- Key Message 1: THANK YOU for a CURRENT STOP on implementing SWM Fees and a Bylaw that support Stormwater Charge Adjustments
- Key Message 2: Support Cobourg goal in establishing SMW Fees in a fair, equitable, low-cost approach BUT with a balanced sustainable outlook AND recognize and potentially credit the current contribution of undeveloped landscape (rural farmland) and existing large green (low impact development) stormwater infrastructure (woodlands and wetlands).
- Key Message 3: Support the request to limit the annual SWM fees to \$200 (or even lower) on low density Residential properties greater than 1.5 acres.

Focus of my presentation to council is to pose the question of how proposed stormwater management fees might best affect properties defined as per current Town of Cobourg SWM Bylaw where property is defined as low density Residential (301 per MPAC) while currently part of the Cobourg East Community Plan (with no existing grey SWM infrastructure) while under the current Town of Cobourg Zoning RU2 & EC while recognizing the property by Northumberland County is primarily defined as a Natural Heritage System;

Essentially - Addressing my property (and others in the area) that are greater than 1.5 acres, not connected to existing municipal water and sewage or existing or planned grey stormwater management systems; that maybe contributing to limited runoff into roadside ditches and small culverts but mostly containing stormwater on existing property consisting of fields, woodlands and wetlands, creeks or ponds.

Essentially – "No Municipal fee burden" / properties being "nature based self-managed" with existing Green Stormwater Management features with limited impact posed by existing impermeable structures (roof tops and paved driveways). And homes that currently do not benefit from Town Municipal Water or Sanitary Service



THE CORPORATION OF THE TOWN OF COBOURG

BY-LAW NUMBER 048-2022

A BY-LAW TO ADOPT A STORMWATER MANAGEMENT SERVICES CHARGE BY THE TOWN OF COBOURG

Appreciate opportunities to reassess based on:

- Updates to MPAC assessment data for subject property
- Updates to Town's Zoning by law
- Updates to determining property Types or Runoff Coefficient
- Funding Needs

Understand that some "behind the scenes" corrections are being made (so some aspects discussed today may already be addressed)



Appendix B: Property Types and Runoff Coefficients

Property Type	Runoff Coefficient
Commercial	0.90
Industrial	0.80
Institutional	0.75
Agricultural/Vacant	0.20
Residential (Low Density)	0.45
Residential (Medium Density)	0.60
Residential (High Density)	0.75

https://www.cobourg.ca/en/our-government/resources/Legislative-Services/Bylaws-2022/048-2022-Adopt-Stormwater-Services-Charge.pdf

3. DETERMINING STORMWATER CHARGE

- 3.1 The following equation shall be used to determine the Stormwater Charge:
- 3.2 Stormwater Charge = Property Size (ha) x Runoff Coefficient x Property Type Stormwater Rate
- 3.5 Runoff Coefficient is determined by the Property Type's estimated impervious percentage. See Appendix B for the Runoff Coefficients of the Property Types.
- 3.6 The Property Type Stormwater Rate per hectare shall be set out annually by Council in the Stormwater Charge By-law.

4. STORMWATER CHARGE ADJUSTMENT

- 4.1 The Stormwater Charge may be revised in either of the following instances:
 - a) An adjustment may arise whereby the Municipal Property Assessment Corporation updates the subject property's assessment resulting from an Appeal.
 - b) An internal adjustment may arise whereby the Town revises, modifies, or amends the Stormwater Charge due to various factors, including:
 - updates to the Municipal Property Assessment Corporation's assessment data for the subject property;
 - updates to the Town's zoning by-law;
 - updates to the procedure determining a properties' Type or Runoff Coefficient
 - change in Stormwater Funding Requirement as approved by Council.

Appendix A: Appeal process for the Stormwater Charge

Category	Explanation	Appeal Mechanism	Appeal Decision Made by
Legal Exemption	The entity occupying the subject property area is or is not legally subject to municipal fees and charges.	An Appellant must file a Stormwater Charge Appeal	Treasurer or her/his delegate
Incorrect property size used to calculate charge	Property size used for calculation is or is not correct.	An Appellant must file a Stormwater Charge Appeal	Treasurer or her/his delegate

"It is not hard to see that flooding, whether it is as a result of spring freshet, urban flooding or high Great Lakes water levels, is having a growing effect on Ontarians and has reminded us that there is always room to improve." Doug McNeil Ontario's Special Advisor on Flooding 2019

Municipal
Stormwater
Systems - Role of
Nature Heritage
Systems

Fields, woodlands, wetlands, streams, rivers to lakes
All interconnected

PIN Marks:

- Our forever home
- Our property
- Our spot in Town
- We "Escaped" Whitby" in 2018



5.47 acre property: Birds Eye View

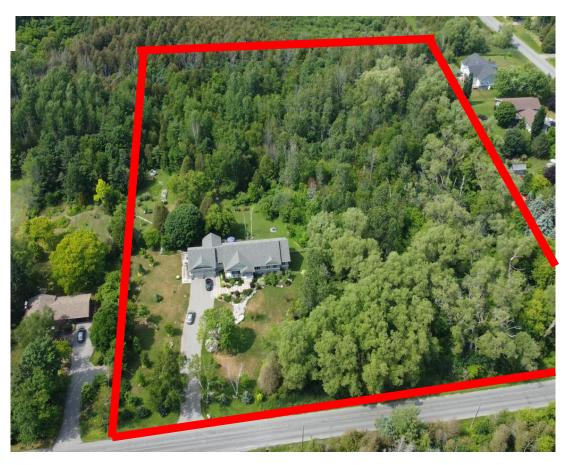
My Est - 25% Residential
My Est - 75% Natural Heritage System
(woodlands and wetlands)



Per: Cobourg GIS (2018 Scoop Air Photos



Existing Stewardship Project



Private Drone – June 2022 – looking north (note: heavily forested; wetlands hidden)



SWM Fee (per current formula) approx. \$2000 / year (per Cobourg Bylaw - low density residential - MPAC 301)

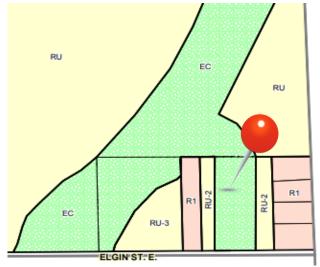
Private Drone – January 2022 – looking south (note: wetlands / creek flowing to Elgin Street East ditch and then through a small culvert under Elgin Street East

Cobourg Residential Taxpayer - 1032 Elgin Street East, Cobourg

Rural 2, Environmental Constrained; Special Overlay; Significant Woodlands, Enhancement Area; Unevaluated Wetland, Natural Heritage System;

Wetland, Watercourse

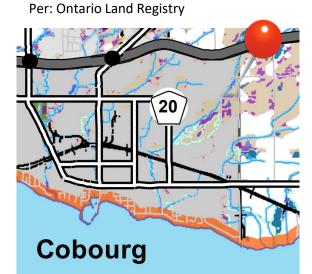




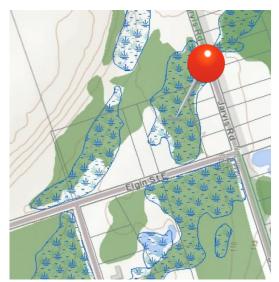
Per: Town of Cobourg – Zoning Map 12



Per: Cobourg East Community Secondary Plan Official Plan Amendment No 76



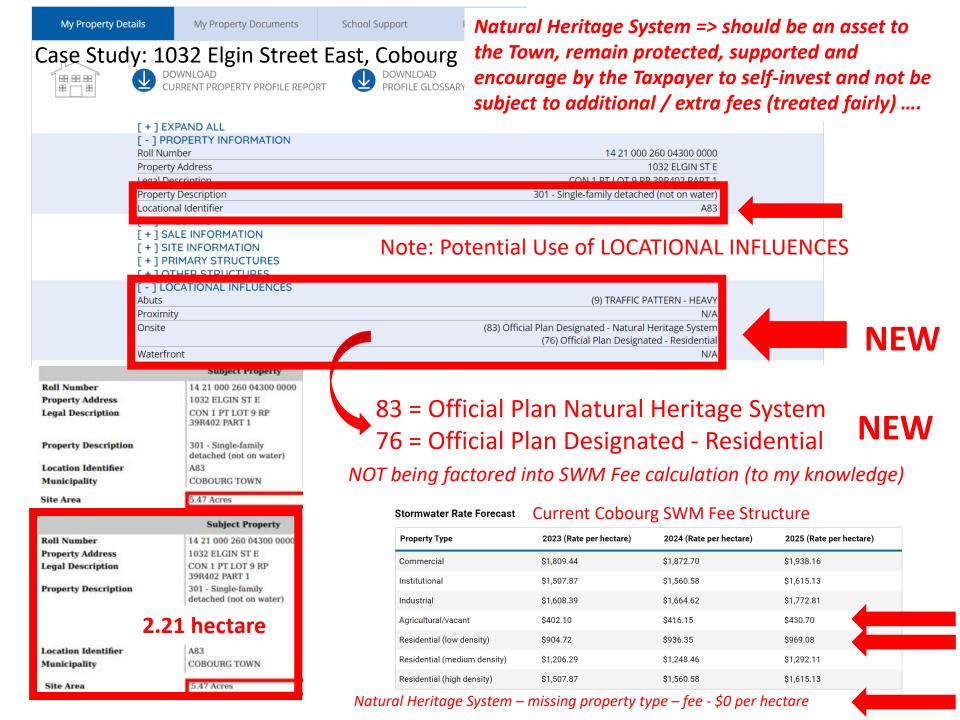
Per: Northumberland County Natural Heritage System Mapping



Per: Ontario Ministry of Natural Resources and Forestry



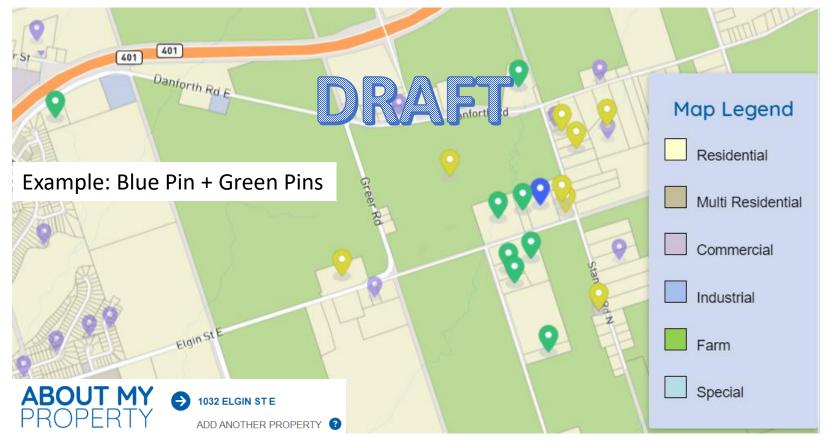
Per: Ganaraska Conservation Area



Residential Taxpayers:
I am not alone in my questions

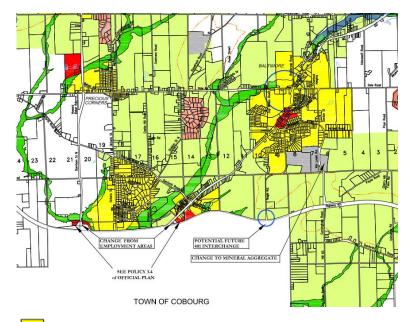
Cobourg East Community Secondary Plan (NO existing Storm Water Management Infrastructure) MPAC 301 Residential – Stormwater Fees

Nine "properties" (all over 1.5 Acres) = Total 28.28 Acres ...11.44 Hectare x 2024 Stormwater "Fee" = \$936.35 / Hectare = \$10,712



MPAC Property details would show under "Site Information": Water Service – Private Well and Sanitary Service – Septic Tank: Note landowner responsible to install, maintain and repair per existing regulations.

Hamilton Township **4553 Residential**Properties only pay SW charges through existing property taxes (budgeted needs) to cover risk assessed storm water management



Comparable Residential properties (MPAC 301) that sit in settlements areas, estate residential and rural (Schedule A "Land Use") are not subject to additional or separate SWM fees.

Note: approx. \$100,000 per year (through 2096) Note: 10 large

residential properties in Cobourg East Community would cover 10% of that annual expense.— Does this make sense? Seem equitable / fair?)

Local Assessment Base 2023 Assessment Data from MPAC

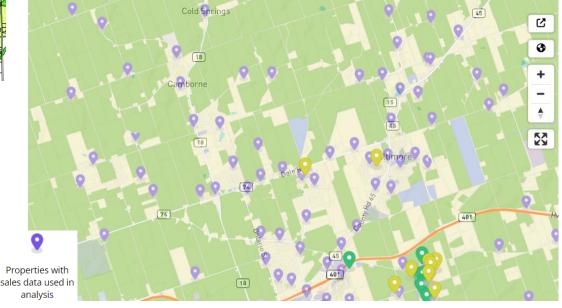




4.3.4 Forecasted Capital Requirements

Stormwater Network assets are forecasted to all require replacement at some point until 2096. This was determined based on each assets in-service date, and it's estimated useful life. Over this period, the average annual capital requirement is \$97,000. This represents the storm network's forecasted capital investment requirement on an average annual basis. This is detailed by asset segment as well in the table below.

Asset Segment	Average Annual Capital Requirement
Catch Basins	\$17,000
Storm Mains	\$64,000
Storm Manholes	\$15,000
Storm Structures	\$2,000
Total	\$97,000





Your property Properties you've

SETTLEMENT AREAS

EMPLOYMENT AREAS

ESTATE RESIDENTIAL

AGRICULTURE

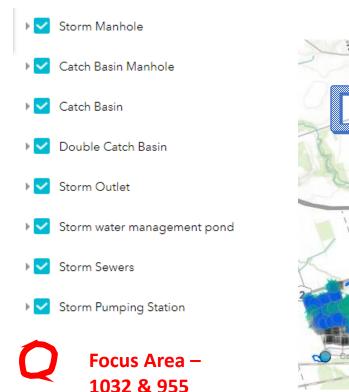


Properties in My Favourites

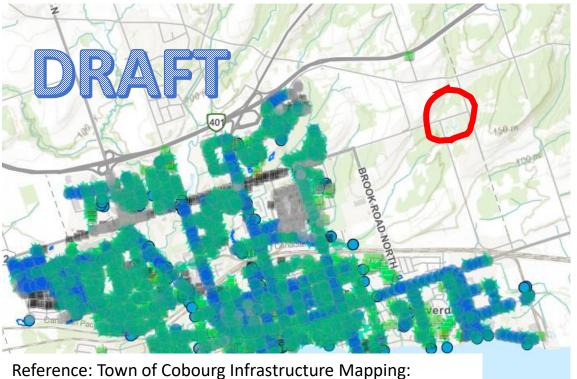
Natural Stormwater Management – Tale of Two Residential Properties

No recognition (credit) for Green Infrastructure (GI) - Woodlands, Wetlands and, Ponds contributing in the reduction to invest in additional gray storm water (i.e. keeping stormwater on existing properties – key objective)

Cobourg East Secondary Land Use - No existing stormwater elements (grey infrastructure)
No known plans to "add" in the next 5, 10, 15 or even 20 + years.....(beyond Cobourg Trails)



Elgin Street East



Note: No known plans to even include access to municipal water or sanitary treatment in the next 15 years + time frame (Reference: February 2023 Cobourg East Secondary Plan Servicing Class EA)

Natural Stormwater Management – Tale of Two Residential Properties

Grey Infrastructure Shown

▼ ✓ Storm Outlet

Storm water management pond

Woodlands, Wetlands and Ponds are key natural features in support of GI stormwater management

1032 &

955

Elgin

East

Street

Green Infrastructure (GI) Not recognized or

identified (examples)
Catch basins (most of the property)

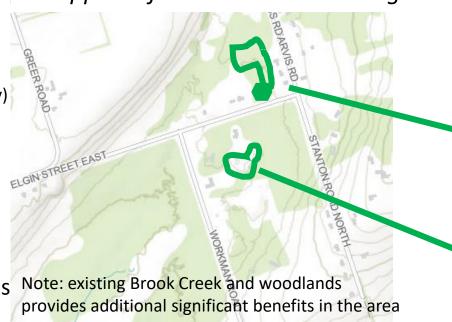
Storm Outlet

Storm Wa

Storm Water Management Pond

Woodlands / Wetlands

Note: Most stormwater enters properties from beyond Town of Cobourg boundary



Potential future enhancements areas, water course buffers and wetlands (not studied)

Tale of Two Properties

 216 Taxpayers - Cobourg Trails - Tribute Phase 1 - SWM Pond D and Urban Forest area – XX acres

> ZONING BY-LAW No. 85-2003

1 taxpayer - 1032 Elgin Street East –
 5.47 acres



203,784 Sq Meters

Note: Measurements are approximat



Both Zoned: RURAL and ENVIRONMENTAL CONSTRAINT...

But two different solutions with essentially same outcome (no excessive storm water flowing south of Elgin Street

Multiple residential taxpayers / final property owners versus one taxpayer / property owner

Tale of Two Properties – New versus Existing

Approx: 5.47 Acres – current fee approx. \$2000 / year

Residential = est. 25% of property (max)

22000 m2 x 0.25 =5500 m2 (approx. **1.37 acres** = 0.55 hectares)

(approx. \$500 per year @ \$900/hectare - max)

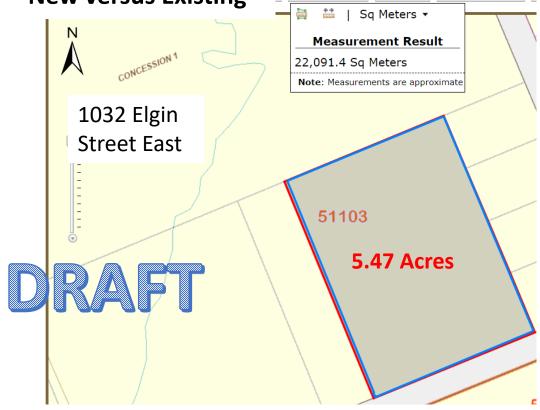
Natural Heritage System = Woodlands + Wetlands = est. 75% (minimum)

22000 m2 x 0.75 = 16600 m2 (**4.10 acres** = 1.66 hectares)

Assume 50% woodlands / 50 % wetlands = 8300 m2 (keep it simple)

APPROX = to Tribute SWM Pond (Grey Infrastructure) and 40% of the parcel of land being protected as "environmental constrained" (woodlands).

NOTE 100% of the water feature and tree feature can ever be subdivided (per zoning); never change drainage (per Drainage Act) and never cut down trees (multiple reasons – including keystone birds)



Tribute SWM Pond and Associated Green Space







Layers ▼

Go To LRO Map

Green Space - Woodlands Property

Tale of Two Properties – New versus Existing

"Soon to be owned" Town Grey SWM Infrastructure System With 216 RESIDENTIAL taxpayers also paying SWM fees... All new residential property owners will need to direct investment in its care and performance with future funds / maintain through SMW fees. (Would get included in the Cobourg SWM asset plans)









Tale of Two Properties – New versus Existing

Residential Property – **Cobourg East** Community

Green Low Impact Development Storm Water Management -100% Nature Based Property owner involved, committed and currently selffunded.







Roadside Ditch - Catchment

All storm water run-off from 25% of property (home, paved driveway, field) stays on property (per survey, building permits and final inspection) and does not "feed" roadside ditch across maintained portion of the frontage) – 75% wetland and forested property does not feed into any grey SWM system Planted over 1000 native trees

Fully prepared to contribute as a residential Property Owner on the land that contributes to what needs to be maintained and what needs to be protected – fair / equitable

Example: Grey versus Green – Storm Water Management System along a small stretch of Elgin Street East

Lots of observation photos of the woodlands and wetland and recent SWM runoff video ...







In Conclusion (from 1 Existing Taxpayer):

 Support SWM fees for Cobourg Residential properties but it needs Natural Heritage System recognition (reduction in fee / credit) with a much more reasonable residential SWM fee attached to the subject property (per MPAC, Zoning, property Types, etc.).

Important to fundamentally protect all upstream rural, wetlands and woodlands as key in needing less downstream grey SWM

expenses in the future.

Thank You for Listening and telling me represent some unheard voices.









Unheard voices dependent on woodlands and wetlands

- We explored, we studied, we saw, we invested, we moved. We plan to stay! Remain committed to enjoying our space and place within the overall community
- We are now also temporary land custodians plan to continue to work hard to further protect the land while leaving nature alone as much as we can
- If you know of any wildlife looking for a place to visit or stay look on the Welcome to Cobourg's visitors map (under picture of Victoria Hall). You may not see us, hear us or be around but we know they will find us and can enter without paying a special fee (free!).

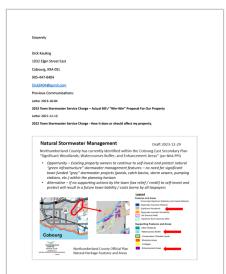
Backup Materials – not part of Presentation / Reference and additional supporting information

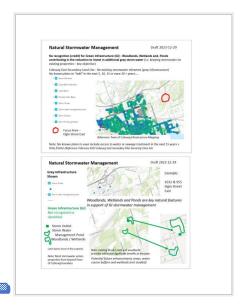


To Laurie Wills 2023-12-29

Director Public Works, The Corporation of the Town of Cobourg









To Laurie Wills 2023-10-10

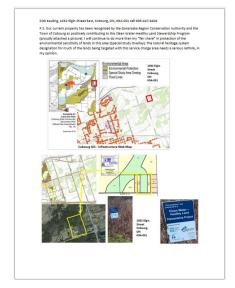
To Laurie Wills 2023-10-04





To: Laurie Wills 2022-12-13







Open for feedback, speaking as one voice and for some others that may not be seen or heard. THANK YOU!

January 1, 1998, to January 1, 2024 =>>> 26 years ago something happened — Who can remember, who was watching from a far?? What does it look like TODAY

Time Marches on natural processes continue: Still rains, water still runs downhill as the natural water cycle determines where it ends up until such time as development impacts the landscape and all watershed users are impacted some more some less.

- Essentially rural property folded into the Towns boundary
- Today Mix of residential, rural and environmental constrained parcels of land.
- Tomorrow more residential properties with SWM Fees
- Future Progress, fair, equitable, sustainable



Cobourg to grow by half on Jan. 1,1997

Annexation deal gives Town land, Hamilton Township almost \$500,000

The Town of Cobourg will grow by more than 50 per cent Jan. 1, 1997.

Cobourg and Hamilton Township have agreed to a deal which would see the Town acquire 1,673 acres from the Township. Cobourg currently has 3,830 acres.

Cobourg Mayor Joan Chalovich said the agreement now allows both municipalities to get on with creating jobs. "Hopefully this makes us more competitive," she said after an in-camera session Monday night to complete the deal.

As Cobourg councillors were meeting behind closed doors, Hamilton Township councillors held a special meeting waiting to hear if the deal would be approved.

At least three times, Cobourg's Chief Administrative Officer, Bryan Baxter, was on the phone to his counterpart in Hamilton, fine-tuning the deal.

In return for the land, Cobourg has agreed to pay Hamilton \$479,115 in compensation for loss of residential and commercial tax revenue and loss of provincial grant money over the next 10 years. That money is due in three years, with the first payment totalling \$359,115.

Mayor Chalovich said the money could be raised without increasing taxes for Cobourg residents by debenturing the cost or using money from the increased assessment and growth which should accompany the new land. Cobourg will pay \$100,000 of the total amount from its sewer reserve fund.

Cobourg's new boundaries will be similar to those both sides agreed to last January when it was first announced an agreement had been reached.

The western boundary south of Hwy. 2 will include the New Amherst development beside Northumberland Mall; the western boundary between Hwy. 2 and Hwy. 401 is the extension of Rogers Road; the easterly boundary south of Hwy. 2 would remain Normar Road; the eastern boundary between Hwy. 2 and Hwy. 401 would be the Stanton Road, Jarvis Road extension and the northern boundary would be the north side of Hwy. 401.

Both sides have also agreed to buffer areas which would prohibit new urban development. To the west the buffer zone would be the Bob Carr/Apple Orchards Road and to the east the area between Stanton Road and Cunningham Roads.

Mayor Chalovich said there are four items still to be resolved such as development pressures for the area north of Hwy. 401 and the Town's appeal to the Ontario Municipal Board of the Township's Official Plan, but she expects those to be resolved soon.

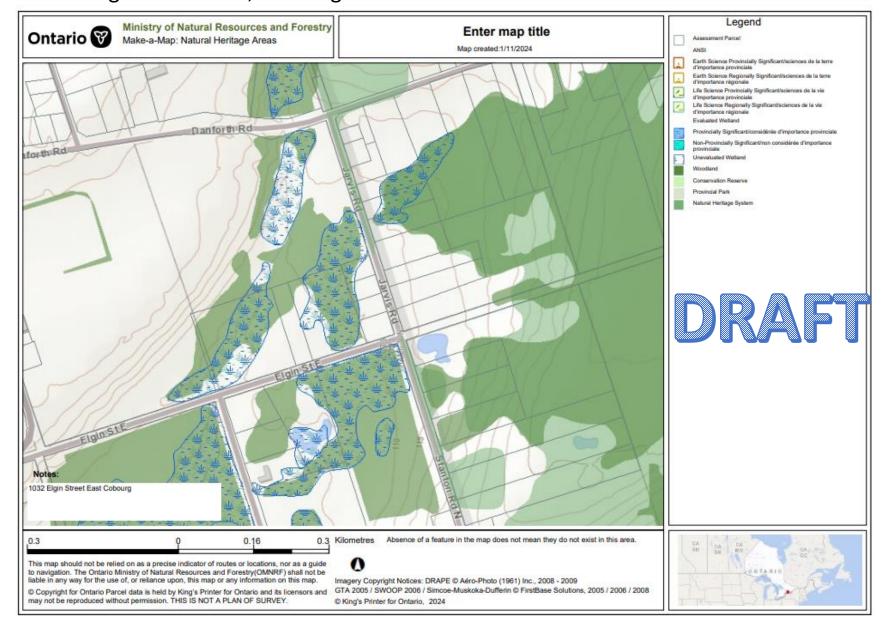
"Hopefully there will be enough goodwill from both councils to complete the agreement," she said.

Hamilton Township Reeve, Charlotte Clay-Ireland said her Township dealt with the "situation the best way we could.

"Cobourg has enough land now to grow. They got the land they wanted control over such as New Amherst and Strathy Road."

She said the compensation package is a good deal for the Township because had an agreement not been reached, the Province would have come in and set up a commission to establish the new boundaries. That commission, she said, would have cost \$200,000 and been paid for by both municipalities.

Ontario Ministry of Natural Resources and Forestry – Natural Heritage Areas – 1032 Elgin Street East, Cobourg Area



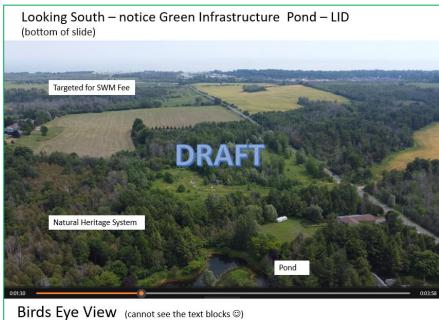
Reference: Areal Views from 1032 Elgin Street East, Cobourg

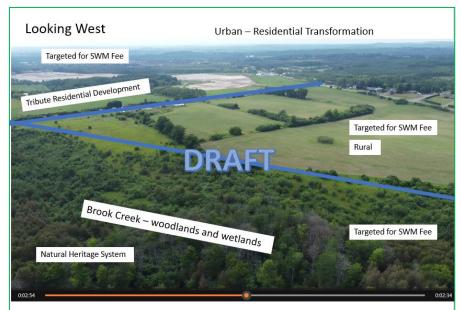




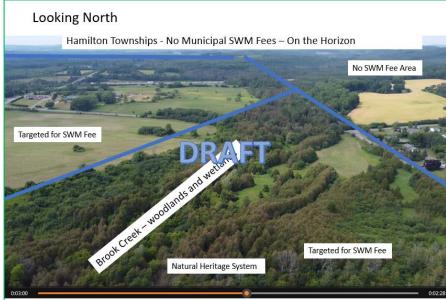
Birds Eye View (cannot see the text blocks ©)



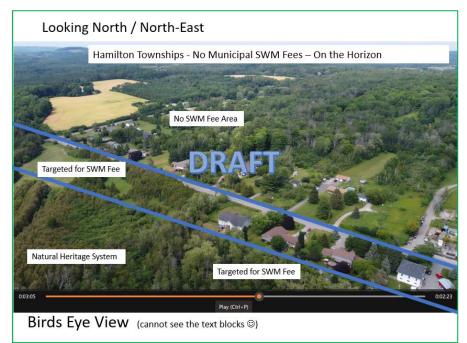




Birds Eye View (cannot see the text blocks ©)



Birds Eye View (cannot see the text blocks ©)





Example Stormwater Fees – MPAC 301 Residential





NOTE: Some properties Cobourg Zoned: Rural 2 and Environmental Constraint

	Subject Property	Property #1	Property #2	Property #3	Property #4
Roll Number	14 21 000 260 04300 0000	14 21 000 260 02400 0000	14 21 000 260 04100 0000	14 21 000 260 04200 0000	14 21 000 260 04400 0000
Property Address	1032 ELGIN ST E	9214 DANFORTH RD	986 ELGIN ST E	1020 ELGIN ST E	995 ELGIN ST E
Legal Description	CON 1 PT LOT 9 RP 39R402 PART 1			CON 1 PT LOT 9	CON A PT LOT 9 RP 39R1362 PART 1
Property Description	n 301 - Single-family detached (not on water)			301 - Single-family detached (not on water)	
Location Identifier	A83	A83	A83	A83	A83
Municipality	icipality COBOURG TOWN		COBOURG TOWN	COBOURG TOWN	COBOURG TOWN
Site Area	5.47 Acres	5.77 Acres	7.94 Acres	1.5 Acres	5.23 Acres
	Subject Property	Property #5	Property #6	Property #7	Property #8
Roll Number	14 21 000 260 04300 0000	14 21 000 260 04600 0000	14 21 000 260 04700 0000	14 21 000 260 04850 0000	14 21 000 260 06900 0000
Property Address	1032 ELGIN ST E	1947 WORKMAN RD	1931 WORKMAN RD	1859 WORKMAN RD	8817 DANFORTH RD
Legal Description	CON 1 PT LOT 9 RP 39R402 PART 1	CON A PT LOT 9 RP 39R1362 PART 3	CON A PT LOT 9 RP 39R1362 PART 4	CON A PT LOT 9 RP 39R10210 PART 1	CON 1 PT LOT 13
Property Description	301 - Single-family detached (not on water)	301 - Single-family detached (not on water)	302 - More than one structure used for residential purposes with at least one of the structures occupied permanently	301 - Single-family detached (not on water)	301 - Single-family detached (not on water)
Location Identifier	A83	A83	A83	A83	A83
Municipality	COBOURG TOWN	COBOURG TOWN	COBOURG TOWN	COBOURG TOWN	COBOURG TOWN
Site Area	5.47 Acres	1.95 Acres	1.95 Acres	2.33 Acres	2.61 Acres

Nine "properties" (all over 1.5 Acres) = Total 28.28 Acres ...11.44 Hectare x 2024 Stormwater "Fee" = \$936.35 / Hectare = \$10,712

CONNECTED - Municipal Road Class network:

- Roadside allowance ditches and under roadway culverts – total km – TBD(?)
- Risk hazard assessment, monitoring and maintenance - likely low priority due to current state – addressing field reports and observations(?)

NOT CONNECTED - existing Municipal:

- Storm Water Management System
- Water Distribution System
- Wastewater Collection System

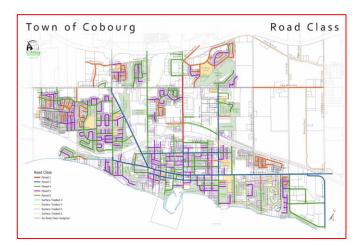


INVOLVED / REGULATED / SELF FUNDED:

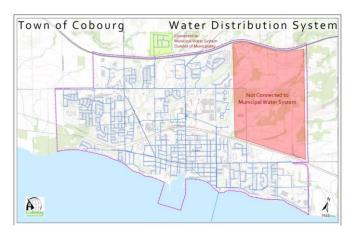
- Accessible and Potable drinking water Regulations
- Septic System Regulations

Private Wells / Septic Systems - Property Owner Priority

- independent unlike most Town property owner / taxpayers
- After tax incremental expenses design, installation, maintenance, upkeep and lifecycle upgrades / replacement
- Waiting the "long game" hope for future benefit from tax supported investments (low probability in my opinion)
- Surprised /alarmed / concerned about a disproportionate SWM FEE expected through our electricity service provider and looking to consider an alternative equity-based method fee (if any at all) given current state of SWM assessed in this area and lack of upstream (outside of urban boundary requirements, risks or needs).







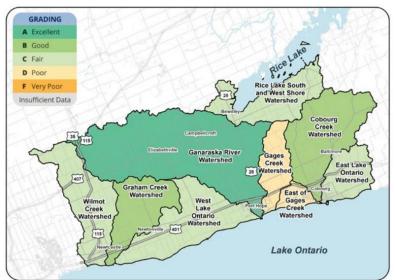
Cobourg East Community - essentially dependant on health of the East Lake Ontario Watershed – reported C FAIR for forest condition, surface water quality and groundwater quality – NOT FOCUSED on SWM

A watershed is an area of land drained by a creek or stream into a river which then drains into a body of water such as a lake or pond. Everything in a watershed is connected. Our actions upstream can affect conditions downstream

Ontario's Conservation Authorities report on watershed conditions every five years. The watershed report cards use Conservation Ontario guidelines and standards developed by Conservation Authorities and their partners.

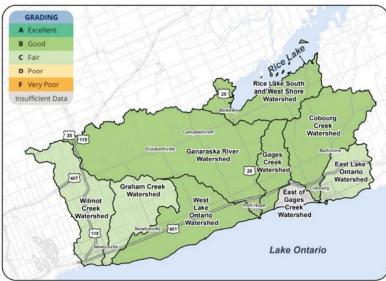




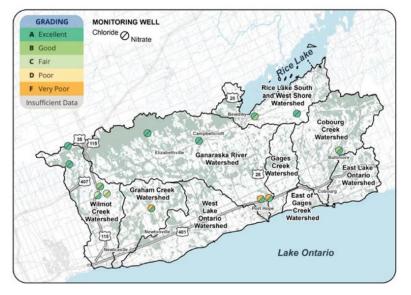


Per: Ganaraska Region Watershed Report 2023







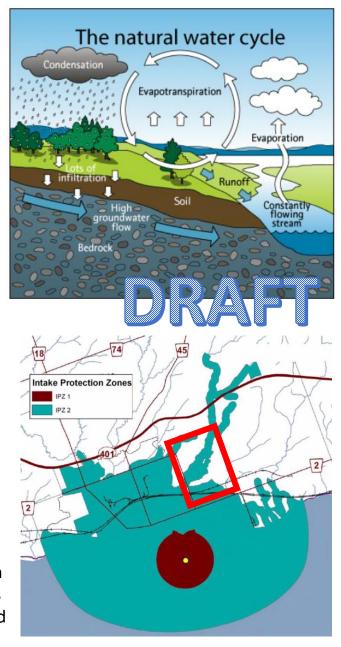


REGULATED / INVOLVED / DEPENDANT

- Water Intake Protection System (IPZ 2) -Municipal Water Supply
- Drainage Act
 (regulates drainage
 impact and strategies
 to mitigate harm to
 neighbouring
 properties –
 upstream or
 downstream)
- Brook Creek currently does not have pre / post development flow criteria

Contain stormwater in support of the existing regulations, assess, plan and protect against predicted increased rain intensity and frequency of peak events

Primary factors / controls: topography, subsoil, vegetation and existing Woodlands, Ponds and Wetlands – some identified as part of NATURAL HERTIAGE SYSTEM AND LAND USE



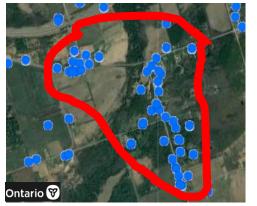
BROOK CREEK SYSTEM



Watersheds where post-development flows must be less than pre-development

Storm Water - Hazards Risk Assessment - Brook Creek

- Master Drain Plan for Brook Creek Currently assessed as "middle of the pack" priority (risk, cost) per Ganaraska Region Conservation Area
- Detailed flood mapping, urban development would drive "study" (need for more flood mapping, detailed Natural Heritage System boundaries and protections) and future SWM needs (ponds, mains, etc.)
- Current status quo with no SWM detailed studies should not drive identification of significant SWM fees





Source: Ontario - Private Wells

Floodplain Study

DRAFT

Ranking Used to Identify Priorities

- Each watercourse was reviewed and ranked for age of hydrology and hydraulic models, age of mapping, and risk levels
- Hydrology, hydraulics, and mapping were each given a score from 1 to 4
- · 1 being current and accurate
- 4 indicating no models or digital maps
- Hazard level was also given a score from 1 to 4
- 1 being low risk
- 4 being high risk

All of the components were combined using the formula:

Score = (Hydrology + Hydraulics + Mapping) * Hazard Level

ACT FOR CLEAN WATER

TA

Intake Protection Zones

IPZ 1

IPZ 2

Cobourg

Drinking Water

- Significant drinking water threats are only possible when identified through an event-based modelling approach (done?)
- Current existing significant drinking water threats include the activities of a spill from an oil pipeline that crosses a stream
- Mitigated through risk management, emergency preparedness and sound operational practices (need to understand?)
- Current performance, ongoing assessments, addressing "features", maintenance and repairs and replacements (future study?)

Watercourse Prioritization Matrix





Floodplain Studies by Date

Reference: Ganaraska Region Conservation Authority – Minutes of Board of Directors (October 19, 2023)

- Wilmot/Graham Creek Floodplain Mapping Update Study (extract from presentation)

Tale of Two Properties – Example Tribute Development

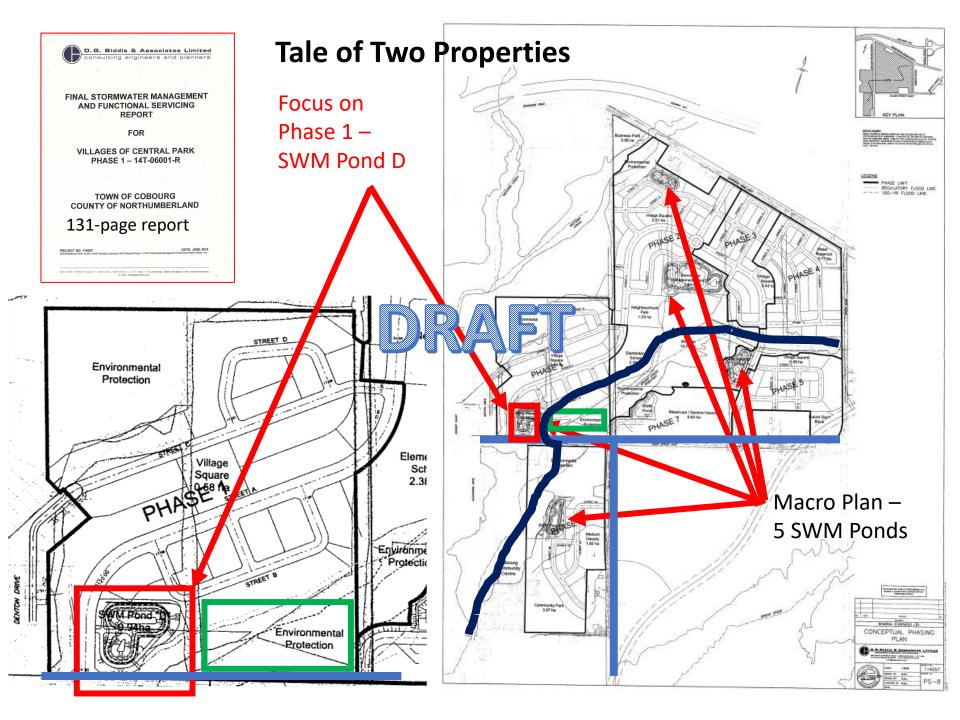
Large rural and environmental constrained property turned into future residential community





Elgin Street Looking North (near new SWM Pond D)



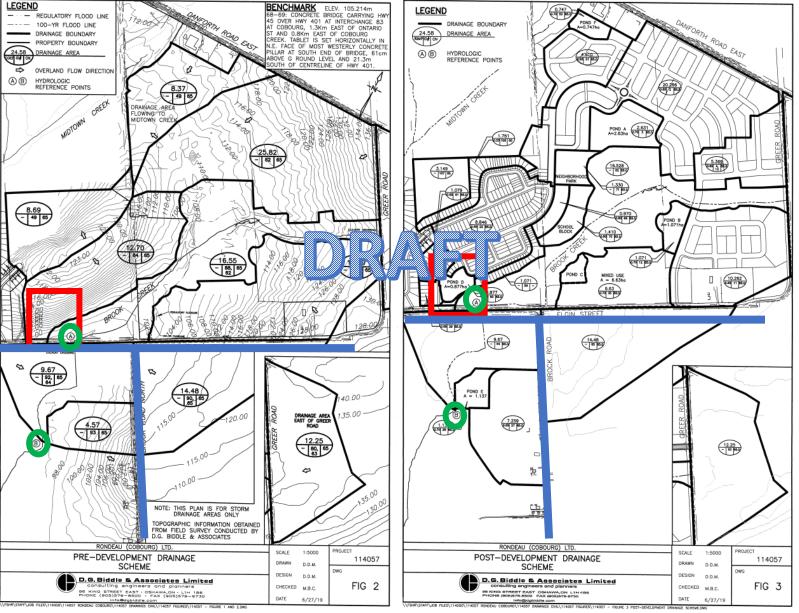


Pre-Development Drainage Scheme

Zoned - Rural and Environmental Constrained

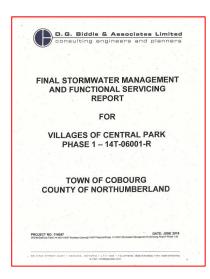
Post-Development Drainage Scheme

Zoned – Residential and Grey SWM System



Reference: Pond D and Hydrologic Refence Points A and B

Design / **Performance** Intent: **New Grey SWM System** Drainage = Original Green Landscape Drainage



PERMANENT STORMWATER QUALITY CONTROLS

As previously mentioned, a Stormwater Management Pond is proposed to provide quality, erosion and quantity controls at the end of the proposed storm sewer system as required by Ganaraska Region Conservation Authority's Technical and Engineering Guidelines for Stormwater Management Submissions.

Enhanced detention wet ponds have been selected as the end of pipe facility to provide water quality control for the development. Engineering drawings illustrating the details of the Stormwater Management Facility D are provided on Drawing 114057 C-12, C-13, and C-14,

The minor storm sewer drainage area tributary to the pond is 11.417ha, including the pond block. This tributary mainly consist of low density and medium density residential lots and park and school blocks. According to the GRCA guidelines, low and medium density residential lots should have an impervious level of 60% and 75% respectively. A conservative average imperviousness of 65% was used in sizing the facility. Supporting calculations are attached in Schedule 3. Quality control volume requirements for Level 1 Enhanced fisheries protection were extracted from the Stormwater Management Practices Planning and Design Manual (MOEE, March 2003). Given the above information, the permanent and active (fluctuating) water quality storage requirements are tabulated below:

5.1 Extended Detention Wet Pond Design Characteristics - Pond D

The proposed design for the wet pond, shown on drawing 114057 C-12, has the following characteristics:

- 7:1 side slopes above active (fluctuating) water surface elevation;
- · 4:1 side slopes below permanent pool water surface elevation;
- 6:1 bench at permanent pool water surface elevation;
- 3:1 side slopes above the 100year water surface elevation;
- 102.25m permanent pool elevation;
- 1.75m permanent pool depth;
- · 2287m3 permanent volume provided;
- 0.75m water surface fluctuation;
- 103.00m maximum water quality fluctuating elevation;
- 2221m³ water quality fluctuating volume provided;
- sediment forebay at inlet location;
- detention time between 24-48 hours;
- 4.0m maintenance access:
- · 103.75m maximum 100-year water surface elevation;
- 5484m³ maximum fluctuating volume provided;

The pond discharges to Brook Creek tributary via a proposed 600mm storm sewer outfall and outfall channel. Given the above characteristics, the proposed stormwater management pond will provide the permanent and fluctuating volumes required to obtain Level 1 fisheries habitat protection in addition to minimizing downstream

Trust the best that engineering has as its tools (that most current and future taxpayers cannot hope to unpack) and where natural forces will overshadow in time. Natural Heritage Systems are part of the overall balance needed.

RETURN DEVEL PERIOD FLOW	PRE- DEVELOPMENT FLOW @ POINT	ROUTED POST-DEVELOPMENT FLOW @ POINT A (m³/s)				PRE- DEVELOPMENT FLOW @ POINT	ROUTED POST- DEVELOPMENT FLOW @ POINT
years	A (m³/s)	¹UNCONTRO- LLED FLOW (m³/s)	POND D DISCHARGE (m³/s)	WSE (m)	² TOTAL (m ³ /s)	B (m³/s)	(m³/s)
2	0.534	0.348	0.029	103.00	0.503	0.702	0.545
5	1.037	0.456	0.256	103.10	1.002	1.365	1.209
10	1.368	0.612	0.380	103.20	1.377	1.797	1.608
25	2.484	0.974	0.528	103.40	2.313	3.259	2.684
50	3.321	1.032	0.555	103.50	2.762	4.382	3.286
100	4.420	1.799	0.579	103.75	4.024	5.746	4.328

Pertains only to uncontrolled flows from Phase 1 to Brook Creek - VH Nodes 26 + 74. ² Pertains to total flows from Parent Subdivision draining to Hydraulic Point A.

As reported above, all post development flows up to and including the 100-year return frequency, will be effectively be attenuated to the pre-development levels for the Brook Creek watershed. Therefore, no adverse impact to the downstream drainage

system is anticipated.

- On-site storm sewers have been sized to accommodate a 5-year return frequency post-development event as per Town of Cobourg and GRCA Design Criteria:
- The implementation of a Stormwater Management Facility (Pond D) will provide Level 1 Enhanced quality control for Brook Creek in addition to providing cooling of urban stormwater discharges;
- The detention of runoff from a 25mm storm event for 24 to 48 hours will minimize further erosion of the receiving watercourse;
- The Stormwater Management Pond allows for all storm events, up to and including the 100-year return frequency, to be attenuated to pre-development flows at the outfall to the existing tributary of Brook Creek:

Many NEW Property Owners (could not easily estimate how many taxpayers) will be paying RESIDENTIAL STORM WATER FEES in support of Cobourg and Town's overall SWM system ownership, ongoing assessments, maintenance and repairs.

Pileated Woodpecker – Shared Property Owners

Reference: 1032 Elgin Street East, Cobourg

KEYSTONE SPECIES (Housing Specialist) - same as Beaver (considered a SWM specialist):

- Does not understand potential expropriation and eviction
- Natural Heritage Housing Stock increasing (no official plans for sales or subdivision needed) – supports Natures Growth Plan
- Tree-Based Housing Cannot just sell, destroy, and repurpose existing without Cobourg planning, zoning, bylaw compliance
- Empty Homes suitable for immediate Rental and New Tenants support over 30 additional species (Immigration/Migration)
- Nesting Cavity Demolition Permit only if homes shown to be abandoned for 3 years can dead trees be removed
- Natural Residential / Housing Stock GIS mapping (not YET!)

Bottom line:

- Town of Coburg Environmental Constraint Zoning Relevant (yes)
- Special Study Area Overlay Applied (support yes)
- Natural Heritage System Designation REAL (great news! even if no MPAC recognition - yet?)
- Woodlands and Wetlands (under assessed and valued today)
- Future additional land Protection and Conservation (understudy)
- Ongoing Stewardship with Green LID and Storm Water Management (my long-term commitment)
- Future investments (by income supported landowner) may become net Town of Cobourg SWM fees

Welcomed => heard, seen, housed and equitably taxed to stay



Source: Nature Canada



Source: Ontario ISA (International Society of Arboriculture)

Other observed species – bear cub, large owl, multiple deer, fox, coyotes, and lots of different birds

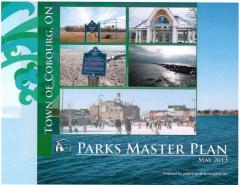
Nature's Request (not posted): Please do not disturb, no charge for admission or use. Please no SMW disproportionate fees .Visitors welcomed by appointment. :)

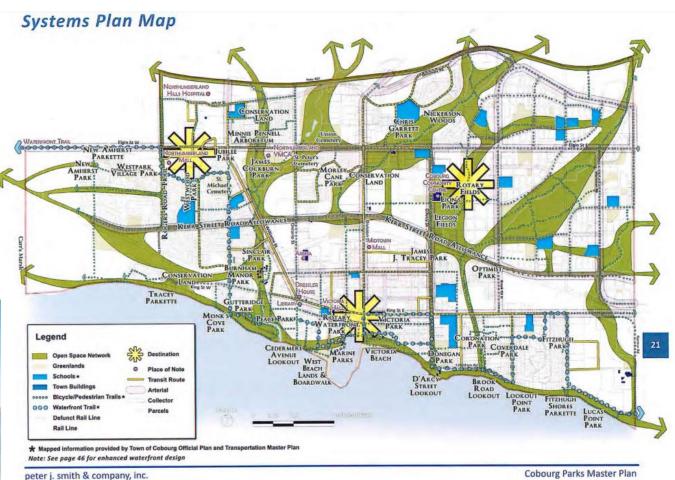
Nature-based Storm Water Management System

Parks, Trails, Woodlands, Wetlands and Natural Heritage Systems are all part of managing and controlling storm water runoff.

Do Municipal Parks get assessed for Cobourg SWM fees?

DRAFT



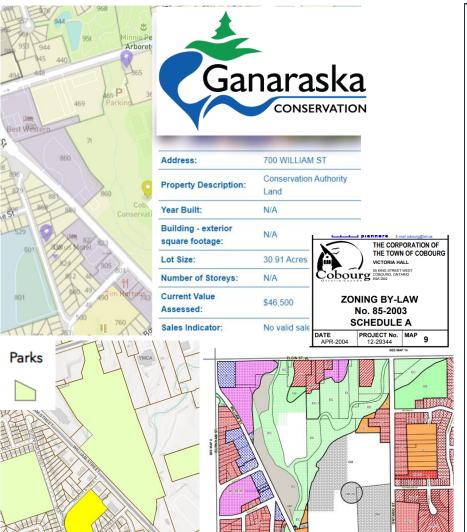


Ganaraska Region Conservation Authority

Approx \$5000 Stormwater fee

30.91 acres (12.5 hectares)

Approx \$5200 based on 2024 (at \$402 16)



Cobourg Conservation Area

Cobourg Conservation Area is owned by the GRCA and maintained, in partnership, with the Town of Cobourg. Located in the heart of Cobourg, this area is ideal for playing sports and games in the open spaces or taking a stroll near Cobourg Creek.

