River RAP Beneficial Use Impairment (BUI) Assessment report and Status Sheet (04-2015), degradation of Benthos. (Attached)
- Niagara River RAP Beneficial Use Impairment (BUI) Assessment report and Status Sheet (04-2015) Eutrophication or Undesirable Algae.(Attached)

## **PROJECT MEETINGS / COMMUNICATIONS**

The proposal shall budget a reasonable amount to cover the general costs for required meetings and correspondence:

- Project initiation phone meeting with RAP Project Manager;
- Two RAP Coordinating Committee Meetings (Conference Calls, 1.5 hours in duration);
- Prepare and distribute minutes of all meetings;
- Provide bi-weekly e-mail project updates to the RAP Project Manager including progress of work. Additional e-mail based communication may be required during the project and should be budgeted for accordingly.

## **PROPOSAL EVALUATION CRITERIA**

The assessment of a consultant's qualifications to complete a project shall be based on the following:

- Understanding of the project and anticipated end product
- Overall experience and specific experience on similar projects
- Personnel available to undertake the work within the proposed schedule
- Ability to undertake all work required
- Knowledge of local conditions
- Estimated costs to complete the work

## **PROJECT COST**

The budget for the project is \$24,750.00 (excluding GST).

## **PROJECT MANAGEMENT AND REPORTING**

Project Manager:

Jocelyn Baker, Project Manager, Niagara River RAP  
Niagara Peninsula Conservation Authority  
250 Thorold Road West, 3<sup>rd</sup> Floor,  
Welland, Ontario, L3C 3W2

jbaker@npca.ca  
905-788-3135 x 243

## **SUBMISSION OF PROPOSAL**

One copy of the proposal is to be submitted via email on or before, Friday October 30<sup>th</sup> 2015 to Jocelyn Baker, Project Manager, Niagara River RAP, jbaker@npca.ca.

**Report To:** Board of Directors

**Subject:** 215 Pelham Road – City of St. Catharines

**Report No:** 113-15

**Date:** October 21, 2015

---

**RECOMMENDATION:**

1. That Report No. 113-15 be received for information; and
2. Staff be directed to implement one of the options outlined in this report.

**PURPOSE:**

To provide the background of this applicants proposed plans and to inform the Board of staff's assessment and analysis along with potential options for this particular project.

**BACKGROUND:**

On December 5, 2013 the applicant, 1882839 Ontario Inc. (Scott Sweitzer), originally applied to the City of St. Catharines for Site Plan Control to construct a four-storey residential apartment building on the property municipally known as 215 Pelham Road. The site features an existing apartment building and backs onto a valley associated with Twelve Mile Creek (see attachment #1). The site drainage is split such that a portion of the site drains towards the rear of the property and down the slope towards Twelve Mile Creek.

As part of the applicant's stormwater management strategy for the site, all stormwater was to be collected and directed to a spreader swale at the rear yard and directed down the slope. This is contrary to the NPCA's valleylands policies, which typically do not permit stormwater to be directed down a valley slope. The applicant was advised of this on November 8, 2013 (prior to submitting his application).

In April 2015, the original application was abandoned and a revised application was submitted. The revised application featured a new site layout and included a geotechnical report that determined the location of stable top of slope for the purpose of supporting the location of the proposed building. The stormwater management strategy still consisted of directing stormwater to the rear yard and down the valley slope. NPCA staff provided comments to the City advising that the stormwater management proposal remained contrary to NPCA policies.

On June 24, 2015 NPCA staff met with the applicant, his engineer and City staff. At that meeting NPCA staff were informed that there was insufficient capacity in the City's stormwater infrastructure at that location to allow the applicant to connect to the City's storm sewer. NPCA



staff advised the applicant that he would need to approach the NPCA's Board of Directors to seek an exemption from NPCA's policy to allow stormwater to be directed down the slope. In order for the NPCA to properly advise the Board staff requested the geotechnical report be updated to comment on the appropriateness of the applicant's stormwater management strategy.

NPCA staff met separately with City staff on August 17, 2015 to further discuss the storm sewer capacity issue in an effort to determine if there was any possibility to direct stormwater to the storm sewer system. The City reaffirmed verbally that there is insufficient capacity in the storm sewer system in this area. NPCA staff then advised the applicant of the procedure to appear before the Board.

On October 8, 2015, staff received a Supplementary Slope Stability Considerations report from the applicant's geotechnical engineer (Soil-Mat Engineers & Consultants: dated October 6, 2015).

### **DISCUSSION:**

The applicant is seeking an exemption from NPCA policy to allow stormwater to be directed down a valleyland slope and eventually outlet into Twelve Mile Creek. As mentioned previously, the City of St. Catharines has confirmed that the storm sewer along Pelham Road is at capacity and cannot take the flow from subject property. The portion of the slope beyond the applicant's lands is within lands owned by the City of St. Catharines and Ontario Power Generation (OPG).

The stormwater management design for the proposed development will reduce the total site imperviousness from approximately 68 percent to 58 percent. Drainage on the site will be directed towards the east side of the property where a spreader swale will allow overland sheet flow down the 23 metre valley into Twelve Mile Creek. Proposed grass swales along the north and south limits of the subject property will provide help filter sediment prior to water leaving the site.

The NPCA's policies typically do not allow any site alteration within 7.5 metres of the stable top of slope along a valley or within the valley. The intent of this policy is to, among other objectives, minimize the potential for loss of life and property damage and to reduce the need for public and private expenditures for emergency operations, maintenance and restoration. Experience has demonstrated that the best means to reduce the potential for negative impacts to valleylands is to avoid development or alteration within or in close proximity to the feature. In situations where it is not possible to avoid the feature or it is cost prohibitive (as it would be in this situation to construct holding tanks on site to store and release stormwater into the City's system at an appropriately controlled rate), the NPCA's policies have little flexibility to allow new stormwater infrastructure within a valley. The only exception is in the case of municipal stormwater infrastructure.

NPCA staff reviewed the updated geotechnical report ('215 Pelham Road - Supplementary Slope Stability Considerations' noted above) to confirm whether the proposed stormwater management design will have any negative impacts over the long term to the stability of the slope. Although staff have no general objections to this report's conclusions and recommendations, we would note that this report is focused on a single site and comments on slope and groundwater conditions are noted '*at this point in time*'.

Staff remain concerned with the risks associated with this application for the following reasons:

- Allowing stormwater to discharge down the slope in this instance will make it that much more difficult to refuse a similar request for development undertaken in the same general area.
- A single site discharging stormwater down the valley slope may be of no consequence to the stability of the slope 'at this point in time'; however, the cumulative impacts to the stability of the slope of multiple sites discharging stormwater down a valley slope can be very difficult to determine and predict.
- As slope and groundwater conditions can change over time, as a minimum, a long term monitoring and remediation plan would be necessary to identify and respond to unforeseen issues in the future. Staff note that the undertaking and monitoring of these types of plans can have a tendency to lapse over time.
- Given the various owners noted above, management of any monitoring plan and the completion and disbursement of remediation works will be a significant challenge.

As a reminder, NPCA Policy 3.25.5 (REG 155/06) - Required Valleyland Construction Practices states that "The Authority shall require that overland drainage be directed away from valley Slopes, in the review of lot grading and drainage plans for new Development, in areas located immediately adjacent to a natural valley system".

### ***Options:***

From staff's perspective, there are the following options for this particular application:

1. That the Board refuse the applicant's request and uphold the NPCA Valleylands Policies.
2. That the Board grant the applicant's request subject to conditions that would be imposed through both the Site Plan Control process and the NPCA Permit process. Such conditions include, but are not necessarily limited to, the following:
  - a. The Owner agrees to maintain the stormwater management system in accordance with the approved drawings;
  - b. The Owner agrees to grant the City of St. Catharines and the Niagara Peninsula Conservation Authority permission to enter the subject property (with written notice) at any time between 8:00 am and 5:00 pm, Monday to Friday for the purpose of inspecting the stormwater management system.
  - c. The Owner agrees to retain a qualified engineer to prepare a bi-annual monitoring report that will confirm whether or not the stormwater management system is functioning as designed and submit these reports to both the City of St. Catharines and the Niagara Peninsula Conservation Authority;
  - d. Should the monitoring reports reveal that the stormwater management system is not functioning in accordance with the approved plans, then the Owner will rectify the problem within 60 days;
  - e. The foregoing conditions will be included in the Site Plan Agreement between the Owner and the City of St. Catharines and shall be registered on title.

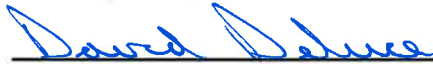
### **FINANCIAL IMPLICATIONS:**

There are no financial implications to the organization as a result of this request.

## **RELATED REPORTS AND APPENDICES:**

1. **Aerial Map** – Twelve Mile Creek & Subject Site
2. **Site Plan** (A1, Site Plan, dated February 18, 2015 by 2M Architects)
3. **Geotechnical Report** (Slope Stability Assessment and Geotechnical Investigation, Proposed Lot Redevelopment, 215 Pelham Road, St. Catharines, dated May 16, 2014 by Soil-Mat Engineers)
4. **215 Pelham Road - Supplementary Slope Stability Considerations** (Supplementary Slope Stability Considerations, Proposed Lot Redevelopment, 215 Pelham Road, St. Catharines, dated October 8, 2015 by Soil-Mat Engineers)

**Prepared by:**



**David Deluce; MICP, RPP**  
**Supervisor, Development Reviews**

**Reviewed by:**



**Peter Graham; P.Eng.**  
**Director, Watershed Management**

**Submitted by:**



**Carmen D'Angelo;**  
**Chief Administrative Officer / Secretary Treasurer**

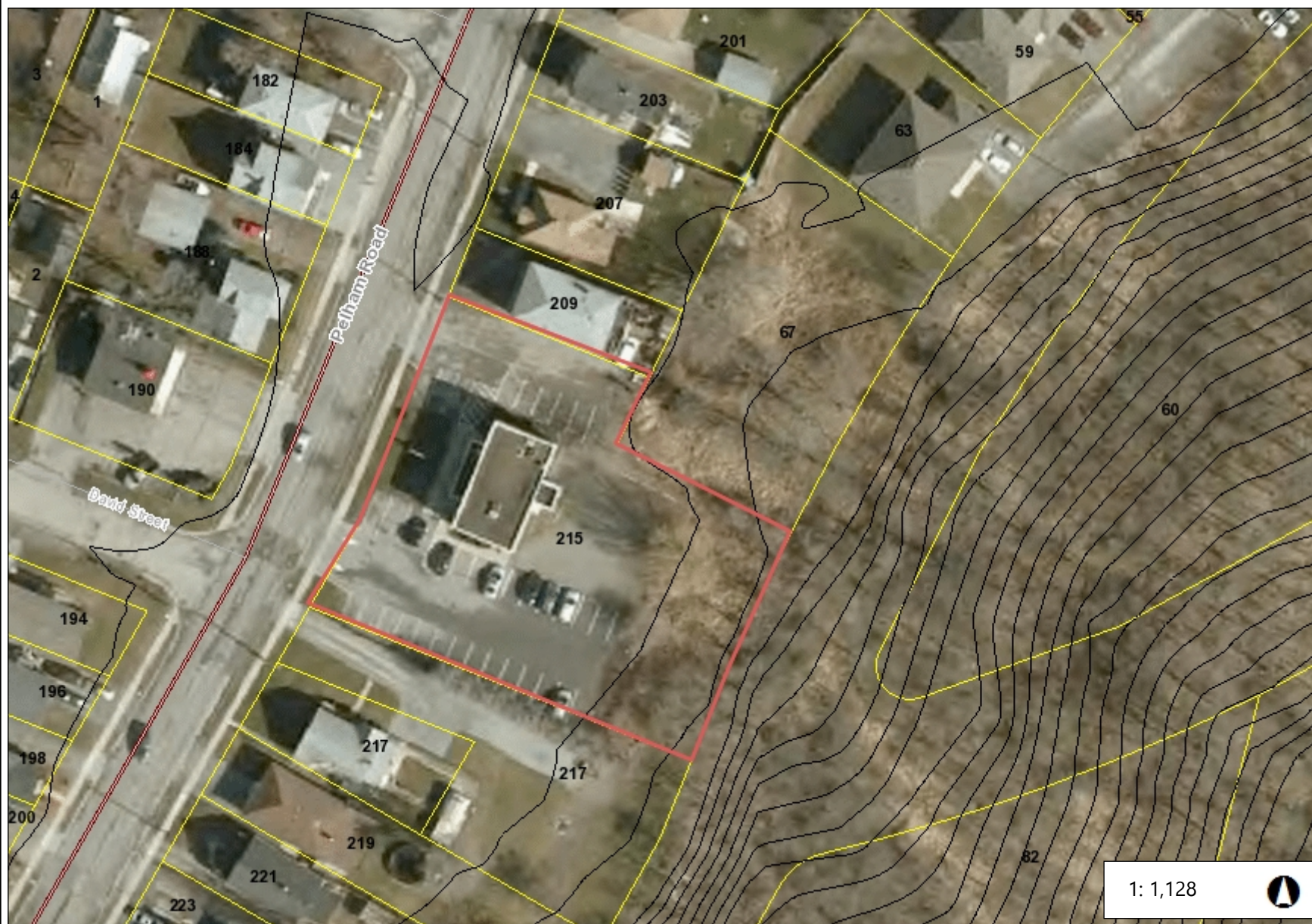
*This report was prepared with the consultative input of Steve Miller; P.Eng. – Supervisor, Water Resources.*





## Legend

- Contours 2010 (1m)
- Corporate Watershed Divide N
- Ontario Road Network
  - Major Highways
  - Arterial Roads
  - Local Roads
- Assessment Parcels
- 2K HydroPoly
- 2K Hydrography
- AIRPORTS
- NPCA Extended Context Area



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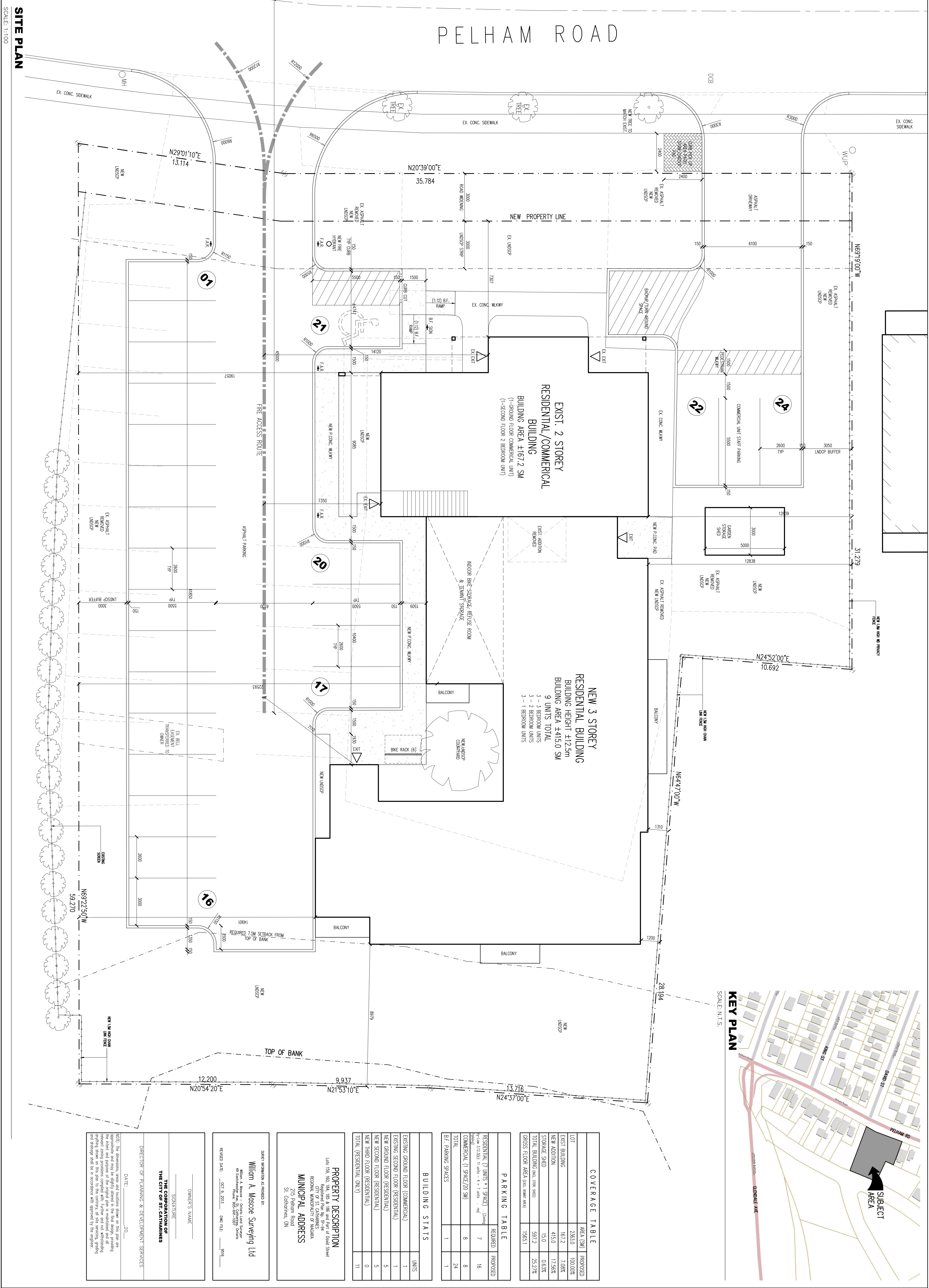
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This map is for illustrative purposes only. Information contained hereon is not intended to constitute advice, is not a substitute for professional review or a site survey, and is subject to change without notice. The NPCA takes no responsibility for, nor guarantees, the accuracy of the information contained on this map. Any interpretations or conclusions drawn from this map are the sole responsibility of the user. THIS IS NOT A PLAN OF SURVEY

## Notes







Job number:  
13-86

revision number:  
00

Drawing number:  
**A1**

Project title:  
PROPOSED NEW APARTMENT BUILDING  
215 PELHAM ROAD  
ST.CATHARINES, ON

Drawing title:  
SITE PLAN

drawn by:  
TD

design by:  
LJM

approved by:  
MRM

date:  
2015-02-18

plot scale:  
1:1

scale:  
AS NOTED

2M architects inc.  
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2Marchitects@cogeco.net  
www.2marchitects.ca

ONTARIO ASSOCIATION OF ARCHITECTS  
LUCIEL MARCHANTOIS  
LICENCE 4779

NO:

BY:

DATE:

REVISION:

01

TD

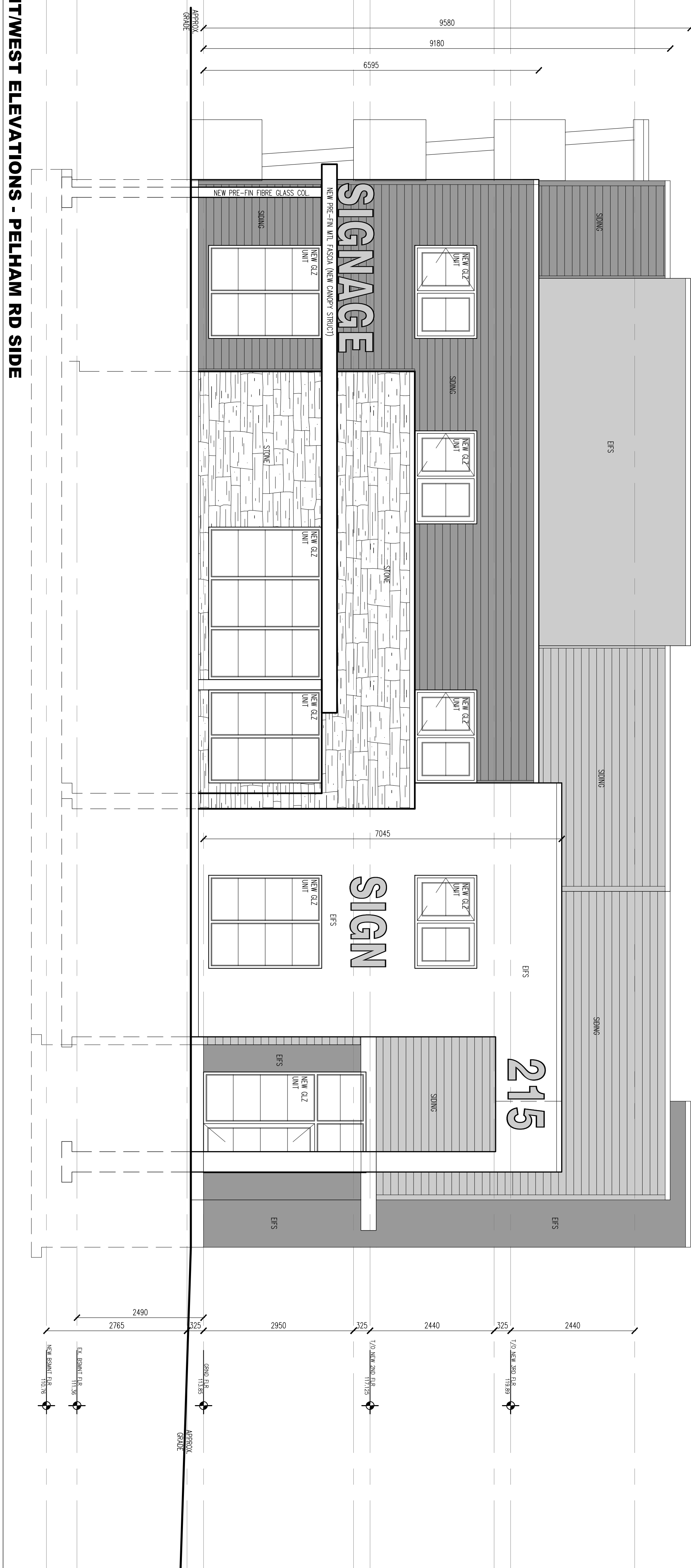
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THESE DOCUMENTS ARE NOT TO BE SCALED.  
CONTRACTOR TO SITE VERIFY ALL DETAILS AND DIMENSIONS AND REPORT ANY AND ALL DISCREPANCIES TO THE ARCHITECT BEFORE COMMENCING WITH THAT RELATED PORTION OF THE WORK.  
ONLY SIGNED SEALED AND STAMPED DOCUMENTS ARE TO BE USED FOR CONSTRUCTION PURPOSES.

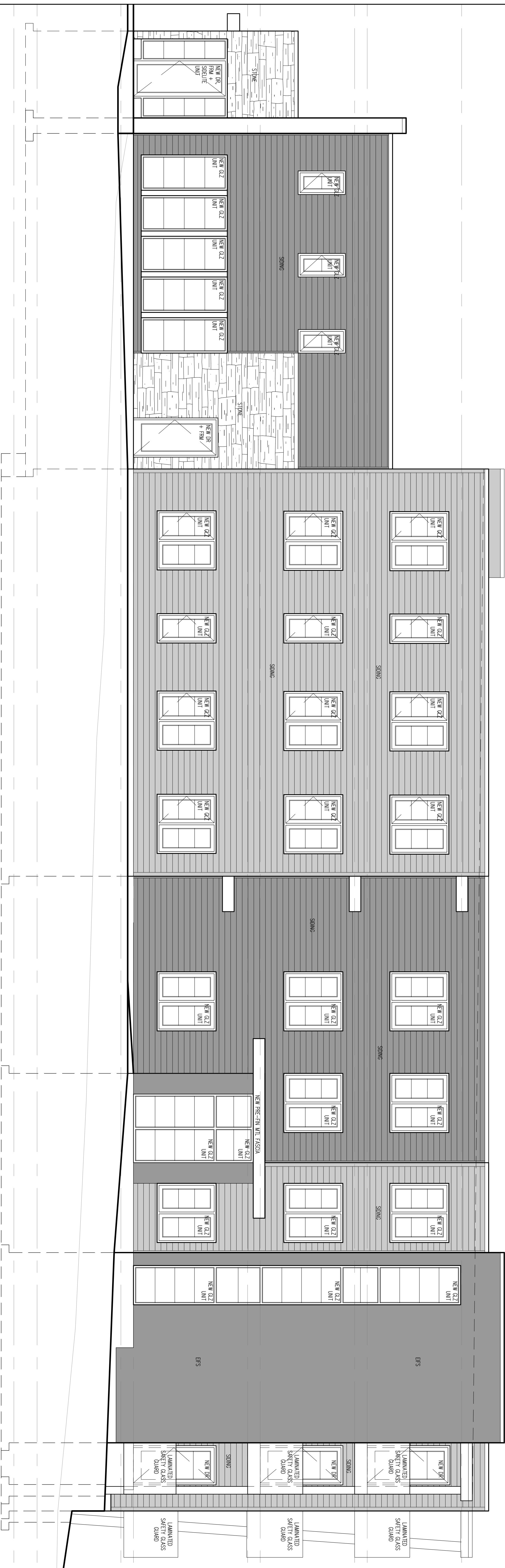






## FRONT/WEST ELEVATIONS - PELHAM RD SIDE

SCALE: 1:50



**SIDE/SOUTH ELEVATION (PARKING LOT SIDE)**

SCALE: 1:50

\_\_\_\_\_  
OWNER'S NAME

\_\_\_\_\_  
SIGNATURE

**THE CORPORATION OF  
THE CITY OF ST. CATHARINES**

DIRECTOR OF PLANNING & DEVELOPMENT SERVICES

\_\_\_\_\_  
DATE: \_\_\_\_\_

\_\_\_\_\_  
20\_\_\_\_

*NOTE: The dimensions, areas and locations shown on this plan are approximate and may be slightly altered in the final design, provided the intent and purpose of the original plan is maintained and all relevant zoning provisions complied with. Further, and notwithstanding anything shown on this plan to the contrary, all site servicing, grading and drainage shall be in accordance with approved by the engineer.*

NOTE: The dimensions, areas and locations shown on this plan are approximate and may be slightly altered in the final design, providing the intent and purpose of the original plan is maintained and all relevant zoning provisions complied with. Further and not withstanding anything shown on this plan to the contrary, all site servicing, grading and drainage shall be in accordance with approved by the engineer.

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CONTRACTOR TO SITE VERIFY ALL DETAILS AND DIMENSIONS AND  
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www.2marchitects.ca



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| design by:<br>LJM   | plot scale:<br>1:1 |
| approved by:<br>MRM | scale:<br>AS NOTED |
| date:<br>2015-02-18 |                    |

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| drawing title: | ELEVATIONS   |

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| job number:<br>13-86 | revision number:<br>00 |
| drawing number:      |                        |

# SPA3





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| SIGNATURE  |
| THE CORPORATION OF<br>THE CITY OF ST. CATHARINES |
| DIRECTOR OF PLANNING & DEVELOPMENT SERVICES      |
| DATE: .20.                                       |

NOTE: The dimensions, areas and locations shown on this plan are approximate and may be slightly altered in the final design, providing the contractor to site verify all details and dimensions and report any and all discrepancies to the architect before commencing work with that related portion of the work.

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| NO. | BY: | DATE:      | REVISION:      |
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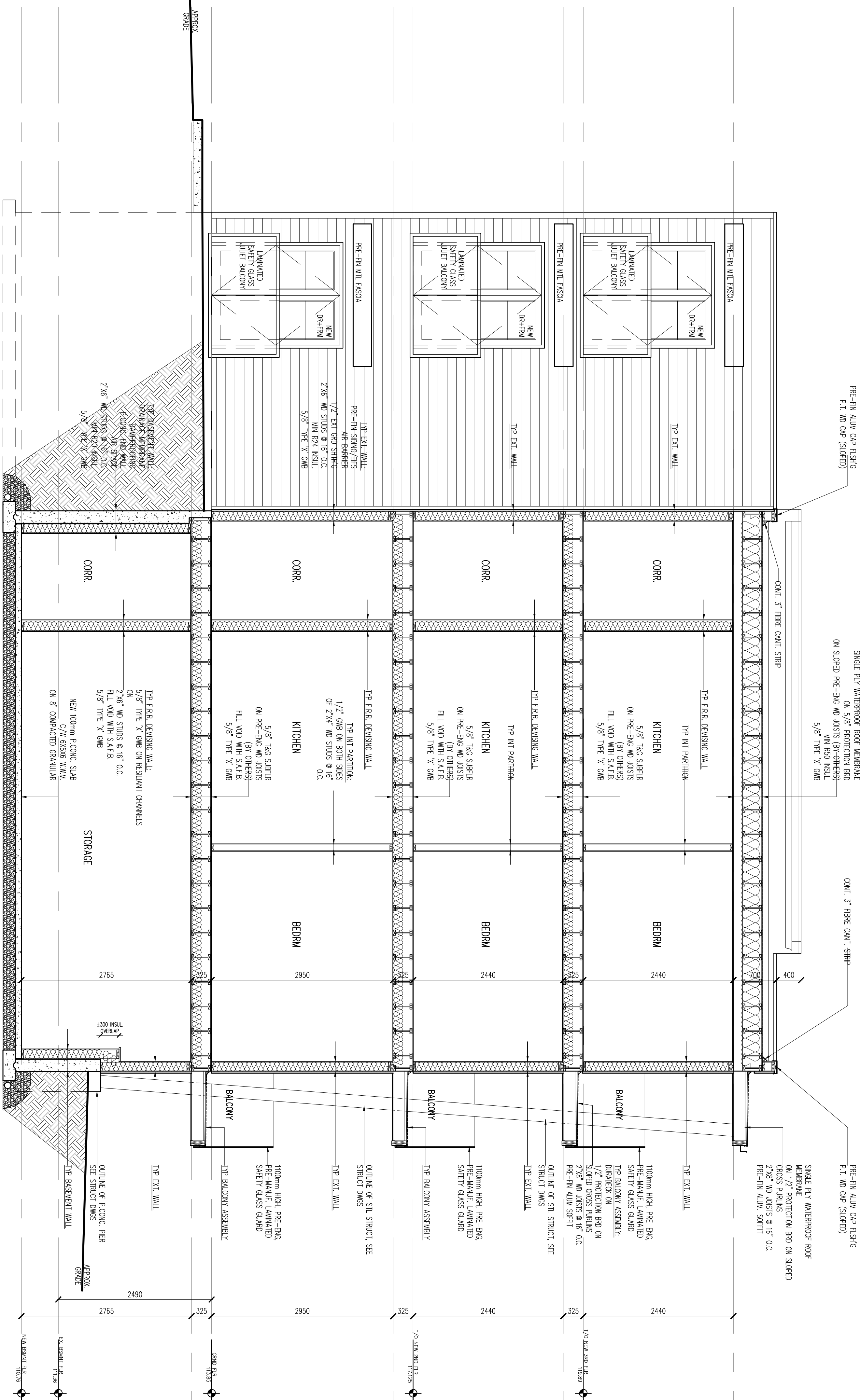


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| drawn by:<br>TD     | plot scale:<br>1:1  |
| design by:<br>LJM   | scale:<br>AS NOTED  |
| approved by:<br>MRM | date:<br>2015-02-18 |

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| project title:<br>PROPOSED NEW<br>APARTMENT BUILDING<br>215 PELHAM ROAD<br>ST.CATHARINES, ON | drawing title:<br>SECTION |
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| job number:<br>13-86           | revision number:<br>00 |
| drawing number:<br><b>SPA5</b> |                        |



DIAGRAMMATICAL SECTION  
SCALE: 1/40





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# SOIL-MAT ENGINEERS & CONSULTANTS LTD.

www.soil-mat.com info@soil-mat.on.ca TF: 800.243.1922

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**Milton:** 20 – 348 Bronte Street South L9T 5B6 T: 905.875.3228 F: 905.875.4426

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**PROJECT NO.: SM145537-G**

May 16, 2014

JOHNSON PROPERTIES  
8 Hiscott Street, Unit 10  
St. Catharines, Ontario  
L2R 1C6

Attention : Scott Sweitzer

**SLOPE STABILITY ASSESSMENT  
AND GEOTECHNICAL INVESTIGATION  
PROPOSED LOT REDEVELOPMENT  
215 PELHAM ROAD, ST. CATHARINES, ONTARIO**

Dear Mr. Sweitzer,

We have completed the fieldwork, laboratory testing, and report preparation in connection with the above noted project. The investigation and reporting were undertaken in general accordance with our proposal P5285, dated January 29, 2014, and revised March 17, 2014. Our comments and recommendations, based on our findings at the three borehole locations and two slope profiles are presented herein.

## **1. INTRODUCTION**

We understand that it is proposed to redevelop the subject property including the construction a four-storey apartment building, with up to one basement level, and surrounding asphaltic concrete parking areas. To the east the property slopes down into the valley lands of Twelve Mile Creek, which is under the jurisdiction of the Niagara Peninsula Conservation Authority [NPCA], and as such it will be necessary to obtain permit approval from NPCA for the proposed development.

The purpose of this slope stability assessment and geotechnical investigation was to evaluate the existing stability of the subject slope, determine the location of the Top of Stable Slope, and provide our comments and recommendations with respect to the proposed site re-development and related earthworks, from a geotechnical point of view. The slope assessment work has been conducted in general accordance with the guideline policies of NPCA, including the Natural Hazards Technical Guide by Ministry of Natural Resources [MNR] and the supporting document Geotechnical Principles for Stable Slopes. The information contained in this report does not reflect upon the environmental aspects of the site and therefore have not been addressed in this document.

PROJECT NO.: SM 145537-G

SLOPE STABILITY ASSESSMENT  
AND GEOTECHNICAL INVESTIGATION  
PROPOSED LOT REDEVELOPMENT  
215 PELHAM ROAD, ST. CATHARINES, ONTARIO



## 2. PROCEDURE

The fieldwork was conducted on April 7, 2014 and consisted of the advancement of three [3] boreholes and the measurement of a two representative slope profiles. The locations of boreholes and slope profiles are illustrated in the attached Drawing No. 1, Borehole and Slope Profile Location Plan, while the slope profiles can be found on Drawing No. 2 and 3, Slope Profile A-A and B-B, respectively.

The borings were put down using truck-mounted drill equipment with continuous flight augers under the direction and supervision of a staff member of SOIL-MAT ENGINEERS & CONSULTANTS LTD. Two boreholes were advanced adjacent to the existing building, extending to termination at depths of approximately 6.6 metres below the existing grade. The third borehole was advanced adjacent to the crest of the subject slope, extending to termination at a depth of 15.7 metres below grade. Upon completion of drilling the boreholes were backfilled in general accordance with Ontario Regulation 903.

Representative samples of the subsoils were recovered from the borings at selected depth intervals using split barrel sampling equipment driven in accordance with the requirements of the ASTM test specification D1586, Standard Penetration Resistance Testing. After undergoing a general field examination, the soil samples were preserved and transported to the SOIL-MAT laboratory for visual, tactile, and olfactory classifications. Routine moisture content tests, were performed on all soil samples recovered from the borings, with unit weight determinations conducted on selected samples. Hand penetrometer testing was conducted on a majority of the cohesive samples.

In addition a stability evaluation of the subject slope was conducted. This included the completion of a Slope Stability Rating Chart, as per the Ontario Ministry of Natural Resources publication "Geotechnical Principles for Stable Slopes" [Geotechnical Principles publication], yielding a Slope Instability Rating Value of 28, which indicates a slight potential for slope instability [requiring a site inspection and detailed analysis]. A copy of the Slope Stability Rating Chart has been attached to this report. The slope profiles were measured from each of the rear [northeast and southeast] corners of the existing building to the trail at the slope's base, perpendicular to the crest of the slope.

The boreholes and slope profiles were located in the field by a representative of SOIL-MAT ENGINEERS. The ground surface elevation at the borehole locations and at the start of the slope profiles were surveyed in relation to a site-specific benchmark described as the manhole in Pelham Road in front of the property. This benchmark has a geodetic elevation of 113.26 metres based on the survey plan provided to our office [prepared by William A. Mascoe Surveying Ltd., File No 9516, dated October 9, 2013].

PROJECT NO.: SM 145537-G

SLOPE STABILITY ASSESSMENT  
AND GEOTECHNICAL INVESTIGATION  
PROPOSED LOT REDEVELOPMENT  
215 PELHAM ROAD, ST. CATHARINES, ONTARIO



### **3. SITE DESCRIPTION AND SUBSURFACE CONDITIONS**

The subject property is located at 215 Pelham Road in St. Catharines, Ontario. The site is located on the east side of Pelham Road, north of Glendale Avenue which crosses Twelve Mile Creek. At the time of the fieldwork the property was occupied by a two-storey commercial office building with asphaltic concrete paved parking areas to the north and south, and a gravel parking area to the east [rear]. The property is bound to the north and south by existing residential properties, to the west by Pelham Road and to the east by the valley lands of Twelve Mile Creek. The grade of the site is relatively flat and even with the level of Pelham Road over the presently developed area, sloping to the east down to the Twelve Mile Creek valley. The subject slope is predominantly surfaced by young and mature trees, as well as shrubs and scrub vegetation. At the toe of the slope is the Participark Trail, a public trail system along Twelve Mile Creek.

The conditions encountered in the boreholes are summarised as follows.

#### **Pavement Structure**

Borehole Nos. 1 and 2 were advanced through the existing parking lot pavement structure on each side [north and south] of the existing building. The pavement structure was found to consist of approximately 75 millimetres of asphaltic concrete over approximately 300 millimetres of compact granular base.

#### **Topsoil**

A surficial veneer of topsoil, approximately 100 millimetres in thickness, was encountered at Borehole No. 3, which was advanced near the crest of the slope. It is noted that the depth of topsoil may vary across the site, with greater depths of topsoil likely present within more heavily treed areas, adjacent to and on the subject slope. It is also noted that the term 'topsoil' has been used from a geotechnical point of view, and does not necessarily reflect its nutrient content or ability to support plant life.

#### **Silty Clay Fill**

A layer of Silty Clay Fill was encountered directly beneath the pavement structure / topsoil in all borehole locations. This fill is brown and grey in colour, with trace sand and fine gravel, contains organic staining throughout, and is generally in a firm consistency. The Silty Clay Fill was encountered to a depth of approximately 1.4 metres in Borehole Nos. 1 and 2, and approximately 2 metres in Borehole No. 3.

PROJECT NO.: SM 145537-G

SLOPE STABILITY ASSESSMENT  
AND GEOTECHNICAL INVESTIGATION  
PROPOSED LOT REDEVELOPMENT  
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### **Native Silty Clay**

Native Silty Clay was encountered underlying the fill deposit in each of the boreholes. This cohesive soil is brown in colour, becoming grey with depth, and contained trace fine to coarse gravel and shale fragments, and was found to be in a generally stiff to hard consistency. Hand penetrometer readings of the recovered Silty Clay samples yielded values of 2.5 to greater than 4.5 kg/cm<sup>2</sup> [tons/ft<sup>2</sup>]. The Native Silty Clay was proven to termination in all boreholes at depths of approximately 6.55 metres in Borehole Nos. 1 and 2, and approximately 15.7 metres in Borehole No. 3.

### **Groundwater Observations**

Borehole Nos. 1 and 2 were recorded as 'dry' upon completion of drilling, while Borehole No. 3 was noted to have free standing water at a depth of approximately 7.0 metres below the existing grade. It should be noted that this is not considered indicative of the static groundwater level as insufficient time would have passed for the groundwater to stabilise in the open boreholes. Based on the observed soil conditions in the boreholes, and our past experience, the static water level is expected to be well below the anticipated depths of construction, at a depth of approximately 8 to 10 metres or more. Nevertheless, some minor infiltration of groundwater through more permeable seams in the fill and native soils and from surface runoff should be anticipated.

## **4. SLOPE CONSIDERATIONS**

### **SLOPE CONDITIONS**

As noted above the subject slope is surfaced with young to mature trees, bushes, and scrub vegetation. There was no evidence of scarring, tension cracking, previous sliding, bowing or tilting trees, or seepage along the length of the examined slope. Some evidence of table land drainage over the slope and resulting minor erosion gullies was noted. As illustrated in Slope Profiles AA and BB, the slope is approximately 24 to 27 metres high, with overall inclinations of approximately 3.4 and 4.3 Horizontal to 1 Vertical.

Natural slopes with overall inclinations at 3 horizontal to 1 vertical or flatter are generally considered to be stable in the long-term. The slope has evidently remained stable for a very long period of time with only imperceptibly slow flattening of the slope. As with all slopes, there is a reduction in surficial shearing resistance attributed to the effects of freezing and thawing, wetting and drying, burrowing animals, etc. With time, the surface of the slope will degenerate and tend to reach equilibrium within its stress and ambient environment, including vegetative cover. However this type of degeneration is a very slow process, as is evident by the observed stable condition of the existing slope.

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**STABILITY ASSESSMENT**

A detailed stability analysis of the subject slope was performed with a computerized modeling program [SLOPE/W 2007]. Analyses were conducted considering multiple failure planes, variable groundwater conditions, and using multiple methods of analysis [Bishop, Ordinary, Janbu]. The following material parameters were assigned to the fill and native soils, based on our testing and observations.

| Soil              | Unit weight, $\gamma$  | Friction angle, $\phi$ | Cohesion, $c$ |
|-------------------|------------------------|------------------------|---------------|
| Silty Clay Fill   | 17.0 kN/m <sup>3</sup> | 28°                    | 2 kPa         |
| Native Silty Clay | 19.5 kN/m <sup>3</sup> | 30°                    | 5 kPa         |

The results of the stability analyses indicate applicable Factors of Safety for Profile A-A on the order of 1.63 or greater and on the order of 2.35 or greater for Profile B-B. Sample results of these analyses are attached to this report. It is noted that theoretical surficial failure planes would exist with marginally lower calculated factors of safety, however these models do not account for the stabilizing effect of surface vegetation. Further any such shallow surficial movements would not impact the global stability of the slope.

Based on our analyses, the Factor of Safety for the existing slope is on the order of 1.6 or greater. Table 7.2 of the Geotechnical Principles for Stable Slopes [Ministry of Natural Resources] lists a Design Minimum Factor of Safety of between 1.3 and 1.5 for 'Active' land use properties [habitable or unoccupied structures near slope]. The calculated Minimum Factor of Safety for the existing slope is well in excess of this range. As such the existing slope is considered to be stable in both the short and long-term for the existing and proposed land use.

**TOP OF STABLE SLOPE**

The top of stable slope is determined by the application of an erosion allowance at the toe and a stable slope inclination through the slope. In this case, considering the considerable distance from the edge of Twelve Mile Creek to the toe, with the presence of an established public trail, a lesser erosion allowance could be justified. However, based on the established soil conditions, and referencing Table 3 of the 'Natural Hazards Technical Guide: Erosion Hazard Limit', an erosion allowance of 4 metres was conservatively used in our assessment.



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Referencing Table 4.3 of 'Geotechnical Principles for Stable Slopes' it is noted that for glaciolacustrine clays and silts, observed stable slope inclinations are on the order of 2 to 4 horizontal to 1 vertical. Based on the established very stiff Silty Clay native soils established on the boreholes a stable slope inclination of 2.5, and even 2, horizontal to 1 vertical may be considered. However, given the flat condition of the existing slope, a stable slope inclination of 3.0 horizontal to 1 vertical has been conservatively considered for the present assessment.

Applying the erosion and stable slope allowances provides for the location of the top of stable slope. In this case, given the naturally flat inclination of the subject slope on the order of 3.4 to 4.2 horizontal to 1 vertical, this top of stable slope determined by the application of the erosion and stable slope allowance would be located significantly 'downhill' of the existing physical crest. Theoretically with a slope flatter than 3 horizontal to 1 vertical, and the existing factor of safety established well greater than 1.5, any point on the face of the slope could be considered as stable in the long-term. In this case it is recommended that the top of stable slope may be taken as the existing physical crest of the slope, approximately 34 metres from the rear wall of the existing building.

#### CONSTRUCTION CONSIDERATIONS

With the existing slope established as being inherently stable in both the short and long-term, and the top of stable slope considered to coincide with the existing physical crest of the slope, the existing structure would likewise be considered stable. New development uphill of the physical crest, including the proposed four-storey structure and associated parking areas, will not negatively impact the stability of the existing slope, from a geotechnical point of view. The incorporation of a basement level would have no negative impact on the long-term stability of the slope. The NPCA typically requires a setback of 7.5 metres from the established top of stable slope for any new construction. However it is noted that the encroachment of on grade parking space within this area would be reasonable as it would have no negative impact on the long-term stability of the slope, provided drainage over the slope is properly addressed.

The following recommendations should be considered in the development of the property.

- Foundations for the new structure should extend below a line drawn up from the toe of the slope at 3 horizontal to 1 vertical in order to limit stress transfer from the footings to the face of the slope. In this case, this is automatically addressed by the existing slope being flatter than 3 horizontal to 1 vertical overall, and the provision of at least nominal 1.2 metres of earth cover for frost protection.

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- Drainage over the slope should not be altered, or any increased or concentrated flows introduced onto the slope. Downspouts and surface runoff should be outlet onto the slope in a controlled manner, and allowed to dissipate through established grass or vegetation to prevent erosion.
- Any surficial damage to the face of the slope caused during construction should be repaired and the grass/vegetation re-established.
- No excavated soil or construction products should be stockpiled near the crest of the existing slope. A designated staging area should be established away from the physical crest of the slope.
- A silt fence must be constructed as part of the construction operation to prevent any sediment runoff downhill to the creek. It is recommended that the silt fence be located on or slightly uphill of the top of stable slope [physical crest].

#### **5. FOUNDATION CONSIDERATIONS**

The soil conditions encountered at the boreholes are considered suitable for support of the proposed structure on conventional spread footings, provided the footings are founded in the undisturbed native Silty Clay, below any fill material. Spread footings founded in the Native Silty Clay may be designed using a factored Ultimate Limit State [ULS] bearing capacity of 400 kPa [ $\sim 8,000$  psf]. The allowable bearing stress at Serviceability Limit State [SLS] should be limited to 250 kPa [ $\sim 5,000$  psf], based on the total and differential settlements not exceeding 25 and 20 millimetres, respectively.

It is noted that the SLS value represents the Serviceability Limit State, which is governed by the tolerable deflection [settlement] based on the proposed building type, using unfactored load combinations. The ULS value represents the Ultimate Limit State and is intended to reflect an upper limit of the available bearing capacity of the founding soils in terms of geotechnical design, using factored load combinations. There is no direct relationship between ULS and SLS, rather they are a function of the soil type and the tolerable deflections for serviceability, respectively. The above dissertation assumes a typical building. Evidently, the bearing capacity values would be lower for very settlement sensitive structures and larger for more flexible buildings.

The native Silty Clay soils are sensitive to moisture and disturbance, such as from construction traffic. It would be advisable to protect the base of excavations with the placement of a thin, perhaps 50 millimetres thick, concrete 'mud' slab. This will serve to protect the founding soils from disturbance and provide a clean working surface for the placement of reinforcing steel. In any event, whether mud slab or footing, concrete should be placed over the prepared founding level as soon as possible, ideally within the same day it is excavated.

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The support conditions afforded by the founding soils are usually not uniform across the site, neither are the loads on the various foundation elements. It is therefore recommended that the footings and foundation walls be reinforced to account for potential variable support and loading conditions.

In areas where it will be necessary to provide adjacent footings at different founding elevations, the lower footing should be constructed before the higher footing is constructed, if possible, and the higher footing should be set below an imaginary line drawn up from the edge of the lower footing at 10 horizontal to 7 vertical. This practice will limit stress transfer from the higher footings to lower footings.

All footings exposed to the environment must be provided with a minimum of 1.2 metres of earth cover or equivalent insulation to protect against frost damage. This frost protection would also be required if construction were undertaken during the winter months. All footings and foundations should be designed and constructed in accordance with the current Ontario Building Code.

With foundations designed as outlined above and as required by the Building Code, and with careful attention paid to construction detail, total and differential settlements should be well within normally tolerated limits of 25 and 20 millimetres, respectively, for the type of building and occupancy expected.

It is imperative that a soils engineer be retained from this office to provide geotechnical engineering services during the excavation and foundation construction phases of the project. This is to observe compliance with the design concepts and recommendations of this report and to allow changes to be made in the event that subsurface conditions differ from the conditions identified at the Borehole locations.

## **6. LATERAL EARTH PRESSURE**

The lateral earth pressures on basement walls can be estimated on the basis of backfill [free draining granular material] unit weight,  $[\gamma]$ , of  $20 \text{ kN/m}^3$ . The coefficient of lateral earth pressure may be taken as,  $K_o = 0.5$  in fill against rigid walls [at rest condition]. Any additional pressures due to surcharge loading, such as parked vehicles, floor slab loading, etc. must be included in the design.

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## **7. SEISMIC DESIGN CONSIDERATIONS**

The structure shall be designed according to Section 4.1.8 of the 2012 Ontario Building Code, Ontario Regulation 332/12. Based on the subsurface soil conditions encountered in this investigation the applicable Site Classification for the seismic design is Site Class D – Stiff Soil, based on the average soil characteristics for the site. . A higher seismic site class value, perhaps Site Class C, may be available however it would be necessary to confirm this by site specific shear wave velocity testing.

The seismic data, from Supplementary Standard SB-1 of the Ontario Building Code, for St. Catharines are as follows.

| $S_a[0.2]$ | $S_a[0.5]$ | $S_a[1.0]$ | $S_a[2.0]$ | PGA   |
|------------|------------|------------|------------|-------|
| 0.34       | 0.190      | 0.069      | 0.023      | 0.200 |

## **8. FLOOR SLAB**

The building floor slabs may be constructed using conventional slab-on-grade techniques on a prepared subgrade. The exposed subgrade surface should be well compacted or 'proof rolled' in the presence of a representative of Soil-Mat Engineers. Any soft 'spots' delineated during this work must be sub-excavated and replaced with quality backfill material compacted to 100 per cent of its standard Proctor maximum dry density.

As with all concrete floor slabs, there is a tendency for the floor slabs to crack. The slab thickness, concrete mix design, the amount of steel and/or fibre reinforcement and/or wire mesh placed into the concrete slab, if any, will therefore be a function of the owner's tolerance for cracks in, and movements of, the slabs-on-grade, etc. The 'saw-cuts' in the concrete floors, for crack control, should extend to a minimum depth of 1/3 of the thickness of the slab.

A moisture barrier will be required under the floor slabs, such as the placement of at least 200 millimetres of well-compacted 20 millimetre clear crushed stone. At a minimum, the moisture barrier material should contain no more than 10 per cent passing the No. 4 sieve. Where 'non-damp' floor slabs are required, as for instance under sheet vinyl floor coverings, etc., extra efforts will be required to damp proof the floor slab, as with the additional provisions of a heavy 'poly' sheet, damp proofing sprays/membranes, drainage board products, etc. Where 'poly' sheets are used care should be taken to prevent puncturing and tearing and/or a sufficiently heavy gauge of sheeting should be specified.

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Curing of the slab-on-grade must be carefully specified to ensure that slab curl is minimised. This is especially critical during the hot summer months of the year, when the surface of the slab tends to dry out quickly while high moisture conditions in the moisture barrier or water trapped on top of any 'poly' sheet at the saw cut joints and cracks, and at the edges of the slabs, maintains the underside of the slab in a moist condition.

It is important that the concrete mix design provide a limiting water/cement ratio and total cement content, which will mitigate moisture related problems with low permeance floor coverings, such as debonding of vinyl and ceramic tile. It is equally important that excess free water not be added to the concrete during its placement as this could increase the potential for shrinkage cracking and curling of the slab.

#### **9. PERMANENT DRAINAGE**

All foundation walls should be suitably damp-proofed including the provision of a suitable 'dimple type' drainage board. A permanent perimeter drainage tile system should be provided around the structure to prevent the build-up of water under the floor slabs and against the foundation walls.

The volume of groundwater control required during construction should be monitored and used to assist in sizing the permanent drainage requirements. As a minimum it is recommended that the perimeter weeping tile consist of a 150 millimetres diameter perforated pipe with a geofabric 'sock', surrounded with 200 millimetres of 20 millimetre clear stone, with the stone in turn encased by a heavy geotextile filter fabric. The suppliers of the geotextile filter fabric should be consulted as to the type best suited for this project. The attached Drawing No. 4 illustrates the typical requirements for basement slab on grade with perimeter and underfloor drainage.

This office should examine the installation of the perimeter and under-floor drains. Even a small break in the filtering materials could result in loss of 'fines' into the drains with attendant performance difficulties, including settlements of the ground surface. The exterior grade around the structure should be sloped away from the structure to prevent the ponding of water against the foundation walls.



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## 10. EXCAVATIONS

Excavations for the installation of building foundations, including a single basement level, and underground services are generally expected to extend to depths of up to about 3 to 4 metres below the existing grade. Excavations through the Silty Clay Fill and into the Native Silty Clay soils should be relatively straightforward, with the sides remaining stable for the short construction period at 45 degrees to the horizontal or steeper in the fill, and at 60 degrees to the horizontal or steeper in the native Silty Clay. Nevertheless, all excavations must comply with the current Occupational Health and Safety Act and Regulations for Construction Projects. Excavation slopes steeper than those required in the Safety Act must be supported or a trench box must be provided, and a senior geotechnical engineer from this office should monitor the work.

As noted above the static groundwater level is expected to be well below the depths of construction. Nonetheless, some minor infiltration of groundwater through the more permeable seams, as well as surface runoff into open excavations, should be anticipated. It should be possible to adequately control groundwater infiltration for the short construction period using conventional construction dewatering methods, such as pumping from sumps in the base of the excavation. More groundwater control should be anticipated when connections are made to existing services. Surface water should be directed away from the excavations.

The base of the excavations in the very stiff to stiff Silty Clay encountered in the upper levels of the boreholes should generally remain firm and stable. Therefore, standard pipe bedding may be provided, as typically specified by the Ontario Provincial Standard Specification will be satisfactory, compacted to 95 per cent of its standard Proctor density [SPMDD]. Special attention should be paid to compaction under the pipe haunches.

## 11. BACKFILL CONSIDERATIONS

The majority of excavated soil will consist of the Silty Clay Fill, as well as some Native Silty Clay, as described above. A majority of the excavated material is expected to be transported off-site to accommodate the basement level. Select portions of the Silty Clay Fill and the native soils are generally considered suitable for use as engineered fill, trench backfill, etc., provided that the material is free of organics and organic staining, and that its moisture content can be controlled to within 3 percent of its standard Proctor optimum moisture content. Some selective sorting of the fill materials may be required.

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It is noted that the Silty Clay Fill and Silty Clay soils are not free draining and should not be used where this characteristic is necessary. It is also noted that the cohesive soil will present difficulties in achieving effective compaction where access with compaction equipment is restricted. The Silty Clay Fill and Silty Clay soil is generally considered to be near its standard Proctor optimum moisture content. Some moisture conditioning may be required depending upon the weather conditions at the time of construction.

The use of free draining, well-graded granular material, such as an Ontario Provincial Standard Specification [OPSS] Granular B, Type II [crushed bedrock], is recommended for backfill against foundation walls or to raise the interior grade to the design subgrade level. This material is more readily compacted in restricted access areas, and generally presents a more positive support condition for interior floor slabs and exterior pavement and concrete sidewalks. Alternative well graded granular fill materials could be considered, however they should be reviewed and approved by this office prior to use.

We note that where backfill material is placed near or slightly above its optimum moisture content, the potential for long term settlements due to the ingress of groundwater and collapse of the fill structure is reduced. Correspondingly, the shear strength of the 'wet' backfill material is also lowered, thereby reducing its ability to support construction traffic and therefore impacting roadway construction. If the soil is well dry of its optimum value, it will appear to be very strong when compacted, but will tend to settle with time as the moisture content in the fill increases to equilibrium condition. The Silty Clay Fill and Silty Clay soil may require high compaction energy to achieve acceptable densities if the moisture content is not close to its standard Proctor optimum value. It is therefore very important that the placement moisture content of the backfill soils be within 3 percent of its standard Proctor optimum moisture content during placement and compaction to minimise long term subsidence [settlement] of the fill mass. Any imported fill required in service trenches or to raise the subgrade elevation should have its moisture content within 3 per cent of its optimum moisture content and meet the necessary environmental guidelines.

A representative of SOIL-MAT should be present on-site during the backfilling and compaction operations to confirm the uniform compaction of the backfill material to project specification requirements. Close supervision is prudent in areas that are not readily accessible to compaction equipment, for instance near the end of compaction 'runs'. All structural fill should be compacted to 100 per cent of its standard Proctor maximum dry density. Backfill within service trenches, areas to be paved, etc., should be compacted to a minimum of 95 per cent of its SPMDD, and to 100 per cent of its SPMDD in the upper one metre below the design subgrade level. The appropriate compaction equipment should be employed based on soil type, i.e. pad-toe for cohesive soils and smooth drum/vibratory plate for granular soils. A method should be developed to assess compaction efficiency employing the on-site compaction equipment and backfill materials during construction.

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## **12. PAVEMENT STRUCTURE DESIGN CONSIDERATIONS**

All areas to be paved must be cleared of all topsoil and unsuitable materials and the exposed subgrade proof rolled with 3 to 4 passes of a loaded tandem-axle truck in the presence of a representative of Soil-Mat Engineers & Consultants Ltd., immediately prior to the placement of the sub-base material. Any areas of distress revealed by this or other means should be sub-excavated and replaced with suitable backfill material. Where the subgrade condition is poorer it may be necessary to implement more aggressive stabilisation methods, such as the use of coarse aggregate [50mm clear stone, 'rip rap' stone, etc.] 'punched' into the soft areas. It may also be prudent to consider the provision of a heavy geofabric over the subgrade to act as a separator between the subgrade and granular base materials. In such case it is recommended that a non-woven product be specified.

The need for sub-excavations of softened subgrade materials will be reduced if construction is undertaken during dry periods of the year and careful attention is paid to the compaction operations. As noted above the on site soils are sensitive to disturbance and moisture and may present difficulty for roadway construction during 'wet' periods of the year. Should pavement construction be undertaken during 'wet' periods of the year it should be anticipated that greater stabilisation efforts will be required and/or additional depth of OPSS Granular B, Type II sub-base course material may be required.

Good drainage provisions will optimise the long-term performance of the pavement structure. The subgrade must be properly crowned and shaped to promote drainage to the subdrain system. Subdrains should be installed to intercept excess subsurface water and to prevent softening of the subgrade material. Surface water should not be allowed to pond adjacent to the outer limits of the paved areas.

The most severe loading conditions on the subgrade typically occur during the course of construction, therefore precautionary measures may have to be taken to ensure that the subgrade is not unduly disturbed by construction traffic. Soil-Mat should be given the opportunity to review the final pavement structure design and subdrain scheme prior to construction to ensure that they are consistent with the recommendations of this report.

The suggested pavement structures outlined in Table A are based on subgrade parameters estimated on the basis of visual and tactile examinations of the on-site soils and past experience. The outlined pavement structure may be expected to have an approximate ten-year life, assuming that regular maintenance is performed. Should a more detailed pavement structure design be required, then site specific traffic information would be needed, together with detailed laboratory testing of the subgrade soils.

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**Table A**  
**RECOMMENDED PAVEMENT STRUCTURES**

| LAYER<br>DESCRIPTION  | COMPACTION<br>REQUIREMENTS | LIGHT DUTY<br>SECTIONS | HEAVY DUTY<br>[TRUCK ROUTE] |
|-----------------------|----------------------------|------------------------|-----------------------------|
| Asphaltic Concrete    |                            |                        |                             |
| Wearing course        | 97 percent                 | 65 millimetres         | 40 millimetres              |
| OPSS HL 3 or<br>HL 3A | Marshall                   |                        |                             |
| Binder Course         | 97 percent                 |                        | 65 millimetres              |
| OPSS HL 8             | Marshall                   |                        |                             |
| Base Course           | 100% SPMDD                 | 150 millimetres        | 150 millimetres             |
| OPSS Granular A       |                            |                        |                             |
| Sub-base Course       | 100% SPMDD                 | 200 millimetres        | 350 millimetres             |
| OPSS Granular B       |                            |                        |                             |
| Type II               |                            |                        |                             |

\* SPMDD denotes Standard Proctor Maximum Dry Density, ASTM-D698.

Depending on the arrangement of light duty and heavy duty pavement sections, the transition between sections may present some difficulty for contractors. In this regard, consideration might be given to a slightly increased light duty pavement structure consisting of 50 millimetres of HL8 binder course and 40 millimetres of HL3 surface course asphaltic concrete. This structure will provide for a continuous depth of surface course asphalt allowing for ease of construction. As well such a structure would have an improved performance over an increased design life. Such an arrangement of asphalt layers would also allow for future rehabilitation with a 'mill and pave' type operation.

To minimise segregation of the finished asphalt mat, the asphalt temperature must be maintained uniform throughout the mat during placement and compaction. All too often, significant temperature gradients exist in the delivered and placed asphalt with the cooler portions of the mat resisting compaction and presenting a honeycomb surface. As the spreader moves forward, a responsible member of the paving crew should monitor the pavement surface, to ensure a smooth uniform surface. The contractor can mitigate the surface segregation by 'back-casting' or scattering shovels of the full mix material over the segregated areas and raking out the coarse particles during compaction operations. Of course, the above assumes that the asphalt mix is sufficiently hot to allow the 'back-casting' to be performed.

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The existing pavement structure was noted to consist of approximately 75 millimetres of asphaltic concrete of approximately 300 millimetres of compact granular base. The depth of granular material within the existing gravel parking area should also be verified. Depending on the finished grades in the proposed new development it may be possible to reuse the existing granular materials in the new pavement structures. Ideally the finished grade would remain the same or be raised slightly. The existing asphalt layer could remain in place during construction of the building to provide a stable surface of construction equipment. Once building construction is complete the existing asphalt could be removed, or pulverized into the existing granular material. Any surficial 'mud tracking' or soil contamination of the granular materials should be removed and the granular base re-compacted in place to provide the sub-base course of the recommend new pavement structure.


**12. GENERAL COMMENTS**

The comments provided in this document are intended only for the guidance of the design team. The subsoil descriptions and borehole information are only intended to describe conditions at the borehole locations. Contractors placing bids or undertaking this project should carry out due diligence in order to verify the results of this investigation and to determine how the subsurface conditions will affect their operations.

We trust that this geotechnical report is sufficient for your present requirements. Should you require any additional information or clarification as to the contents of this document, please do not hesitate to contact the undersigned.

Yours very truly,  
SOIL-MAT ENGINEERS & CONSULTANTS LTD.

Matt LiVecchi, B. Eng., EIT

  
John Monkman, P.Eng.  
Review Engineer

  
Ian Shaw, P.Eng.  
Project Engineer

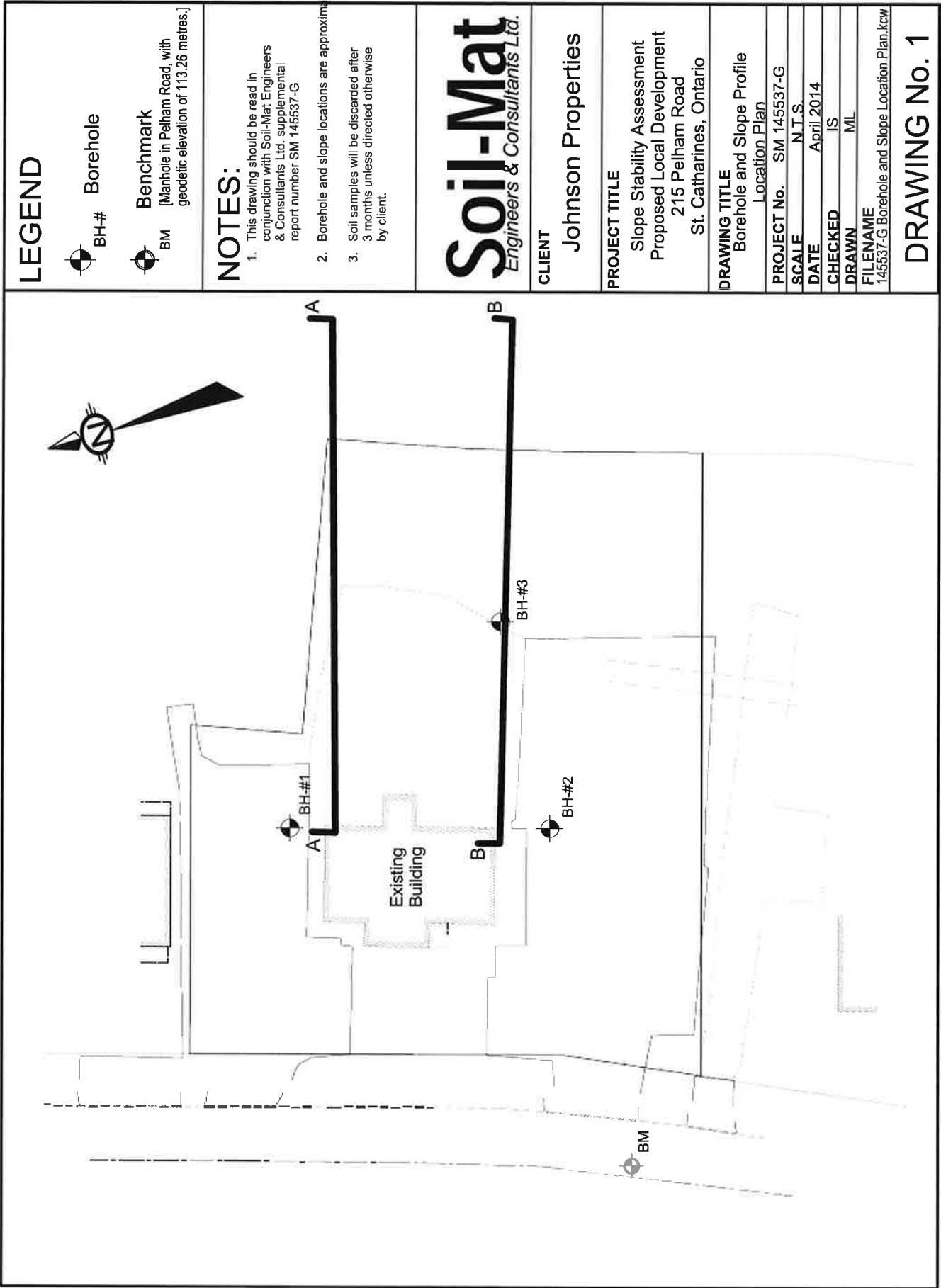
May 20/19

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Enclosures:     Drawing No. 1, Borehole Location Plan  
                      Borehole Log Nos. 1 to 3, inclusive  
                      Drawing Nos. 2 and 3, Slope Profiles A-A and B-B  
                      Slope Stability Rating Chart  
                      Slope/W analyses results [Profile AA and Profile BB – 2 pages]  
                      Drawing No. 4, Recommended Design Requirements for Basement level Slab on Grade

Distribution:     Johnson Properties [3, plus pdf]





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**Log of Borehole No. 1**

Project: 215 Pelham Road

Project Manager: Ian Shaw, P. Eng.

Location: St. Catharines, Ontario

Borehole Location: See Drawing No. 1

Client: Johnson Properties



| SUBSURFACE PROFILE |               |        |  |           | SAMPLE |        |             |             |          |                           |                            |  |
|--------------------|---------------|--------|--|-----------|--------|--------|-------------|-------------|----------|---------------------------|----------------------------|--|
| Depth              | Elevation [m] | Symbol | Description  | Well Data | Type   | Number | Blow Counts | Blows/300mm | Recovery | PP (kgf/cm <sup>2</sup> ) | U.Wt. (kN/m <sup>3</sup> ) | Moisture Content w%<br>▲ 10 20 30 40 ▲ |
| 0                  | 113.14        |        | Ground Surface   |           |        |        |             |             |          |                           |                            |  |
| 0                  | 112.77        |        | <b>Pavement Structure</b><br>Approximately 75 millimetres of asphalt over 300 millimetres of granular base   |           |        |        |             |             |          |                           |                            |  |
| 2                  |               |        |  |           |        |        |             |             |          |                           |                            |  |
| 4                  | 111.74        |        | <b>Silty Clay Fill</b><br>Brown / Grey, with trace sand, fine gravel, and organic staining, firm.  |           | SS     | 1      | 2,3,5       | 8           |          | 1.5                       |                            |  |
| 6                  |               |        |  |           | SS     | 2      | 4,6,11      | 17          |          | 2.5                       | 20.1                       |  |
| 8                  |               |        | <b>Native Silty Clay</b><br>Brown, trace fine gravel and shale fragments, very stiff to hard.  |           | SS     | 3      | 6,11,18     | 29          |          | >4.5                      | 20.1                       |  |
| 10                 |               |        |  |           | SS     | 4      | 10,15,22    | 37          |          | >4.5                      | 19.9                       |  |
| 12                 |               |        |  |           |        |        |             |             |          |                           |                            |  |
| 14                 |               |        |  |           |        |        |             |             |          |                           |                            |  |
| 16                 |               |        |  |           | SS     | 5      | 8,16,22     | 38          |          | >4.5                      | 19.2                       |  |
| 18                 |               |        |  |           |        |        |             |             |          |                           |                            |  |
| 20                 |               |        |  |           |        |        |             |             |          |                           |                            |  |
| 22                 | 106.58        |        |  |           | SS     | 6      | 4,7,11      | 18          |          | 3.25                      | 19.0                       |  |
| 24                 |               |        | End of Borehole  |           |        |        |             |             |          |                           |                            |  |
| 26                 |               |        | NOTES:<br>1. Borehole was advanced using solid stem auger equipment on April 7, 2014 to termination at a depth of 6.55 metres.<br>2. Borehole was recorded as 'dry' upon completion of drilling and backfilled as per Ontario Regulation 903.<br>3. Soil samples will be discarded after 3 months unless otherwise directed by our client. |           |        |        |             |             |          |                           |                            |  |
| 28                 |               |        |  |           |        |        |             |             |          |                           |                            |  |
| 30                 |               |        |  |           |        |        |             |             |          |                           |                            |  |
| 32                 |               |        |  |           |        |        |             |             |          |                           |                            |  |

Drill Method: Solid Stem Augers

SOIL-MAT ENGINEERS &amp; CONSULTANTS LTD.

Datum: Geodetic

Drill Date: April 7, 2014

130 Lancing Drive, Hamilton, ON L8W 3A1  
Phone: (905) 318-7440 Fax: (905) 318-7455

Checked by: IS

Hole Size: 150mm

e-mail: info@soil-mat.on.ca

Sheet: 1 of 1

Project No: SM 145537-G

**Log of Borehole No. 2**

Project: 215 Pelham Road

Project Manager: Ian Shaw, P. Eng.

Location: St. Catharines, Ontario

Borehole Location: See Drawing No. 1

Client: Johnson Properties



| SUBSURFACE PROFILE |               |        |   |           | SAMPLE |        |             |             |          |                           | Moisture Content<br>w%<br>▲ 10 20 30 40 ▲ |   |
|--------------------|---------------|--------|---|-----------|--------|--------|-------------|-------------|----------|---------------------------|---|---|
| Depth              | Elevation [m] | Symbol | Description   | Well Data | Type   | Number | Blow Counts | Blows/300mm | Recovery | PP (kgf/cm <sup>2</sup> ) | U.Wt. (kN/m <sup>3</sup> )                | Standard Penetration Test<br>blows/300mm<br>● 20 40 60 80 ● |
| 0                  | 113.06        |        | Ground Surface  |           |        |        |             |             |          |                           |   |   |
| 0                  | 112.69        |        | <b>Pavement Structure</b><br>Approximately 75 millimetres of asphalt<br>over 300 millimetres of granular base |           |        |        |             |             |          |                           |   |   |
| 2                  |               |        |   |           |        |        |             |             |          |                           |   |   |
| 4                  | 111.66        |        | <b>Silty Clay Fill</b><br>Brown / Grey, with trace sand, fine gravel,<br>and organic staining, firm.          |           | SS     | 1      | 2,3,4       | 7           |          |                           |   |   |
| 6                  |               |        |   |           | SS     | 2      | 6,12,20     | 32          |          | >4.5                      | 19.8                                      |   |
| 8                  |               |        | <b>Native Silty Clay</b><br>Brown, trace fine to medium gravel and<br>shale fragments, hard to very stiff.    |           | SS     | 3      | 7,16,25     | 41          |          | >4.5                      | 19.8                                      |   |
| 10                 |               |        |   |           | SS     | 4      | 7,14,21     | 35          |          | >4.5                      | 19.6                                      |   |
| 12                 |               |        |   |           |        |        |             |             |          |                           |   |   |
| 14                 |               |        |   |           |        |        |             |             |          |                           |   |   |
| 16                 |               |        |   |           | SS     | 5      | 8,11,15     | 26          |          | 4.5                       | 19.2                                      |   |
| 18                 |               |        |   |           |        |        |             |             |          |                           |   |   |
| 20                 |               |        |   |           |        |        |             |             |          |                           |   |   |
| 22                 | 106.50        |        | End of Borehole   |           | SS     | 6      | 4,10,14     | 24          |          | 3.5                       | 19.2                                      |   |
| 24                 |               |        |   |           |        |        |             |             |          |                           |   |   |
| 26                 |               |        |   |           |        |        |             |             |          |                           |   |   |
| 28                 |               |        |   |           |        |        |             |             |          |                           |   |   |
| 30                 |               |        |   |           |        |        |             |             |          |                           |   |   |
| 32                 |               |        |   |           |        |        |             |             |          |                           |   |   |

## NOTES:

- Borehole was advanced using solid stem auger equipment on April 7, 2014 to termination at a depth of 6.55 metres.
- Borehole was recorded as 'dry' upon completion of drilling and backfilled as per Ontario Regulation 903.
- Soil samples will be discarded after 3 months unless otherwise directed by our client.

Drill Method: Solid Stem Augers

SOIL-MAT ENGINEERS &amp; CONSULTANTS LTD.

Datum: Geodetic

Drill Date: April 7, 2014

130 Lancing Drive, Hamilton, ON L8W 3A1

Checked by: IS

Phone: (905) 318-7440 Fax: (905) 318-7455

Hole Size: 150mm

e-mail: info@soil-mat.on.ca

Sheet: 1 of 1

Project No: SM 145537-G

**Log of Borehole No. 3**

Project: 215 Pelham Road

Project Manager: Ian Shaw, P. Eng.

Location: St. Catharines, Ontario

Borehole Location: See Drawing No. 1

Client: Johnson Properties



| SUBSURFACE PROFILE |               |        |  |           | SAMPLE |        |             |             |          |                           | Moisture Content<br>w%<br>▲ 10 20 30 40 ▲ |   |
|--------------------|---------------|--------|--|-----------|--------|--------|-------------|-------------|----------|---------------------------|---|---|
| Depth              | Elevation [m] | Symbol | Description  | Well Data | Type   | Number | Blow Counts | Blows/300mm | Recovery | PP (kgf/cm <sup>2</sup> ) | U. Wt. (kN/m <sup>3</sup> )               | Standard Penetration Test<br>blows/300mm<br>● 20 40 60 80 ● |
| 0                  | 112.62        |        | Ground Surface   |           |        |        |             |             |          |                           |   |   |
| 0                  |               |        | <b>Topsoil</b><br>Approximately 100 millimetres of topsoil over,   |           |        |        |             |             |          |                           |   |   |
| 2                  |               |        | <b>Silty Clay Fill</b><br>Brown / Grey, with trace sand, fine gravel, and organic staining, firm.                            |           |        |        |             |             |          |                           |   |   |
| 6                  | 110.52        |        | <b>Native Silty Clay</b><br>Brown, becoming grey with depth, trace fine to coarse gravel and shale fragments, hard to stiff. |           | SS     | 1      | 3,5,6       | 11          |          | 1.25                      | 16.6                                      |   |
| 8                  |               |        |  |           |        |        |             |             |          |                           |   |   |
| 10                 |               |        |  |           | SS     | 2      | 12,20,22    | 42          |          | >4.5                      | 20.0                                      |   |
| 12                 |               |        |  |           |        |        |             |             |          |                           |   |   |
| 14                 |               |        |  |           | SS     | 3      | 12,20,26    | 46          |          | >4.5                      |   |   |
| 16                 |               |        |  |           |        |        |             |             |          |                           |   |   |
| 18                 |               |        |  |           |        |        |             |             |          |                           |   |   |
| 20                 |               |        |  |           | SS     | 4      | 9,11,12     | 23          |          | 3.5                       | 19.1                                      |   |
| 22                 |               |        |  |           |        |        |             |             |          |                           |   |   |
| 24                 |               |        |  |           |        |        |             |             |          |                           |   |   |
| 26                 |               |        |  |           | SS     | 5      | 6,9,12      | 21          |          | 2.75                      | 19.0                                      |   |
| 28                 |               |        |  |           |        |        |             |             |          |                           |   |   |
| 30                 |               |        |  |           | SS     | 6      | 5,8,12      | 20          |          | 2.5                       | 18.9                                      |   |
| 32                 |               |        |  |           |        |        |             |             |          |                           |   |   |

Drill Method: Solid Stem Augers

SOIL-MAT ENGINEERS &amp; CONSULTANTS LTD.

Datum: Geodetic

Drill Date: April 7, 2014

130 Lancing Drive, Hamilton, ON L8W 3A1  
Phone: (905) 318-7440 Fax: (905) 318-7455

Checked by: IS

Hole Size: 150mm

e-mail: info@soil-mat.on.ca

Sheet: 1 of 2

Project No: SM 145537-G

**Log of Borehole No. 3**

Project: 215 Pelham Road

Project Manager: Ian Shaw, P. Eng.

Location: St. Catharines, Ontario

Borehole Location: See Drawing No. 1

Client: Johnson Properties



| SUBSURFACE PROFILE |               |        |  |           | SAMPLE |        |             |             |          |              |               | Moisture Content<br>▲ 10 20 30 40 ▲<br>w%                   |  |     |      |
|--------------------|---------------|--------|--|-----------|--------|--------|-------------|-------------|----------|--------------|---------------|---|--|-----|------|
| Depth              | Elevation [m] | Symbol | Description  | Well Data | Type   | Number | Blow Counts | Blows/300mm | Recovery | PP (kgf/cm2) | U.Wt. (kN/m3) | Standard Penetration Test<br>● blows/300mm ●<br>20 40 60 80 |  |     |      |
| 34                 |               |        |  |           |        |        |             |             |          |              |               |   |  |     |      |
| 36                 |               |        |  |           | SS     | 7      | 5,7,10      | 17          |          | 1.75         |               |   |  |     |      |
| 38                 |               |        |  |           |        |        |             |             |          |              |               |   |  |     |      |
| 40                 | 12            |        |  |           |        |        |             |             |          |              |               |   |  |     |      |
| 42                 |               |        |  |           | SS     | 8      | 6,8,11      | 19          |          | 3.0          | 18.9          |   |  |     |      |
| 44                 |               |        |  |           |        |        |             |             |          |              |               |   |  |     |      |
| 46                 | 14            |        |  |           |        |        |             | SS          | 9        | 5,7,8        | 15            |   |  | 2.5 | 18.9 |
| 48                 |               |        |  |           |        |        |             |             |          |              |               |   |  |     |      |
| 50                 |               |        |  |           |        |        |             |             |          |              |               |   |  |     |      |
| 52                 | 96.92         |        |  |           |        |        |             | SS          | 10       | 3,4,7        | 11            |   |  |     |      |
| 54                 | 16            |        | End of Borehole  |           |        |        |             |             |          |              |               |   |  |     |      |
| 56                 |               |        | <p>NOTES:</p> <p>1. Borehole was advanced using solid stem auger equipment on April 7, 2014 to termination at a depth of 15.7 metres.</p> <p>2. Borehole was recorded as 'wet' at a depth of 7.0m upon completion of drilling and backfilled as per Ontario Regulation 903.</p> <p>3. Soil samples will be discarded after 3 months unless otherwise directed by our client.</p> |           |        |        |             |             |          |              |               |   |  |     |      |
| 58                 |               |        |  |           |        |        |             |             |          |              |               |   |  |     |      |
| 60                 | 18            |        |  |           |        |        |             |             |          |              |               |   |  |     |      |
| 62                 |               |        |  |           |        |        |             |             |          |              |               |   |  |     |      |
| 64                 |               |        |  |           |        |        |             |             |          |              |               |   |  |     |      |

Drill Method: Solid Stem Augers

SOIL-MAT ENGINEERS &amp; CONSULTANTS LTD.

Datum: Geodetic

Drill Date: April 7, 2014

130 Lancing Drive, Hamilton, ON L8W 3A1  
Phone: (905) 318-7440 Fax: (905) 318-7455

Checked by: IS

Hole Size: 150mm

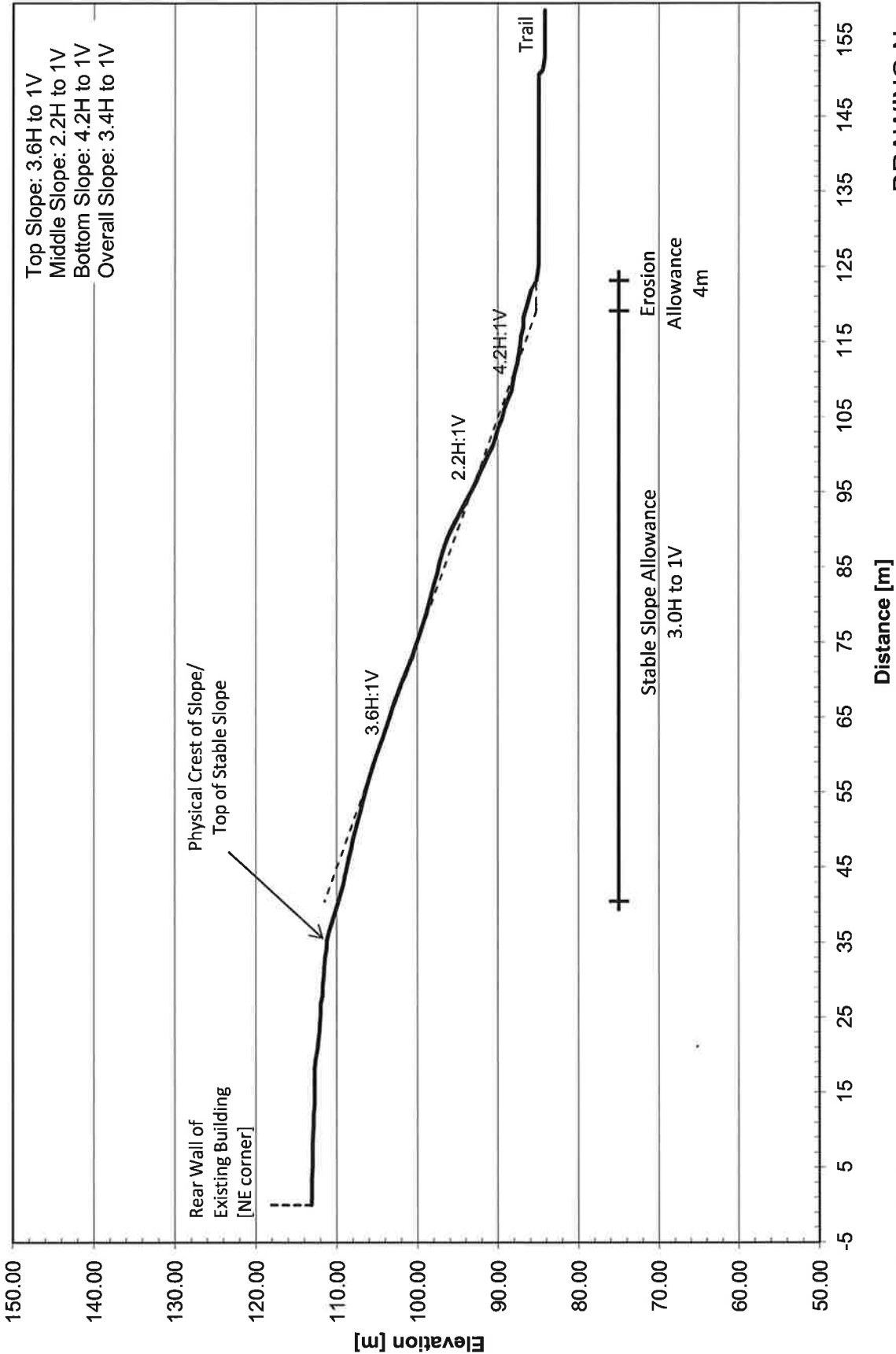
e-mail: info@soil-mat.on.ca

Sheet: 2 of 2



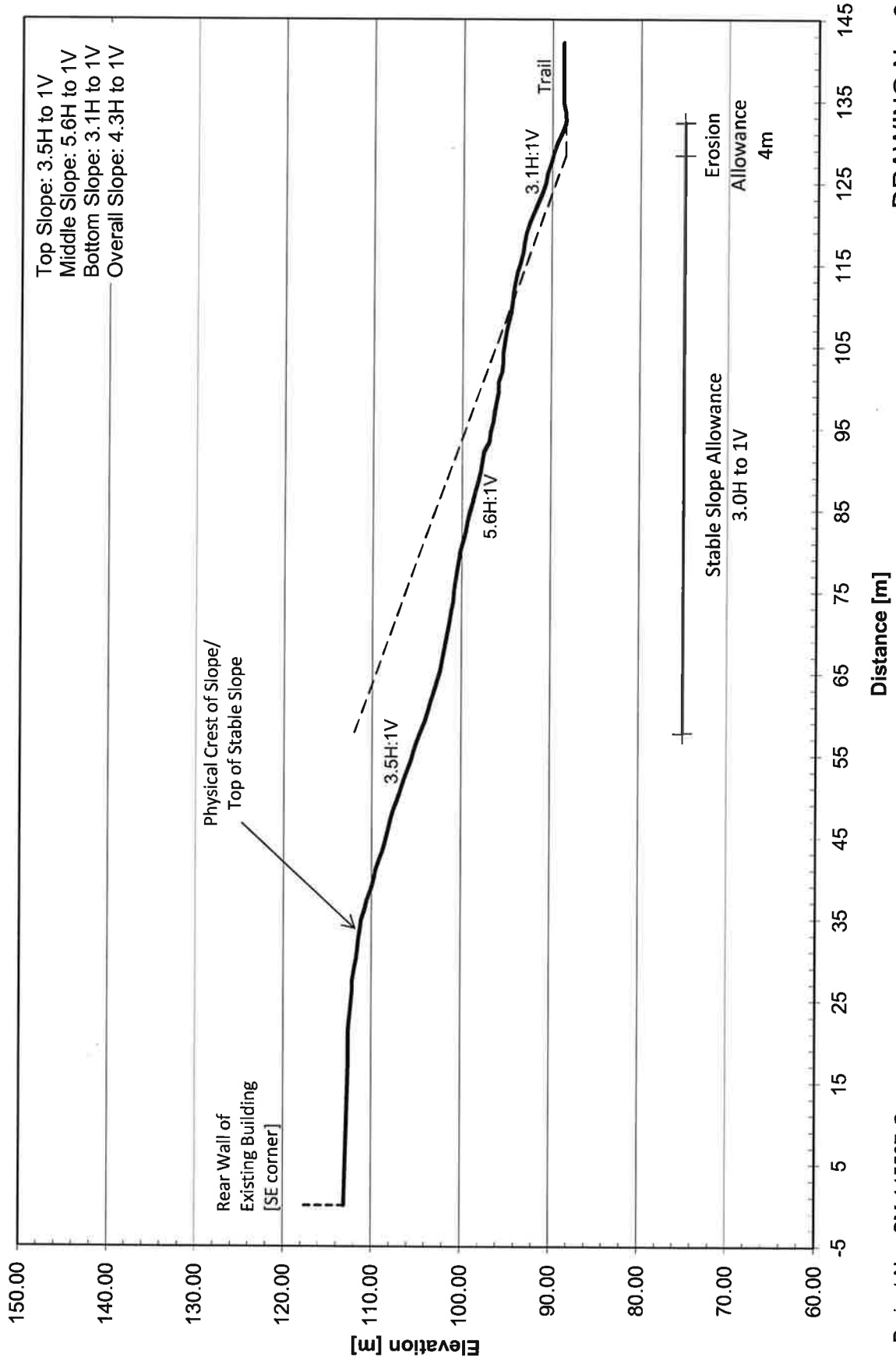


Slope Profile Section A-A  
215 Pelham Road, St. Catharines

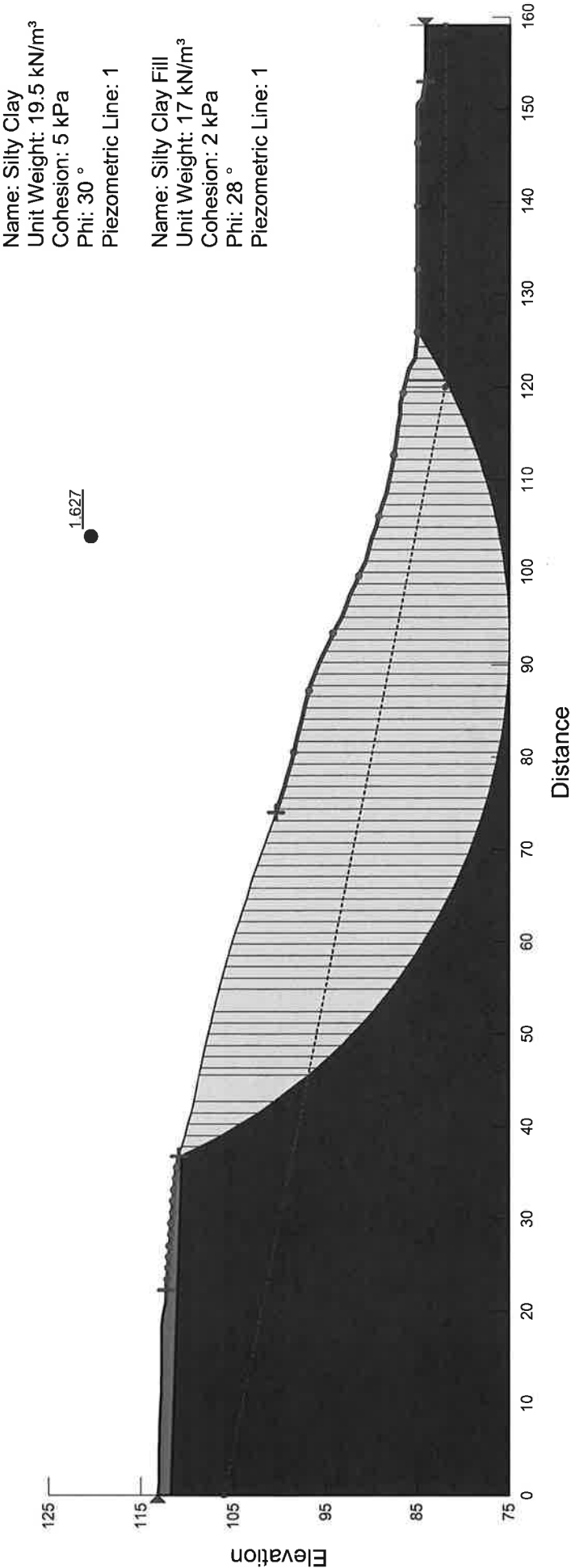




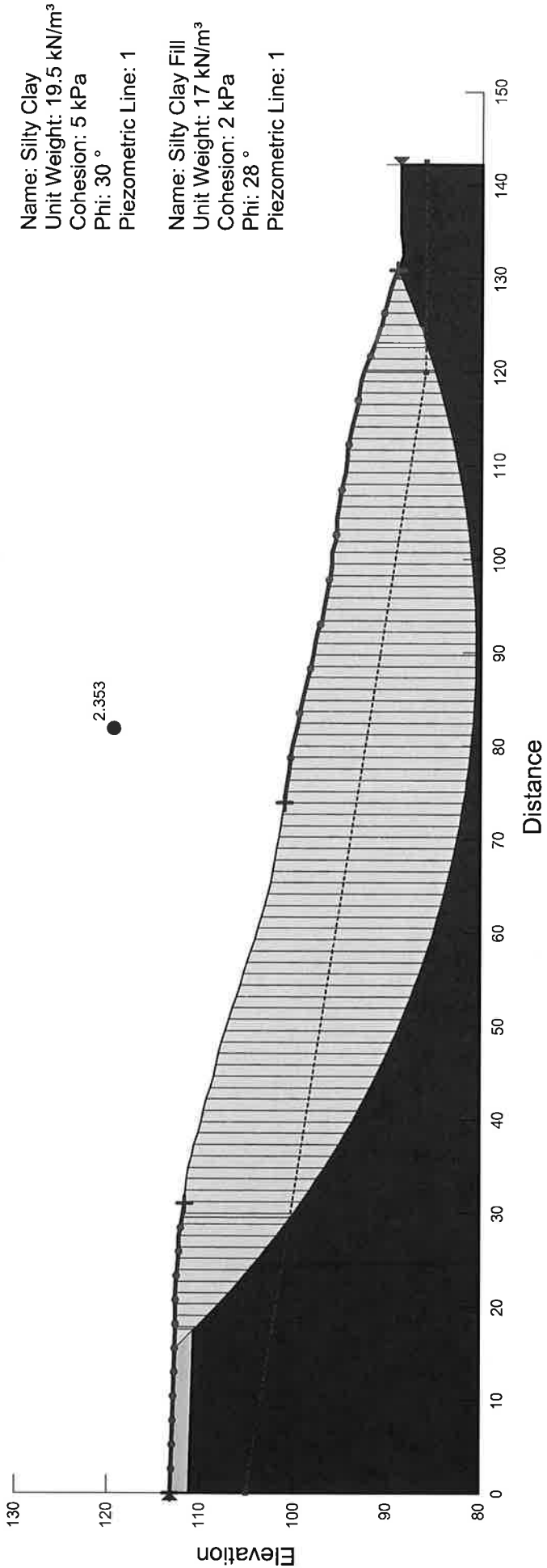
# Slope Profile Section B-B 215 Pelham Road, St. Catharines

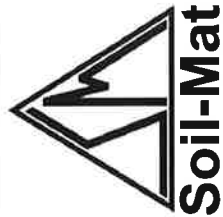
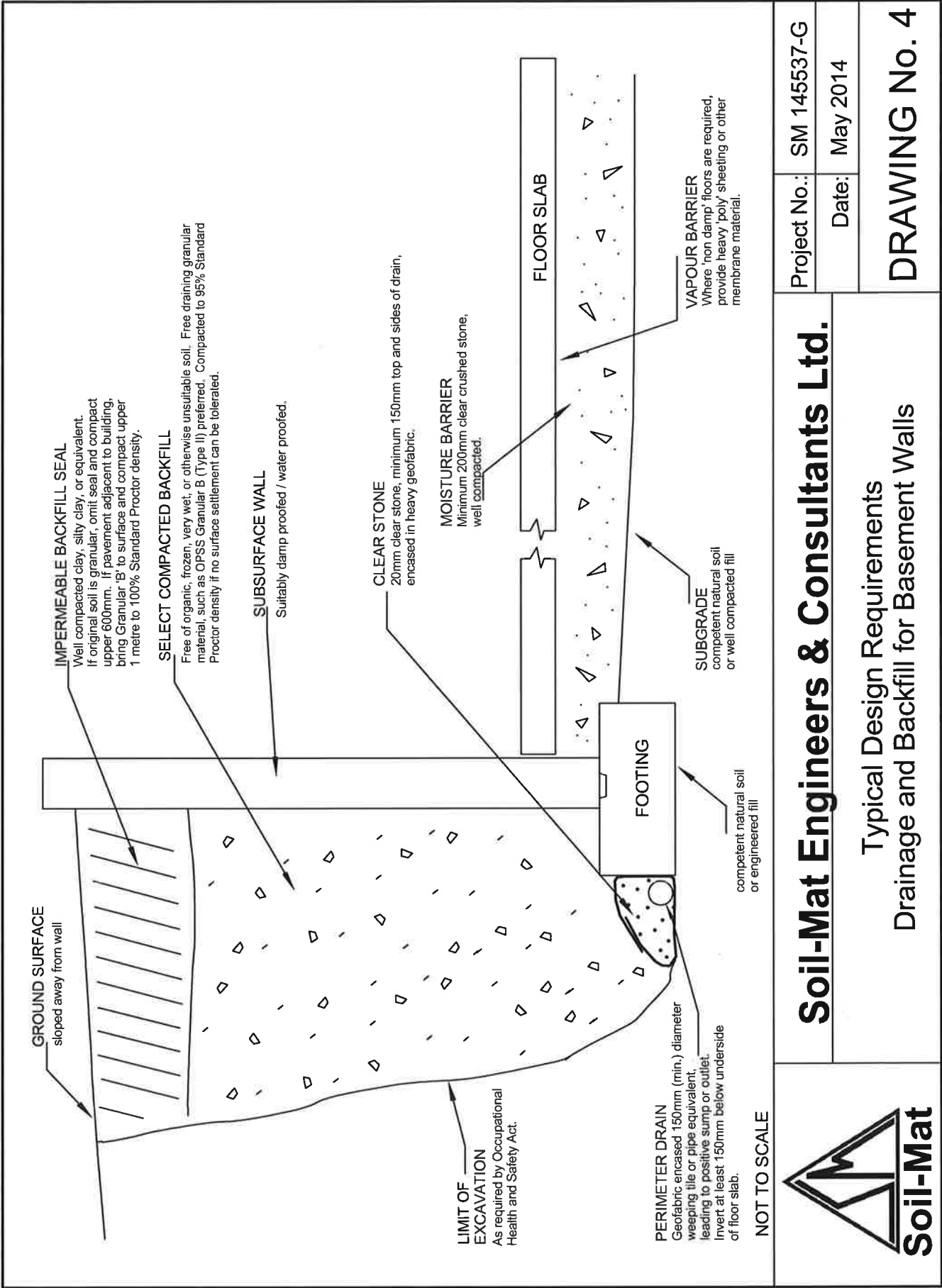


Slope Stability Assessment  
215 Pelham Road  
St. Catharines, Ontario  
Profile A-A



Slope Stability Assessment  
215 Pelham Road  
St. Catharines, Ontario  
Profile A-A





**Soil-Mat Engineers & Consultants Ltd.**

Typical Design Requirements  
Drainage and Backfill for Basement Walls

Project No.: SM 145537-G

Date: May 2014

**DRAWING No. 4**



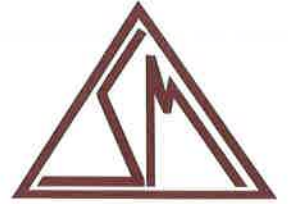


# SOIL-MAT ENGINEERS & CONSULTANTS LTD.

www.soil-mat.com info@soil-mat.on.ca TF: 800.243.1922

**Hamilton:** 130 Lancing Drive L8W 3A1 T: 905.318.7440 F: 905.318.7455

**Milton:** 20 - 348 Bronte Street South L9T 5B6 T: 905.875.3228 F: 905.875.4426



PROJECT NO.: SM 145537-G

October 8, 2015

JOHNSON PROPERTIES  
8 Hiscott Street, Unit 10  
St. Catharines, Ontario  
L2R 1C6

Attention: Scott Sweitzer

**SUPPLEMENTARY SLOPE STABILITY CONSIDERATIONS  
PROPOSED LOT REDEVELOPMENT  
215 PELHAM ROAD, ST. CATHARINES, ONTARIO**

Dear Mr. Sweitzer,

As requested, SOIL-MAT ENGINEERS has prepared this supplementary slope stability considerations report for the above noted project. These comments are intended to address concerns raised by the Niagara Peninsula Conservation Authority [NPCA], as discussed in our meeting at the NPCA offices on September 29, 2015, as well as subsequent discussion with the Mr. Jason Schooley of Upper Canada Consultants. In addition our office was provided with the current proposed site servicing and grading plan. These comments and recommendations are further to our geotechnical investigation and slope stability assessment report [SM 145537-G dated May 16, 2014] and should be read in conjunction with that original report.

We understand that it is proposed to redevelop the site with a new 3-storey residential building located towards the rear of the lot from the existing building, along with new asphalt paved parking areas. The building and parking lot locations are shown to have a 7.5 metre setback from the physical crest of the slope, which was established as the long-term top of stable slope in our referenced geotechnical report.

The property presently drains by surface flow, with no below grade storm sewer infrastructure, with surface water directed both west to the roadway and east over the slope. We understand that the City of St. Catharines has stated that there is no capacity within the municipal storm sewer infrastructure to accommodate storm water flows from the site. As such the site servicing has been designed to accommodate storm water surface flows into perimeter swales along the north and south limits, flowing to the east into a swale along the crest of the slope, and in turn sheet flowing over the slope. The site servicing plan also notes the provision of subdrains within the swales on the south and east, with a 300 millimetre wide French drain to direct the subdrain flows [i.e. not surface flows] to the slope.

PROJECT NO.: SM 145537-G

**SUPPLEMENTARY SLOPE STABILITY CONSIDERATIONS  
PROPOSED LOT REDEVELOPMENT  
215 PELHAM ROAD, ST. CATHARINES, ONTARIO**



The stability of the existing slope at the rear [east] of the property was assessed in our above referenced report. At this time the slope was noted to have overall inclinations ranging from approximately 3.4 to 4.3 horizontal to 1.0 vertical, and was heavily vegetated with grass and scrub vegetation, and young to mature trees. The slope was noted as stable in the short and long term, yielding minimum factors of safety on the order of 1.63 and greater. The site was revisited on the afternoon of September 29, 2015 and found to be in a similar stable condition as described in our initial report, well vegetated with no evidence of recent slope movements, failure scars, etc. A well-established walking trail was noted running along and down the subject slope. Scrub brush and cut vegetation was noted to be piled along much of the crest of the slope.

Based on the above, and our previous detailed slope stability assessment, it is our opinion that the proposed controlled flow of storm water over the slope will have negligible impact to the stability of the slope, with the slope remaining stable in the short and long-term. As such this approach would be considered suitable from a geotechnical point of view.

During construction care should be taken not to disturb the existing vegetation over the slope. Excavated material must not be placed downhill of the physical crest of the existing slope. In order to minimize any potential minor impact of the storm flows, such as localised surface erosion, it is recommended that suitable vegetation be re-established along the crest of the slope as part of the site grading and landscape works. It would be prudent to make use of available landscape geo-mesh or geofabric products to secure the surface of the slope temporarily to allow vegetation to establish.

The French drain is noted to be filled with 20-millimetre diameter clear stone. The clear stone should be encased in a heavy geofabric to prevent the intrusion of fines. The clear stone within the swale subdrains should be similarly encased in geofabric. The outlet of the French drain should be provided with a deposit of 100-200 millimetre 'rip rap' stone for a distance of perhaps 1.0 metre, transitioning to the existing well established vegetation [or re-established vegetation as above].

We trust that this supplementary geotechnical report is sufficient for your present requirements. Should you require any additional information or clarification as to the contents of this document, please do not hesitate to contact the undersigned.

Yours very truly,  
SOIL-MAT ENGINEERS & CONSULTANTS LTD.

Kyle Richardson, P.Eng.  
Project Engineer

Ian Shaw, P.Eng.  
Senior Engineer



Distribution: Johnson Properties [1, plus pdf]