



COUNCIL INFORMATION PACKAGE

Friday, August 2, 2024

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MEMORANDUM

TO: Welland City Council

FROM: Lina DeChellis, Director of Economic Development & Strategic Initiatives

DATE: August 1, 2024

SUBJECT: Physician Recruitment Incentive – Dr. Olufemi Sule

I'm pleased to inform Council that Dr. Olufemi Sule has chosen Welland for his family practice and will be practicing at King Street Medical Clinic located at 244 King Street. Dr. Sule will start seeing patients after September 4. If you know of anyone looking for a Family Physician, they can become a patient by calling 289-820-6540.

City staff have been working closely with the Region's Physician Recruitment Specialist and have been successful in attracting 7 new family physicians since the approval of the Physician Recruitment Incentive.

To date Dr. Shublaq, Dr. Zayed, Dr. Richardson, Dr. Calcagno, Dr. Patel, Dr. Khan and Dr. Sule are practicing in the City of Welland.



City of Stratford, Corporate Services Department

Clerk's Office

City Hall, P. O. Box 818, Stratford, Ontario N5A 6W1

Tel: 519-271-0250, extension 5237

Email: clerks@stratford.ca

Website: www.stratford.ca

July 26, 2024

Sent via email – deputy-clerk@osmtownship.ca

Liz Ross,
Deputy Clerk
Township of Otonabee-South Monaghan

Re: Resolution Regarding the Importation and Safe Use of Lithium-ion Batteries

We acknowledge receipt of your correspondence dated June 28, 2024, regarding the above-mentioned matter.

The said correspondence was provided to Stratford City Council for their information as part of the July 22, 2024, Council meeting Consent Agenda (CA-2024-124). Council adopted the following resolution:

THAT CA-2024-124, being a resolution from The Corporation of the Township of Otonabee-South Monaghan regarding the Importance of Safe Use of Lithium-ion Batteries, be endorsed.

Sincerely,

A. Pascual

Audrey Pascual, Deputy Clerk

/mf

cc: Hon. David Piccini, Minister of Labour, Immigration and Skills Development
Association of Municipalities of Ontario
All Ontario municipalities



The Corporation of the Township of Otonabee-South Monaghan

June 28, 2024

Via Email: david.piccinico@pc.ola.org

Hon. David Piccini M.P.P.
Minister of Labour, Immigration, Training and Skills Development
117 Peter Street
Port Hope, ON
L1A 1C5

Dear Minister Piccini:

Re: Regulations for the Importation and Safe Use of Lithium-ion Batteries

I am writing today to bring to your attention a matter of significant importance to the Township of Otonabee-South Monaghan, regarding the importation and safe use of lithium-ion batteries.

At the June 17, 2024 Council Meeting the Fire Chief of the Township of Otonabee-South Monaghan made a presentation to Council on the dangers presented by lithium-ion batteries. The Fire Chief was reporting back from attending the Charged For Life Symposium presented by the Office of the Fire Marshal.

During the presentation, the Fire Chief stressed that the increased importation and use of non-Original Equipment Manufacturer (OEM) aftermarket batteries is presenting a significant increase in fire and explosion, putting citizens and responding personnel in danger. These after market batteries are not Underwriter Laboratories of Canada (ULC) certified but can be imported into Canada without any associated regulations.

Unlicensed persons and locations can store and modify lithium-ion batteries in our communities without regulations, providing dangerous conditions within a community. Charging these batteries within the home or multi-unit dwellings can result in larger fires with grave results.

Email: info@osmtownship.ca Telephone: 705.295.6852 Facsimile 705.295.6405
P.O. Box 70 20 Third St Keene, ON K0L 2G0
Visit our website at www.osmtownship.ca or follow us on Twitter @OSMTownship

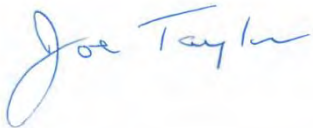
As Canada becomes more aware of Green Energy solutions, these batteries are used more often, increasing the danger to our communities. We support the Ontario Fire Marshal's program to educate citizens on the danger associated with lithium-ion batteries and encourage every municipality to actively promote safe practices for the use of lithium-ion batteries.

We also call upon all levels of government to enact regulations for the importation, sale, storage, and use of non-OEM or ULC certified lithium-ion batteries.

Thank you in advance for your attention to this very critical issue, and I look forward to your prompt consideration and support.

Please do not hesitate to contact me or our Fire Chief if you require any additional information.

Yours truly,
Township of Otonabee-South Monaghan

A handwritten signature in blue ink that reads "Joe Taylor". The signature is written in a cursive style with a large, looped initial "J".

Joe Taylor, Mayor

Cc: MP, Philip Lawrence
All Ontario Municipalities

The Corporation of the Municipality of St. Charles
RESOLUTION PAGE




Regular Meeting of Council

Agenda Number: 10.2.
Resolution Number 2024-243
Title: Resolution stemming from April 17, 2024 Regular Meeting of Council - Item 10.1 - Correspondence #3
Date: May 15, 2024

Moved by: Councillor Pothier
Seconded by: Councillor Laframboise

BE IT RESOLVED THAT Council for the Corporation of the Municipality of St.-Charles hereby supports the letter of support dated March 19, 2024 from the Town of Fort Erie supporting Resolution No. RC-2024-23 passed by the Corporation of the Town of Lincoln on February 26, 2024, regarding the urgent need for increased funding to libraries and museums in Ontario;
AND BE IT FURTHER RESOLVED THAT a copy of this Resolution be sent to Premier Doug Ford; the Minister of Tourism, Culture and Sport, Neil Lumsden; the Association of Municipalities of Ontario (AMO); our local Member of Provincial Parliament (MPP); and, all Ontario Municipalities.

CARRIED


MAYOR



Legislative Services

March 19, 2024

The Honourable Doug Ford
Premier of Ontario
Legislative Building, Queen's Park
Toronto, ON M7A 1A1
premier@ontario.ca

Honourable and Dear Sir:

Re: Support Town of Lincoln Resolution - Request Provincial Government to Support Increasing Funding for Public Libraries and Community Museums

Please be advised the Municipal Council of the Town of Fort Erie at its meeting of March 18, 2024 received and supported correspondence from the Town of Lincoln dated February 28, 2024 requesting the Provincial Government to support increasing funding for Public Libraries and Community Museums.

Attached please find a copy of the Town of Lincoln correspondence dated February 28, 2024.

Thank you for your attention to this matter.

Sincerely,

Peter Todd,
Manager, Legislative Services / Town Clerk
ptodd@forterie.ca
PT-dlk

Attach.

c.c. The Honourable Neil Lumsden, Minister of Tourism, Culture and Sport neil.lumsden@pc.ola.org
The Association of Municipalities of Ontario amo@amo.on.ca
Local Area Municipalities
Niagara Region
All Ontario Municipalities



4800 SOUTH SERVICE RD
BEAMSVILLE, ON L0R 1B1
905-563-8205

February 28, 2024

SENT VIA EMAIL: Premier@ontario.ca

The Honourable Doug Ford
Premier of Ontario
Legislative Building, Queen's Park
Toronto, ON M7A 1A1

Dear Honourable Doug Ford:

RE: Town of Lincoln Council Resolution – Urgent Need for Increased Funding to Libraries and Museums in Ontario

Please be advised that the Council of the Corporation of the Town of Lincoln at its Council Meeting held on February 26, 2024, passed the following motion regarding an Urgent Need for Increased Funding to Libraries and Museums in Ontario:

Resolution No: RC-2024-23
Moved by Mayor Easton; Seconded by Councillor Mike Mikolic

WHEREAS the provincial funding for public libraries is currently based on population levels from 25 years ago, which fails to reflect the substantial growth and changing needs of our communities. The Town of Lincoln Council wishes to draw your attention to the "Overdue" report of 2023 from the Canadian Urban Council, which emphasizes the pivotal role libraries play in various aspects of community life, including knowledge distribution, culture, health, reconciliation, belonging, and our democracy; and

WHEREAS libraries, situated at the heart of our communities, serve as multifaceted institutions catering to diverse needs. They provide essential services such as access to culture and information, refuge for those experiencing domestic violence, election information centers, job search facilities, health clinics, language learning centers for newcomers, and spaces for educational and community events. Despite their vital role, public libraries in Ontario have not seen an increase in provincial funding for over 25 years, leading to a decrease in the value of the province's investment by over 60%; and

WHEREAS the Town of Lincoln Council urges the Provincial Government to

consider increasing provincial funding for Ontario's public libraries to address critical shared priorities and community needs. While over 90% of library funding comes from local municipal governments, provincial operating funding is crucial for providing stability to library budgets, especially in times of inflation, technological changes, and increasing demands on libraries as community hubs; and

WHEREAS the Town of Lincoln Council would like to bring to the Provincial Government's attention the pressing need to increase the funding envelope for the Community Museum Operating Grant (CMOG). The Town of Lincoln currently receives \$25,000 annually, the maximum amount through this grant, but the funding envelope has remained stagnant for over 15 years. This limitation hampers the ability of community museums to offset increasing operational expenses, impacting their role in preserving and promoting local stories, attracting cultural tourists, supplementing school curriculum, and contributing to vibrant and vital communities; and

WHEREAS the Lincoln Museum and Cultural Centre is a community hub critical to the health and vibrancy of our community. An increase in CMOG funding will enable our museum to continue its valuable service to the community, creating a sense of place, attracting cultural tourists, and preserving local stories that define our unique identity; and

WHEREAS Cultural institutions, particularly museums, play a vital role in shaping and preserving our community's identity. They contribute to tourism, social participation, senior well-being, skill-building, and learning. As the largest government funder for most of Ontario's smaller museums, municipalities create value in their communities through the work of these institutions.

THEREFORE, BE IT RESOLVED THAT the Town of Lincoln Council urges the Provincial Government to support increasing funding to both public libraries and community museums. Recognizing these institutions as national assets and strategically investing in their potential will contribute significantly to renewing post-pandemic social cohesion, economic well-being, and community resilience; and

BE IT FURTHER RESOLVED THAT this resolution be circulated to the Province, the Minister of Tourism, Culture and Sport, Association of Municipalities of Ontario (AMO), the Niagara Region, the 12 Local Area Municipalities in Niagara and all municipalities of Ontario for endorsement.

CARRIED

If you require any additional information, please do not hesitate to contact the undersigned.

Regards,



Julie Kirkelos
Town Clerk
jkirkelos@lincoln.ca

JK/dp

Cc: Premier of Ontario
Minister of Tourism, Culture and Sport
Association of Municipalities of Ontario (AMO)
Ann-Marie Norio, Clerk, Niagara Region
Local Area Municipalities
All Ontario Municipalities

The Corporation of the Municipality of St. Charles
RESOLUTION PAGE



Regular Meeting of Council


Agenda Number: 10.4.
Resolution Number 2024-245
Title: Resolution stemming from April 17, 2024 Regular Meeting of Council - Item 10.1 - Correspondence #29
Date: May 15, 2024

Moved by: Councillor Loftus
Seconded by: Councillor Pothier

BE IT RESOLVED THAT Council for the Corporation of the Municipality of St.-Charles hereby supports the Resolution passed by the Town of Goderich, on March 18, 2024, regarding the phase-out of free private well testing in Ontario;

AND BE IT FURTHER RESOLVED THAT a copy of this Resolution be sent to Premier Doug Ford; the Minister of Environment, Conservation and Parks, Andrea Khanjin; the Minister of Health, Sylvia Jones; the Association of Municipalities of Ontario (AMO); our local Member of Provincial Parliament (MPP); our local Health Unit, Public Health Sudbury & Districts; and, all Ontario Municipalities.

CARRIED


MAYOR

The Town of Goderich
57 West Street
Goderich, Ontario
N7A 2K5
519-524-8344
townhall@goderich.ca
www.goderich.ca



Wednesday, April 10, 2024

Matthew Pearson
Chair
Ausable Bayfield Maitland Valley Source Protection Committee
71108 Morrison Line
RR3, Exeter Ontario
N0M 1S5

SENT VIA EMAIL: mpearson@bmross.net

RE: Recommended Phase-Out of Free Well Water Testing in the 2023 Auditor General's Report

Dear M. Pearson,

Please be advised of the following motion passed at the Monday, March 18, 2024, Goderich Town Council Meeting:

Moved By: Councillor Segeren
Seconded By: Deputy Mayor Noel

That the Town of Goderich direct a letter to Minister Lisa Thompson requesting that the province not proceed with the recommended phase-out of free private well testing in Ontario;

And Further That area municipalities, the Minister of Environment Conservation and Parks, the Minister of Health and Long-Term Care, other Source Protection Committees, and local health units be forwarded the letter and asked for their support.

CARRIED

If you have any questions, please do not hesitate to contact me at 519-524-8344 ext. 210 or afisher@goderich.ca.

Yours truly,

A handwritten signature in black ink that reads "Andrea Fisher".

Andrea Fisher
Director of Legislative Services/Clerk
/ar

cc. Premier Doug Ford premier@ontario.ca
Hon. Paul Calandra Paul.Calandra@pc.ola.org

The Town of Goderich
57 West Street
Goderich, Ontario
N7A 2K5
519-524-8344
townhall@goderich.ca
www.goderich.ca



MPP Lisa Thompson, Huron–Bruce lisa.thompsonco@pc.ola.org
MPP Andrea Khanjin, Minister of Environment Conservation and Parks
andrea.khanjin@pc.ola.org
MPP Stan Cho, Minister of Long-Term Care Stan.Cho@pc.ola.org
Ontario Municipalities



CORPORATION OF THE
TOWNSHIP OF SCHREIBER
CAO/CLERK

Hon. Patty Hajdu,
705 Red River Road, Suite 3
Thunder Bay, ON
P7B 1J3

July 18, 2024

Re: Schreiber's Wastewater Treatment Plant

Dear Hon. Patty Hajdu,

I am writing to you today to request a meeting in person regarding our Wastewater Treatment Plant along with Mayor Mullins and Cllr. Bourgeault. The Schreiber Wastewater Treatment Plant was initially built in 1974 with only one Clarifier. In 1989 a second Clarifier was built in addition to some plant components, such as a chlorine contact chamber. The plants served the community well until recently when regulations changed. The practice of chlorinating effluent at wastewater plants has been around since the early 1900's. However, around 1999, new regulations came into effect that require wastewater plants to dechlorinate before discharging wastewater back into the environment.

The Practice of dechlorinating was a financial burden most communities were not able to bear. It became acceptable to implement temporary measures to dechlorinate effluent discharge at a reasonable cost. Unfortunately, Wastewater plants in many communities have adopted this temporary fix as a normal practice. Recently communities have been made aware that this temporary fix will no longer be tolerated, and permanent treatment practices must be adopted by 2026. Inspections of wastewater plants will again become the focus for inspectors starting this year for the first time in a decade.

In 2022, the Schreiber Town Council of the day started the process of UV disinfection. The Township hired EXP Services Inc, to prepare a design brief for the installation of the UV disinfection and the projected annual cost of operating the system. With a deadline for a permanent solution fast approaching in 2026, the Township has turned their focus to a permanent solution using chemicals to dechlorinate. This "Chemical in a Box" can be designed and installed for approximately **one million dollars (\$1,000,000.00)** with an annual operating budget of **twenty-seven thousand dollars (\$27,000.00)**. The UV solution is approximately **five million dollars (\$5,000,000.00)** to install with an annual operating budget of **ten thousand dollars (\$10,000.00)**. This initial installation cost of both is beyond reach for the Township so the lessor of the two (2) options is our only choice despite a higher annual operating cost. The Township is still working on finding the money for this project.

CORPORATION OF THE
TOWNSHIP OF SCHREIBER
CAO/CLERK

In 2021, the plant underwent an electrical inspection and the classification of the plant changed to a class 4. This means that all the electrical components in the plant must be changed to explosion proof components. This change was necessary due to the moist environment and gases produced by the process. Since the cost was astronomical for the Township, a decision was made to do the Electrical Safety Authority (ESA) upgrade in 4 phases.

The first phase was completed in 2022 for **one hundred eighty-one thousand five hundred dollars (\$181,500.00)**. In 2023, the prices for all the parts were almost double because of COVID. As a result, phase 2 price tag exceeded what was budgeted in 2023, so nothing was done.

In 2024, the ESA inspector requested a meeting with the Township of Schreiber to discuss the outstanding issues with the Wastewater Treatment Plant. The ESA has been more than patient with the Township as the normal practice is **30 days** to comply. We are required to have the Wastewater plant brought up to a Class 4 standard by the end of 2024. This endeavor will cost the Township approximately **one million dollars (\$1,000,000.00)**. The Township is using the OTF money to cover this expense and borrowing the balance until the 2025 allocation is received.

As you can see in the attached spreadsheet, the electrical issue at the plant continues to present urgent situations from "dirty power" and corroded components. Electrical components continue to fail such as breakers, pumps, motors, receptacles, lights, heaters, the list is endless. These urgent repairs continue to put strains on the reserve funds.

Due to the age of the plant, the breakdowns are not only associated with the electrical issues. We have experienced breakdowns in the air distribution system, where confined entries are required to patch pipes under the plant. Currently we are experiencing a breakdown with clarifier 1. There seems to be a concrete failure on the wall separating the clarifier and the digester. This breakdown is preventing the sludge from being bagged properly. The clarifier will need to be pumped down and a concrete specialist brought in to examine the wall to see if repair is possible. We are unclear at this point about the cost of repair, but we anticipate somewhere around **one hundred thousand dollars (\$100,000.00)**. We are currently investigating this urgent matter.

With mechanical breakdowns, electrical issues, and structural failures, the process of treating wastewater cannot be maintained. Sludge cannot get bagged due to the excess water from the structural failure. The lack of air in the process while we wait for the new blower and VFD to be installed. The Non-Compliance incidents that we have had to report have put Schreiber on the short list to be among the first inspections. The repairs and regulations that we are aware of will most certainly put a financial strain on the Township that a small resident tax base will never be able to sustain. The Non-Compliance reports have totaled **thirteen (13)** just since **March of 2024**.

CORPORATION OF THE
TOWNSHIP OF SCHREIBER
CAO/CLERK

The bagging system at the wastewater plant is the original installed in 1974. The system has been obsolescing for many years now, so parts are no longer available. When breakdowns occur, custom parts are made by an out-of-town welding shop. This translates into long down times while parts are manufactured. The system does not work well anymore so it requires constant manpower to ensure it continues to bag. This puts an incredible strain on staffing already faced with shortages. The bagging system needs to be upgraded as soon as possible since this process contributes to the Non-Compliance issues. This new system is also going to cost the Township another **million dollars (\$1,000,000.00)** plus.

As you can see on page 5 of this correspondence the Township has endured **one point five million dollars (\$1,518,061.34)** in unexpected repairs over the last **five and a half (5.5) years**. Aging infrastructure and little assistance are hemorrhaging small Municipalities all over the Province. It is imperative that the Provincial and Federal Governments step up to financially relieve the heavy burdens on small Municipalities.

We are reaching out to you today to discuss such EMERGENCY issues and how the Provincial and Federal Governments are going to step up to plate and provide much needed financial assistance to assist with their mandated Regulations. To cover these essential upgrades small Municipalities will need to tax their residents to death to cover such costs.

I look forward to hearing back from you with a time for a scheduled meeting to discuss options available to small Municipalities with such emergent issues as I have described above.

Kind Regards,



Rhonda Smith

CAO/Clerk for the Township of Schreiber

CC: Mayor Mullins

Cllr. Bourgeault

Cllr. McGrath

Cllr. Mauro

Cllr. Bryson

Hon. Doug Ford, Premier of Ontario

Hon. Justin Trudeau, Prime Minister

Hon. Kinga Surma, Minister of Infrastructure

CORPORATION OF THE
TOWNSHIP OF SCHREIBER
CAO/CLERK

Unexpected Costs at the Wastewater Treatment Plant Since 2019

Year	Description	Cost
2019	Compressor Repair	\$84.75
	Bagging System Repair	\$290.51
	Bagging Building Heater Repair	\$1,695.00
	Sludge Motor Repair	\$901.18
	Bagging System Repair	\$2,009.25
	Bagging System Clamps Repair	\$1,007.42
	Clarifier Building Heater Repair	\$3,983.25
	Trash Pump	\$2,280.80
	Clarifier Heater Repair	\$1,192.09
	Clarifier Parts	\$15,036.15
	DE chlorination Feasibility Study	\$24,663.82
	Light Repair in the Clarifier Building	\$6,780.00
	2019 Total	\$59,924.22
2020	Bagger Heater Repair	\$565.28
	Clarifier Building Electrical Repairs	\$1,062.12
	Bagging System Electrical Repairs	\$1,062.12
	Chlorinator Parts	\$4,844.53
	Plant Electrical Inspection	\$23,938.00
	2020 Total	\$31,472.05
2021	Sludge Trailer Axle Repair	\$1,063.33
	Sludge Trailer Parts	\$2,594.48
	Water Heater Replacement (electrical surge)	\$519.79
	Light Repairs	\$1,595.71
	DeChlor Metering Pump	\$942.92
	Digester Decant Pump	\$3,587.55
	Building Classification as per ESA	\$6,614.40
	Electrical Assessment as per ESA	\$23,330.00
	2021 Total	\$40,248.18

CORPORATION OF THE
TOWNSHIP OF SCHREIBER
CAO/CLERK

Unexpected Costs at the Wastewater Treatment Plant Since 2019

Year	Description	Cost
2022	DeChlor Project Study Final Invoice	\$33,249.43
	ESA Electrical Upgrade	\$18,189.09
	Clarifier Blower Line Repair	\$18,640.64
	ESA Upgrades Phase 1	\$181,440.33
	Receptacle Emergency Repair	\$2,017.92
	Sludge Pump Replacement	\$2,236.80
	VFD Failure - Dirty Power (troubleshooting)	\$1,414.88
	2022 Total	\$257,189.09
2023	Bagger Building Heater Repairs	\$395.50
	Bagger Building Heater Repairs	\$442.59
	Light Repair Garage Washrooms	\$1,209.91
	Emergency Blower Motor Install	\$6,130.21
	2023 Total	\$8,178.21
2024	ESA Upgrades - Mandatory	\$990,822.00
	VFD Cabinet Blower	\$114,560.00
	Emergency Repair Lights and Heater Clarifier 2	\$14,430.80
	Bagger Building Heater Repair	\$1,236.79
	2024 Total as of July 6th	\$1,121,049.59
	5.5 yr. Total	\$1,518,061.34

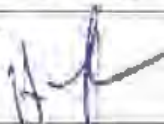
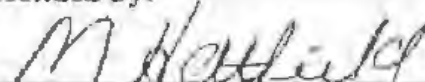


The Corporation of the Municipality of Wawa

REGULAR COUNCIL MEETING

RESOLUTION

Tuesday, July 23, 2024

Resolution # RC24165	Meeting Order: 8
Moved by: 	Seconded by: 

WHEREAS Council of the Municipality of Wawa received correspondence from the Township of Larder Lake and the Town of Cobalt regarding Asset Retirement Obligations;

THEREFORE BE IT RESOLVED that Council of the Municipality of Wawa approves the following;

1. That correspondence from the Township of Larder Lake and the Town of Cobalt regarding Asset Retirement Obligation be received and endorsed; and,
2. That a copy of this resolution be forwarded to the Honourable Paul Calandra, Minister of Municipal Affairs and Housing, the Association of Municipal Clerks and Treasurers of Ontario (AMCTO), the Association of Municipalities of Ontario (AMO), the Federation of Northern Ontario Municipalities (FONOM) and all municipalities in Northern Ontario.

RESOLUTION RESULT	RECORDED VOTE	YES	NO
<input checked="" type="checkbox"/> CARRIED	MAYOR AND COUNCIL		
<input type="checkbox"/> DEFEATED	Mitch Hatfield		
<input type="checkbox"/> TABLED	Cathy Cannon		
<input type="checkbox"/> RECORDED VOTE (SEE RIGHT)	Melanie Pilon		
<input type="checkbox"/> PECUNIARY INTEREST DECLARED	Jim Hoffmann		
<input type="checkbox"/> WITHDRAWN	Joseph Opato		

Disclosure of Pecuniary Interest and the general nature thereof.

Disclosed the pecuniary interest and general name thereof and abstained from the discussion, vote and influence.

Clerk: _____

MAYOR - MELANIE PILON	CLERK - MAURYO'NEILL
	



THE CORPORATION OF THE TOWN OF COBALT

June 26, 2024

The Corporation of the Township of Harley
903303 Hanbury Rd
New Liskeard, ON P0J 1P0

Please be advised that at the Regular Meeting of Council on June 25, 2024, the Town of Cobalt adopted the following resolution:

RESOLUTION No. 2024-125

MOVED BY: Councillor Wilcox
SECONDED BY: Councillor Starchuk

WHEREAS the Public Sector Accounting Board (PSAB) establishes accounting standards for the public sector which must be followed by all Ontario municipalities;

AND WHEREAS the Municipal Act, 2001, section 294.1 states that a municipality shall, for each fiscal year, prepare annual financial statements for the municipality in accordance with generally accepted accounting principles for local governments as recommended, from time to time, by the Public Sector Accounting Board of the Chartered Professional Accountants of Canada;

AND WHEREAS PS3280 is a new accounting standard covering asset retirement obligations (ARO) that was approved by PSAB in March 2018;

AND WHEREAS the standard must be applied by all public sector entities who prepare their financial statements under PSAB, including all Canadian municipalities;

AND WHEREAS many small municipalities do not have accountants or engineers on staff to complete the ARO obligations and this major accounting changes will force small municipalities to hire consultants to complete this work and cause a significant financial burden to municipalities;

NOW THEREFORE BE IT RESOLVED THAT the Council of the Corporation of the Town of Cobalt supports the resolutions from the Township of Harley, Coleman Township, Township of Larder Lake, Township of Casey, Township of Hudson & Township of Kerns and hereby calls upon the province of Ontario to provide financial assistance to municipalities to complete the ARO;

AND FURTHER THAT a copy of this resolution be forwarded to the Honourable Paul Calandra, Minister of Municipal Affairs and Housing, the Association of Municipal Clerks and Treasurers of Ontario (AMCTO), the Timiskaming Municipal Association (TMA), the Federation of Northern Ontario Municipalities (FONOM) and all municipalities within the District of Timiskaming.

CARRIED

Kind Regards,

Steven Dalley
Town Manager, Clerk/Treasurer
Email: sdalley@cobalt.ca

THE CORPORATION OF THE TOWNSHIP OF LARDER LAKE

69 Fourth Avenue, Larder Lake, ON
 Phone: 705-643-2158 Fax: 705-643-2311



MOVED BY:

- Thomas Armstrong
- Patricia Hull
- Paul Kelly
- Lynne Paquette

SECONDED BY:

- Thomas Armstrong
- Patricia Hull
- Paul Kelly
- Lynne Paquette

Motion #: 12

Resolution #:

Date: June 11, 2024

WHEREAS, the Public Sector Accounting Board (PSAB) establishes accounting standards for the public sector which must be followed by all Ontario municipalities; And

WHEREAS, the Municipal Act, 2001 section 294.1 states that a municipality shall, for each fiscal year, prepare annual financial statements for the municipality in accordance with generally accepted accounting principles for local governments as recommended, from time to time, by the Public Sector Accounting Board of the Chartered Professional Accountants of Canada; And

WHEREAS, PS 3280 is a new accounting standard covering asset retirement obligations (ARO) that was approved by PSAB in March 2018; And

WHEREAS, the standard must be applied by all public sector entities who prepare their financial statements under PSAB, including all Canadian municipalities; And

WHEREAS, many small municipalities do not have accountants or engineers on staff to complete the ARO obligations and this major accounting change will force small municipalities to hire consultants to complete this work and cause a significant financial burden to municipalities;

NOW THEREFORE BE IT RESOLVED THAT The Corporation of the Township of Larder Lake hereby calls upon the province of Ontario to provide financial assistance to municipalities to complete the ARO; And

FINALLY, THAT a copy of this resolution be forwarded to the Honourable Paul Calandra, Minister of Municipal Affairs and Housing, the Association of Municipal Clerks and Treasurers

Recorded vote requested:

	For	Against
Tom Armstrong		
Patricia Hull		
Paul Kelly		
Lynne Paquette		
Patty Quinn		

I declare this motion

<input type="checkbox"/> Carried
<input type="checkbox"/> Lost / Defeated
<input type="checkbox"/> Deferred to: _____ (enter date)
Because:
<input type="checkbox"/> Referred to: _____ (enter body)
Expected response: _____ (enter date)

Disclosure of Pecuniary Interest*

Chair: _____

*Disclosed his/her (their) interest(s), abstained from discussion and did not vote on this question.

THE CORPORATION OF THE TOWNSHIP OF LARDER LAKE

69 Fourth Avenue, Larder Lake, ON
 Phone: 705-643-2158 Fax: 705-643-2311



MOVED BY:

- Thomas Armstrong
- Patricia Hull
- Paul Kelly
- Lynne Paquette

SECONDED BY:

- Thomas Armstrong
- Patricia Hull
- Paul Kelly
- Lynne Paquette

Motion #: 13

Resolution #:

Date: June 11, 2024

of Ontario (AMCTO), the Timiskaming Municipal Association (TMA), the Federation of Ontario Municipalities (FONOM), and all municipalities within the District of Timiskaming.

Recorded vote requested:

	For	Against
Tom Armstrong		
Patricia Hull	✓	
Paul Kelly	✓	
Lynne Paquette	✓	
Patty Quinn	✓	

Disclosure of Pecuniary Interest*

I declare this motion

<input checked="" type="checkbox"/> Carried
<input type="checkbox"/> Lost / Defeated
<input type="checkbox"/> Deferred to: _____ (enter date)
Because:
<input type="checkbox"/> Referred to: _____ (enter body)
Expected response: _____ (enter date)

Chair:

***Disclosed his/her (their) interest(s), abstained from discussion and did not vote on this question.**



July 29, 2024

The Honourable Doug Ford
Premier of Ontario
Legislative Building, Queen's Park
Toronto, ON M7A 1A1

Sent via email: premier@ontario.ca

RE: Letter of Support – Public Health Ontario Proposes Phasing Out Free Water Testing for Private Wells

Dear Premier Ford,

Please be advised that the Council of the Township of Pelee passed the following resolution at their Regular Meeting of Council held on July 23rd, 2024:

Resolution 2024 – 129

Moved By: Councillor Dave DeLellis

Seconded By: Councillor Michelle Taylor

BE IT RESOLVED THAT the Council of the Corporation of the Township of Pelee hereby support the City of Pickering, Township of Amaranth, Town of New Tecumseth, Town of Petrolia, Municipality of Central Manitoulin, and Township of Archipelago's request to the Province of Ontario to reconsider and ultimately decide against the proposed phasing out of free private drinking water testing services.

AND FURTHER THAT this resolution be circulated to all Ontario municipalities, the Minister of Health, Chatham-Kent-Leamington MPP, Parliamentary Assistant to the Minister of Health, and the Windsor Essex County Health Unit.

Sincerely,

Kristine Horst

Kristine Horst

Township Administrator & Clerk

Kristine.horst@pelee.ca

Cc **Minister of Health, sylvia.jones@pc.ola.org**
Chatham-Kent-Leamington MPP, Trevor.Jones@pc.ola.org
Parliamentary Assistant to the Minister of Health, Anthony.Leardi@pc.ola.org
Windsor Essex County Health Unit, CEO@wechu.org
Ontario Municipalities

Sent by Email

July 3, 2024

The Honourable Sylvia Jones
Minister of Health
College Park, 5th Floor,
777 Bay St
Toronto, ON M7A 2J3
sylvia.jones@ontario.ca

Subject: Corr. 18-24
Nicole Martin, CAO/Clerk, Town of Amaranth
Re: Resolution on Water Testing Services for Private Drinking Water

The Council of The Corporation of the City of Pickering considered the above matter at a Meeting held on June 24, 2024 and adopted the following resolution:

1. That Corr. 18-24 from Nicole Martin, CAO/Clerk, Town of Amaranth, dated May 16, 2024, regarding Resolution on Water Testing Services for Private Drinking Water, be received and endorsed; and,
2. That a copy of this resolution be forwarded to the Honourable Sylvia Jones, Minister of Health, the Honourable Andrea Khanjin, Minister of Environment, Conservation and Parks, the Honourable Peter Bethlenfalvy, M.P.P. Pickering-Uxbridge, Durham Region Public Health, and all Ontario municipalities.

A copy of the original correspondence is attached for your reference.

Should you require further information, please do not hesitate to contact the undersigned at 905.420.4660, extension 2019.

Yours truly,



Susan Cassel
City Clerk

Encl.

SC:am

Copy: The Honourable Andrea Khanjin, Minister of Environment, Conservation and Parks;
The Honourable Peter Bethlenfalvy, M.P.P. Pickering-Uxbridge;
Durham Region Public Health
All Ontario Municipalities

Chief Administrative Officer



374028 6TH LINE • AMARANTH ON • L9W 0M6

May 16, 2024

Sent Via Email

Re: Resolution on Water Testing Services for Private Drinking Water

At its regular meeting of Council held on May 15, 2024, the Township of Amaranth Council passed the following resolution concerning Water Testing Services for Private Drinking Water.

Resolution #: 5

Moved by: G. Little

Seconded by: A. Stirk

BE IT RESOLVED THAT:

Whereas the Ontario Auditor General's annual report on public health from December 2023 indicates that Public Health Ontario is proposing the phasing-out of free provincial water testing services for private drinking water; and

Whereas free private drinking water testing services has played a pivotal role in safeguarding public health, particularly in rural communities, including the entire Township of Amaranth, that rely predominantly on private drinking water; and

Whereas the removal of free private drinking water testing could lead to a reduction in testing, potentially increasing the risk of waterborne diseases in these vulnerable populations; and

Whereas the tragic events in Walkerton, Ontario underscored the critical importance of safe drinking water.

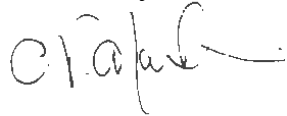
Now Therefore Be It Resolved that The Township of Amaranth hereby requests that the Province reconsider and ultimately decide against the proposed phasing-out of free private drinking water testing services.

Further Be It Resolved that this resolution be sent to all Ontario municipalities, Minister of Environment Conservation and Parks, Minister of Health, Wellington Dufferin Guelph Public Health Unit, and MPP Sylvia Jones.

CARRIED

Please do not hesitate to contact the office if you require any further information on this matter.

Yours truly,



Nicole Martin, Dipl. M.A.
CAO/Clerk

CC:
Minister of the Environment, Conservation and Parks
Minister of Health
Wellington Dufferin Public Health Unit
MPP Sylvia Jones
All Ontario Municipalities



6020 Highway 542, P.O. Box 420
Mindemoya, ON POP 1S0
Tel: 705-377-5726
Fax: 705-377-5585
Email: ddeforge@centralmanitoulin.ca

July 8, 2024

The Honourable Doug Ford
Premier of Ontario
Legislative Building, Queen's Park
Toronto, ON. M7A 1A1

Via Email: premier@ontario.ca

Dear Premier Ford,

RE: PUBLIC HEALTH ONTARIO PROPOSES PHASING OUT FREE WATER TESTING FOR PRIVATE WELLS

Please be advised that the Council of the Municipality of Central Manitoulin adopted the following resolution at their meeting of June 27, 2024, regarding the above noted matter;

Resolution # 200-2024

Moved by: Councillor D. Stephens

Seconded by: Councillor Mitchell

BE IT RESOLVED THAT Central Manitoulin Council supports the Township of Archipelago's request to the Province of Ontario to reconsider and ultimately decide against the proposed phasing out of free private drinking water testing services;

FURTHER, this resolution is circulated to all Ontario municipalities, the Minister of Health, and Sudbury District Health Unit...Carried

Please contact our office should you require further information.

Sincerely,

A handwritten signature in black ink, appearing to read "Denise Deforge", is written over a light blue horizontal line.

Ms. Denise Deforge
CAO/Clerk

cc. Minister of Health sylvia.jones@pc.ola.org
Sudbury District Health Unit sutcliffep@phsd.ca
Ontario Municipalities

~ AT THE HEART OF IT ALL ~

July 11, 2024

New Tecumseth
Clerks/Administration Department
Administration Centre
10 Wellington St. E. Alliston, ON L9R 1A1
Via email: pslowleigh@newtecumseth.ca

RE: Public Health Ontario – Phasing Out Free Water Testing for Private Wells

During the July 8, 2024, regular meeting of council, correspondence from New Tecumseth regarding Public Health Ontario – Phasing Out Free Water Testing for Private Wells was brought forward and discussed, the following resolution was passed:

Moved: Liz Welsh Seconded: Joel Field

THAT the council of the Town of Petrolia support the resolution of the Township of Tecumseth, regarding Public Health Ontario – Phasing Out Free Water Testing for Private Wells.

Carried

Kind regards,

Original Signed

Mandi Pearson
Director of Legislative Services | Deputy Operations | Clerk

cc: file
Municipalities of Ontario
andrea.khanjin@pc.ola.org - Honourable Andrea Khanjin, Minister of the Environment, Conservation and Parks
Sylvia.Jones@pc.ola.org - Honourable Sylvia Jones, Minister of Health
Karalyn.dueck@county-lambton.on.ca – Lambton Public Health, Office of the Medical Officer of Health
bob.bailey@pc.ola.org – MPP Bob Bailey, Sarnia-Lambton

Encl.

Phone: (519)882-2350 • Fax: (519)882-3373 • Theatre: (800)717-7694

411 Greenfield Street, Petrolia, ON, N0N 1R0

www.petrolia150.com www.town.petrolia.on.ca



June 24, 2024

VIA EMAIL

Dear Sir/Madam:

Re: Public Health Ontario – Phasing Out Free Water Testing for Private Wells

Please be advised that the Town of New Tecumseth Council passed the following resolution at their meeting of June 17, 2024:

Whereas the Ontario Auditor General's annual report on public health from December 2023 indicates that Public Health Ontario is proposing the phasing-out of free provincial water testing services for private drinking water;

And Whereas free private drinking water testing services has played a pivotal role in safeguarding public health, particularly in rural communities, including the entire Township of The Archipelago, that rely predominantly on private drinking water;

And Whereas the removal of free private drinking water testing could lead to a reduction in testing, potentially increasing the risk of waterborne diseases in these vulnerable populations;

And Whereas the tragic events in Walkerton, Ontario underscored the critical importance of safe drinking water.

Now Therefore Be It Resolved That the Town of New Tecumseth hereby requests that the Province reconsider and ultimately decide against the proposed phasing-out of free private drinking water testing services;

And Further That this resolution be sent to all Ontario municipalities, Andrea Khanjin, Minister of Environment Conservation and Parks, Sylvia Jones, Minister of Health, Simcoe Muskoka District Health Unit, and Brian Saunderson, MPP Simcoe -Grey.

Page 1 of 2

Yours truly,



Pamela Slowleigh
Deputy Clerk

cc. andrea.khanjin@pc.ola.org - Honourable Andrea Khanjin, Minister of the Environment, Conservation and Parks
Sylvia.Jones@pc.ola.org - Honourable Sylvia Jones, Minister of Health
Brian.Saunderson@pc.ola.org - Brian Saunderson, MPP Simcoe-Grey
All Ontario Municipalities

Phone: (519)882-2350

Fax: (519)882-3373

www.petrolia150.com www.town.petrolia.on.ca





The Corporation of the Municipality of Wawa

REGULAR COUNCIL MEETING

RESOLUTION

Tuesday, July 23, 2024

Resolution # RC24172	Meeting Order: 15
Moved by: 	Seconded by: 

WHEREAS the state of health care in Ontario is in crisis, with 2.3 million Ontarians lacking access to a family doctor, emergency room closures across the province, patients being de-rostered and 40% of family doctors considering retirement over the next five years; and

WHEREAS it has becoming increasingly challenging to attract and retain an adequate healthcare workforce throughout the health sector across Ontario; and

WHEREAS the Northern Ontario School of Medicine University says communities in northern Ontario are short more than 350 physicians, including more than 200 family doctors; and half of the physicians working in northern Ontario expected to retire in the next five years; and (Northern Ontario only) and;

WHEREAS Ontario municipal governments play an integral role in the health care system through responsibilities in public health, long-term care, and paramedicine and;

WHEREAS the percentage of family physicians practicing comprehensive family medicine has declined from 77% in 2008 to 65 percent in 2022; and

WHEREAS per capita health-care spending in Ontario is the lowest of all provinces in Canada; and;

WHEREAS a robust workforce developed through a provincial, sector-wide health human resources strategy would significantly improve access to health services across the province;

NOW THEREFORE BE IT RESOLVED THAT the Council of the Corporation of the Municipality of Wawa urge the Province of Ontario to recognize the physician shortage in the Municipality of Wawa and Ontario, to fund health care appropriately and ensure every Ontarian has access to physician care.

P. 2...



The Corporation of the Municipality of Wawa

REGULAR COUNCIL MEETING

RESOLUTION

AND FURTHERMORE, THAT a copy of this resolution be shared with AMO, Colin Best, Ontario Medical Association, Kimberly Moran, CEO, Premier Doug Ford, and all Ontario Municipalities.

RESOLUTION RESULT	RECORDED VOTE	YES	NO
<input checked="" type="checkbox"/> CARRIED	MAYOR AND COUNCIL:		
<input type="checkbox"/> DEPEATED	Mitch Hatfield		
<input type="checkbox"/> TABLED	Cathy Cannon		
<input type="checkbox"/> RECORDED VOTE (SEE RIGHT)	Melanie Pilon		
<input type="checkbox"/> PECUNIARY INTEREST DECLARED	Jim Hoffmann		
<input type="checkbox"/> WITHDRAWN	Joseph Opato		

Disclosure of Pecuniary Interest and the general nature thereof.

Disclosed the pecuniary interest and general name thereof and abstained from the discussion, vote and influence.

Clerk: _____

MAYOR - MELANIE PILON	CLERK - MAURY O'NEILL

Association of Municipalities of Ontario (AMO) 155 University Ave., Suite 800 Toronto, Ontario M5H 3B7 Telephone: 416.971.9856 Toll-free in Ontario: 1.877.426.6527 Fax: 416.971.6191	Ontario Medical Association 150 Bloor St. West, Suite 900 Toronto, ON M5S 3C1 Canada TF: 1.800.268.7215 T: 416.599.2580 F: 416.533.9309 E: info@oma.org oma.org
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Dear Heads of Council and Clerks,

Communities across Ontario have been facing critical healthcare challenges, including long waitlists for primary care, shortages of doctors and other healthcare workers; and emergency room closures. These cracks in Ontario's health care system are impacting economic development, health, and well-being at the local level.

In response, the Ontario Medical Association (OMA) and the Association of Municipalities of Ontario (AMO) are working collaboratively to advocate for a better healthcare system for Ontario's residents and communities.

We have jointly developed the attached draft council resolution (Appendix A - Also in PDF and Word Versions), urging the provincial government to recognize the physician shortage in your municipality and the rest of Ontario. By adopting this resolution, your municipality can play a crucial role in highlighting the urgent need for more healthcare resources and support.

AMO is excited to welcome everyone to Ottawa for our annual conference from August 18-21, 2024. We are pleased to inform you that the OMA will be participating at this year's conference. Along with sponsoring the Rural Caucus Lunch on August 20, the OMA has reserved meeting room at the Fairmont Château Laurier for both August 20 and 21 to meet directly with municipal leaders. During these meetings, we would like to hear what you are seeing on the ground and discuss opportunities to work closer with you. We believe that collaboration between Ontario's doctors and all 444 municipalities is essential in addressing the healthcare needs of your community.


To set up a meeting with the OMA, please reach out to Tarun.Saroya@OMA.org (Senior Advisor for Government Relations and Advocacy) to book a 15-30 minute time slot at your earliest convenience.

We look forward to your positive response and to working together towards a healthier future for all Ontarians.

Yours sincerely,



Kimberly Moran
CEO, Ontario Medical



Colin Best
Association AMO President

Appendix A:

WHEREAS the state of health care in Ontario is in crisis, with 2.3 million Ontarians lacking access to a family doctor, emergency room closures across the province, patients being de-rostered and 40% of family doctors considering retirement over the next five years; and

WHEREAS it has becoming increasingly challenging to attract and retain an adequate healthcare workforce throughout the health sector across Ontario; and

WHEREAS the Northern Ontario School of Medicine University says communities in northern Ontario are short more than 350 physicians, including more than 200 family doctors; and half of the physicians working in northern Ontario expected to retire in the next five years; and (Northern Ontario only)

WHEREAS Ontario municipal governments play an integral role in the health care system through responsibilities in public health, long-term care, and paramedicine.

WHEREAS the percentage of family physicians practicing comprehensive family medicine has declined from 77 in 2008 to 65 percent in 2022; and

WHEREAS per capita health-care spending in Ontario is the lowest of all provinces in Canada, and

WHEREAS a robust workforce developed through a provincial, sector-wide health human resources strategy would significantly improve access to health services across the province;

NOW THEREFORE BE IT RESOLVED THAT the Council of (the name of municipality) urge the Province of Ontario to recognize the physician shortage in (name of municipality) and Ontario, to fund health care appropriately and ensure every Ontarian has access to physician care.



The Corporation of the Municipality of Wawa

REGULAR COUNCIL MEETING

RESOLUTION

Tuesday, July 23, 2024

Resolution # RC24168	Meeting Order: 11
Moved by: <i>M Hatfield</i>	Seconded by: <i>Cathy Cannon</i>

WHEREAS Council of the Municipality of Wawa received correspondence from the Ontario Forest Industries Association dated June 19, 2024 regarding Immediate Action Needed to Support Ontario's Forest Sector;

NOW THEREFORE BE IT RESOLVED THAT the Council of the Corporation of the Municipality of Wawa does hereby receive and support the correspondence dated June 19, 2024 from the Ontario Forest Industries Association and urges the Ontario government support all measures targeting the immediate challenges the Ontario Forest sector faces.

RESOLUTION RESULT	RECORDED VOTE	YES	NO
<input checked="" type="checkbox"/> CARRIED	MAYOR AND COUNCIL		
<input type="checkbox"/> DEFEATED	Mitch Hatfield		
<input type="checkbox"/> TABLED	Cathy Cannon		
<input type="checkbox"/> RECORDED VOTE (SEE RIGHT)	Melanie Pilon		
<input type="checkbox"/> PECUNIARY INTEREST DECLARED	Jim Hoffmann		
<input type="checkbox"/> WITHDRAWN	Joseph Opato		

Disclosure of Pecuniary Interest and the general nature thereof.

Disclosed the pecuniary interest and general name thereof and abstained from the discussion, vote and influence.

Clerk: _____

MAYOR - MELANIE PILON <i>M. Pilon</i>	CLERK - MAURY O'NEILL <i>Maury O'Neill</i>
---	--



June 19, 2024

The Hon. Graydon Smith
Minister of Natural Resources
Whitney Block
99 Wellesley Street West
Toronto, Ontario
M7A 1W3

The Hon. Nolan Quinn
Associate Minister of Forestry
Whitney Block
99 Wellesley Street West
Toronto, Ontario
M7A 1W3

Submitted via email.

Re: Immediate Action Needed To Support Ontario's Forest Sector

Minister Graydon Smith and Associate Minister Nolan Quinn,

Congratulations on your recent appointments within Premier Doug Ford's Cabinet. The Ontario Forest Industries Association (OFIA) looks forward to our productive and continued work together.

Over the last six months, three of Ontario's six pulp and paper mills have permanently closed or idled. Adding to the issue was the closure of a critical softwood pulp market in Quebec. As you know, these facilities served as important consumers of solid-wood byproducts from Ontario sawmills.

The OFIA appreciates the many opportunities we have had to speak with you and senior leadership within Ontario's Ministry of Natural Resources (MNR) and Premier's Office. This includes in-person meetings with members of OFIA's Board Executive Committee on January 19th, March 19th, and May 28th, 2024. During these meetings, the OFIA presented short and long-term actions Ontario could take to address the regional chip and pulpwood market crisis endorsed by the OFIA membership (incl.).

The industry eagerly anticipates government action on this matter, as operating conditions for many have continued to worsen over the past six months. Combined with weak markets for some finished products, many companies struggle to continue their operations. We are now facing an unprecedented challenge in the sector, which could have negative and long-lasting implications for northern and rural communities across Ontario.

Without immediate action in response to OFIA recommendations and, critically, the vetting of potential solutions through the industry to ensure programs truly meet the sector's needs, we fear Ontario could face further curtailments, job losses, and lost economic opportunity.

The OFIA is ready to work with the Ontario government to set the forest products sector on a long-term and stable path towards economic development and prosperity. This includes our

vision of a *Forest Energy Directive* to develop bioheat, district heating, liquid fuels, renewable gases, biocarbon, and electricity generation projects, supporting Ontario's massive forecasted growth in non-emitting energy demands.

We urge you and your colleagues to continue supporting all measures targeting the immediate challenges the Ontario forest sector faces and look forward to future discussions with you.

Sincerely,



Ian Dunn, R.P.F.
President & CEO
Ontario Forest Industries Association
Cell: 647-297-3827

Incl. March 19th, 2024 Slide Deck – Summary of Input from the Membership – OFIA Meeting with the Hon. Graydon Smith

May 28th, 2024 Slide Deck – Ontario Forest Energy Directive

CC The Hon. Caroline Mulroney, President of the Treasury Board
The Hon. Peter Bethlenfalvy, Minister of Finance
The Hon. Vic Fedeli, Minister of Economic Development, Job Creation and Trade
The Hon. Greg Rickford, Minister of Northern Development and Indigenous Affairs
The Hon. George Pirie, Minister of Mines
The Hon. Steven Lecce, Minister of Energy and Electrification
The Hon. Sam Oosterhoff, Associate Minister of Energy Intensive Industries
The Hon. Todd Smith, Minister of Education
The Hon. Paul Calandra, Minister of Municipal Affairs and Housing
MPP John Yakabuski, Parliamentary Assistant to the Minister of Energy
MPP Kevin Holland, Parliamentary Assistant to the Minister of Mines
Deputy Minister Drew Vanderduim, Ministry of Natural Resources
OFIA Membership



Legal and Legislative Services

July 23, 2024

The Honourable Sylvia Jones,
Minister of Health
5th floor, 777 Bay Street
Toronto, ON M7A 2J3
Sylvia.Jones@pc.ola.org

Honourable and Dear Madam:

Re: Recognize Physician Shortage and Fund Health Care Appropriately

Please be advised the Municipal Council of the Town of Fort Erie at its meeting of July 22, 2024 passed the following resolution:

Whereas the state of health care in Ontario is in crisis, with 2.3 million Ontarians lacking access to a family doctor, emergency room closures across the province, patients being de-rostered and 40% of family doctors considering retirement over the next five years, and

Whereas it has becoming increasingly challenging to attract and retain an adequate healthcare workforce throughout the health sector across Ontario, and

Whereas the Northern Ontario School of Medicine University says communities in northern Ontario are short more than 350 physicians, including more than 200 family doctors; and half of the physicians working in northern Ontario expected to retire in the next five years, and (Northern Ontario only)

Whereas Ontario municipal governments play an integral role in the health care system through responsibilities in public health, long-term care, and paramedicine, and
Whereas the percentage of family physicians practicing comprehensive family medicine has declined from 77 in 2008 to 65 percent in 2022, and

Whereas per capita health-care spending in Ontario is the lowest of all provinces in Canada, and

.../2

Mailing Address:

The Corporation of the Town of Fort Erie
1 Municipal Centre Drive, Fort Erie ON L2A 2S6

Office Hours 8:30 a.m. to 4:30 p.m. Phone: (905) 871-1600 FAX: (905) 871-4022

Web-site: www.forterie.ca

Whereas a robust workforce developed through a provincial, sector-wide health human resources strategy would significantly improve access to health services across the province;

Now therefore be it resolved,

That: The Municipal Council of Town of Fort Erie urge the Province of Ontario to recognize the physician shortage in the Town of Fort Erie and Ontario, to fund health care appropriately and ensure every Ontarian has access to physician care.

Thank you for attention to this matter.

Sincerely,



Peter Todd,
Manager, Legislative Services / Town Clerk

ptodd@forterie.ca

PT:dlk

c,c,

Kimberly Moran, CAO, Ontario Medical Association amopresident@amo.on.ca

Colin Best, AMO President info@oma.org

Lynn Guerriero, President, Niagara Health Lynn.Guerriero@niagarahealth.on.ca

Wayne Gates, MPP - Niagara Falls wgates-co@ndp.on.ca

Ann-Marie Norio, Clerk, Niagara Region Ann-Marie.Norio@niagararegion.ca

Local Area Municipalities



The Corporation of the Municipality of Wawa

REGULAR COUNCIL MEETING

RESOLUTION

Tuesday, July 23, 2024

Resolution # RC24166	Meeting Order: 9
Moved by: <i>M Hatfield</i>	Seconded by: <i>Cathy Cannon</i>

WHEREAS the increased importation and use of non-Original Equipment Manufacturer (OEM) aftermarket batteries is presenting a significant increase in fire and explosion, putting citizens and responding personnel in danger and;

WHEREAS these after market batteries are not Underwriter Laboratories of Canada (ULC) certified but can be imported into Canada without any associated regulations and;

WHEREAS unlicensed persons and locations can store and modify lithium-ion batteries in our communities without regulations, providing dangerous conditions within a community and charging these batteries within the home or multi-unit dwellings can result in larger fires with grave results and;

WHEREAS as Canada becomes more aware of Green Energy solutions, these batteries are used more often, increasing the danger to our communities;

THEREFORE BE IT RESOLVED that Council of the Corporation of the Municipality of Wawa does hereby support the Ontario Fire Marshal's program to educate citizens on the danger associated with lithium-ion batteries and encourage every municipality to actively promote safe practices for the use of lithium-ion batteries and;

FURTHERMORE that Council does hereby call upon all levels of government to enact regulations for the importation, sale, storage, and use of non-OEM or ULC certified lithium-ion batteries and that this resolution be shared with the Township of Otonabee-South Monaghan, the Ontario Municipal Fire Prevention Officers Association and all Ontario Municipalities.

RESOLUTION RESULT	RECORDED VOTE	YES	NO
<input checked="" type="checkbox"/> CARRIED	MAYOR AND COUNCIL		
<input type="checkbox"/> DEFEATED	Mitch Hatfield		
<input type="checkbox"/> TABLED	Cathy Cannon		
<input type="checkbox"/> RECORDED VOTE (SEE RIGHT)	Melanie Pilon		
<input type="checkbox"/> PECUNIARY INTEREST DECLARED	Jim Hoffmann		
<input type="checkbox"/> WITHDRAWN	Joseph Opato		

Disclosure of Pecuniary Interest and the general nature thereof.

Disclosed the pecuniary interest and general name thereof and abstained from the discussion, vote and influence.

Clerk:

MAYOR - MELANIE PILON	CLERK - MAURY O'NEILL
<i>M. Pilon</i>	<i>Maury O'Neill</i>

This document is available in alternate formats.



Township of North Dundas
636 St. Lawrence Street
Winchester, ON K0C 2K0

T: (613) 774-2105
F: (613) 774 - 5699

Sent Via Email

30 July 2024

Hon. Doug Ford (Premier of Ontario)
Hon. Sylvia Jones (Ontario Minister of Health)
Dr. Kieran Moore (Chief Medical Officer of Health)
Eric Duncan, MP (Stormont-Dundas-South Glengarry)
Nolan Quinn, MPP (Stormont-Dundas-South Glengarry)
Association of Municipalities of Ontario (AMO)
Ontario Medical Association (OMA)
Eastern Ontario Warden's Caucus (EOWC)
All Ontario Municipalities

Re: Township of North Dundas Council Meeting – July 18, 2024 – Request for the Provincial Government to Recognize the Physician Shortage in the Township of North Dundas.

Please be advised that the Council of the Township of North Dundas, at its regular meeting held July 18, 2024, passed the following resolution:

Moved By: Deputy Mayor Bergeron

Seconded By: Councillor Annable

WHEREAS the state of health care in Ontario is in crisis, with 2.3 million Ontarians lacking access to a family doctor, emergency room closures across the province, patients being de-rostered and 40% of family doctors considering retirement over the next five years; and

WHEREAS it has becoming increasingly challenging to attract and retain an adequate healthcare workforce throughout the health sector across Ontario; and

WHEREAS Ontario municipal governments play an integral role in the health care system through responsibilities in public health, long-term care, paramedicine, and other investments; and

WHEREAS the percentage of family physicians practicing comprehensive family medicine has declined from 77 in 2008 to 65 percent in 2022; and

WHEREAS per capita health-care spending in Ontario is the lowest of all provinces in Canada; and

WHEREAS a robust workforce developed through a provincial, sector-wide health human resources strategy would significantly improve access to health services across the province;

NOW THEREFORE BE IT RESOLVED THAT the Council of the Township of North Dundas urges the Province of Ontario to recognize the physician shortage in the Township of North Dundas and Ontario, to fund health care appropriately and ensure every Ontarian has access to physician care.

Carried

Should you have any questions or concerns, please contact me at 613-774-2105 ext. 226 or via email at njohnston@northdundas.com.

Best Regards,



Nancy Johnston, MBA

Director of Corporate Services/Clerk

Whereas Ontario municipal governments play an integral role in the health care system through responsibilities in public health, long-term care, paramedicine, and other investments; and,

Whereas the percentage of family physicians practicing comprehensive family medicine has declined from 77 in 2008 to 65 percent in 2022; and,

Whereas per capita health-care spending in Ontario is the lowest of all provinces in Canada, and,

Whereas a robust workforce developed through a provincial, sector-wide health human resources strategy would significantly improve access to health services across the province;

Now Therefore Be It Resolved That the Council of the County of Frontenac urges the Province of Ontario to recognize the physician shortage in Frontenac County and Ontario, to fund health care appropriately, and ensure every Ontarian has access to physician care.

Carried

Should you have any questions or concerns, please do not hesitate to contact me at 613-548-9400, ext. 302 or via email at jamini@frontenacounty.ca.

Yours Truly,



Jannette Amini, Dipl.M.M., M.A. CMO
Manager of Legislative Services/Clerk

Copy: File

July 29, 2024

**City of Hamilton
Haldimand County
Regional Municipality of Niagara
Local Area Municipalities**

SENT ELECTRONICALLY

Report No. FA-38-24 RE: Watershed Natural Assets Analysis and Valuation

At the Board of Directors meeting held on July 19, 2024, the following resolution was passed:

Resolution No. FA-82-2024

Moved by: Stew Beattie

Seconded by: Donna Cridland

THAT Report No. FA-38-24 RE: Watershed Natural Assets Analysis and Valuation
BE RECEIVED;

AND THAT a copy of Report No. FA-38-24 RE: Watershed Natural Assets Analysis
and Valuation **BE CIRCULATED** to NPCA watershed municipalities.

Those interested can learn about the value of nature-based solutions in the watershed [here](#). A copy of Report No. FA-38-24 is enclosed for reference and associated appendices are available on request.

Staff leading this initiative invite Councils or staff to reach out if they are interested in how a Natural Assets Analysis can support their municipal asset management planning. I welcome you to connect with me via email at mdavis@npca.ca if there is interest in learning more.

Sincerely,



Melanie Davis
Manager, Office of the CAO & Board
Niagara Peninsula Conservation Authority
905.788.3135 ext. 250

cc: Chandra Sharma, CAO / Secretary – Treasurer
Leilani Lee-Yates, Director, Watershed Strategies & Climate Change
Natalie Green, Manager, Climate Change & Special Programs
Tara Gaade, Program Coordinator, Watershed Strategies & Climate Research
Cathy Coverdale, Manager, Financial Services

Report To: Board of Directors

Subject: Watershed Natural Assets Analysis and Valuation

Report No: FA-38-24

Date: July 19, 2024

Recommendation:

THAT Report No. FA-38-24 RE: Watershed Natural Assets Analysis and Valuation **BE RECEIVED**;

AND THAT a copy of Report No. FA-38-24 RE: Watershed Natural Assets Analysis and Valuation **BE CIRCULATED** to NPCA watershed municipalities.

Purpose:

To inform the Board of Directors about the results of the NPCA's watershed natural asset analysis, assessment and valuation project, including the Town of Fort Erie case study.

Background:

Nature is a valuable infrastructure asset critical for mitigating and adapting to the effects of climate change. With its role in watershed-based natural resource management, the NPCA is a key leader in implementing local climate change adaptation and mitigation initiatives such as water monitoring, flood forecasting and warning, floodplain mapping and flood infrastructure risk management, ecosystem restoration and stewardship, land securement, and natural asset management.

In 2019, the NPCA Board of Directors declared a climate change emergency through approval of Resolution No. 174-2019 recognizing the critical need to act on the impacts and effects of climate change across the NPCA watershed. More recently, climate change was identified as a critical priority under the NPCA's 2021-2031 strategic plan which includes numerous climate-related actions across six strategic priorities. The relevant strategic plan's goals and actions have been integrated within the NPCA's Climate Change Action Plan (CCAP) which is currently being implemented and finalized by staff (refer to FA-39-24 for more information).

The CCAP aims to achieve the following three objectives:

1. Build climate change resilience within the Niagara Peninsula watershed and NPCA properties
2. Reduce NPCA's carbon footprint to achieve net-zero greenhouse gas (GHG) emissions by 2050
3. Engage with NPCA staff, partners, and stakeholders to accelerate local climate change action

Following the December 2022 approval of the CCAP framework (Report FA-50-22), extensive staff engagements were conducted to help shape the details/actions of the plan, including updating the six updated key outcomes as follows:

- Outcome 1 Targets for corporate GHG reduction established
- Outcome 2 Understand climate change impacts and vulnerabilities to the Niagara Peninsula watershed jurisdiction, including on NPCA properties.
- Outcome 3 Increase climate change resiliency throughout the watershed.
- Outcome 4 Enhanced climate change resiliency at NPCA properties.
- Outcome 5 Improved corporate sustainability practices
- Outcome 6 Collaboration with external partners to advance research and on-the-ground climate action.

As part of the NPCA's climate change initiatives (related to CCAP outcomes 2, 3, 4, and 6), NPCA initiated a project to undertake a natural asset inventory, analysis and valuation project for the Niagara Peninsula watershed. The project also included a case study application of natural asset management approaches for the Town of Fort Erie and help them meet regulatory requirements for incorporating green infrastructure into asset management plans.

In September 2023, staff provided an update on the NPCA's asset management initiatives including tangible capital asset management planning, the watershed natural heritage asset project, and overview of a pilot project with the Town of Fort Erie (Report FA-38-23).

Discussion:

Natural or green infrastructure, also called nature-based solutions, are those natural or human-made elements that provide essential services to people and the environment, such as carbon uptake (i.e., sequestration) and storage, protecting against flood and erosion, supporting biodiversity, providing shade/cooling effects, improving water quality, and many human health and recreational benefits.

In Q3 of 2023, in accordance with corporate procurement policies, NPCA retained Green Analytics to support the completion of a watershed-wide natural asset management project using NPCA's recently updated natural areas inventory and ecological land classification data. The purpose of the project was to: create an inventory of natural assets across three levels ranging from general natural areas to specific ecosystem types, better understand the

state of the assets through an ecosystem-based condition assessment, and estimate the value of natural assets using replacement cost and provision of ecosystem services.

The information from this project is critical for watershed management, land acquisition, conservation area land planning, natural asset management, financial planning, and targeted habitat restoration.

Natural Asset Inventory

The final report, attached as Appendix 1, shows that altogether agricultural, natural, and pervious area assets cover 83.5% of the NPCA's watershed. Agricultural land dominates the natural asset composition within the NPCA watershed, covering 52.6% of the watershed while natural assets comprise 28.1% of the NPCA watershed.

Condition Assessment

A condition assessment was conducted using a desktop approach to produce a high-level evaluation of an asset's ability to provide ecosystem services, such as nature-based recreation, air pollution filtration, and storm water attenuation.

To assess natural asset condition, a set of nine indicators were used following the approach outlined in the Canadian Standards Association (CSA) for natural asset inventories. The indicator criteria were categorized into either landscape context (e.g., percent of forest cover, percent wetland cover, extent of adjacent permeable land uses) or physical context (e.g., interior habitat, natural area patch shape, road density, proximity to watercourses, forest proximity to other natural assets, and wetland proximity to other natural assets).

The underlying assumption for natural asset condition assessments is that an asset in "good" condition (from an ecological perspective) is anticipated to be able to provide a "good" level of ecological services. The condition assessment found that 59% of the watershed's natural assets are in 'good' condition and 40% in 'fair' condition. Notably, 89% of wetland assets rated as good and other natural assets generally rated fair.

Replacement Costs

In the context of tangible capital asset management processes, a replacement cost includes the comprehensive costs for replacing and maintaining as asset through its lifecycle; however, estimating replacement costs for natural assets can be challenging because natural assets are irreplaceable in an ecological sense, may not have a historical or capital construction cost, and gain more value as they age (unlike capital assets that depreciate over time).

Using the established natural asset guidance and scientific literature, the estimated replacement costs for the natural assets within the Niagara Peninsula watershed was estimated to exceed \$10 billion, based on per unit restoration costs. Overall, forest assets account for 46% and wetlands account for 44% of the total replacement cost. It is important

to note that the estimate accounts for the complexity and extended time required to restore natural assets.

Ecosystem Service Valuation

Natural assets support climate change mitigation efforts through carbon sequestration, where carbon is removed from the atmosphere and stored within the asset. They also support climate adaptation efforts through the provision of other ecosystem services, such as stormwater attenuation, supporting biodiversity, and more.

The amount of carbon sequestration and storage was evaluated for forest and non-forest assets in the NPCA watersheds. The study found that forest assets, including forested wetlands, within the NPCA jurisdiction exhibit carbon sequestration rates ranging from 0.25 to over 2.5 tonnes of carbon per ha annually. Carbon storage for forest assets within the NPCA watershed surpasses 1.3 tonnes, with a weighted average of approximately 261 tonnes per ha. Sequestration rates for non-forest assets were derived from literature and vary by asset type ranging from 0.3 to 2.16 tonnes carbon per ha.

Natural assets also provide numerous additional ecosystem services such as nature-based recreation, air quality regulation, stormwater regulation, habitat preservation, and contribution to crop productivity. The report assessed these select ecosystem services delivered by natural assets within NPCA's watershed. Using established methods and scientific literature, the value of the ecosystem services was estimated at \$331 million to \$463 million, annually. Nature-based recreation and stormwater regulation were identified as the most valuable services. It is important to note that the study only examined a subset of ecosystem services as noted and that the value is considered an underestimate of the true value of natural asset service provision.

Supporting our Municipal Partners: Fort Erie Natural Asset Inventory Pilot Project

As part of this watershed analysis project and through a collaborative approach with the Town of Fort Erie, NPCA staff led a Fort Erie natural assets inventory and assessment project to help the municipality fulfill the requirements of *O. Reg. 588/17*. Given the NPCA's role in watershed-based natural resource management, most of the natural asset data was readily available and up to date. NPCA staff filled critical data gaps relating to urban street trees while other green infrastructure data were provided by the Town of Fort Erie.

The Fort Erie natural asset project provides an evaluation of the municipality's natural assets and their capacity to deliver services. The report showcases the inventory, condition, risks, level of services, ecosystem service valuations, and replacement costs associated with Fort Erie's natural assets, which include various land covers such as forests, wetlands, and waterbodies. This information will help the Town of Fort Erie meet its asset management planning requirements for green infrastructure under *O. Reg. 588/17*.

The final report was provided to municipal staff for incorporation into the Town's asset management plan and approval by Council at their [July 8, 2024 meeting](#).

Next steps

With the completion of the watershed natural assets analysis and valuation project, NPCA staff will continue to advance our work in this emerging field and will develop a workplan to:

- Integrate natural asset information into NPCA asset management planning process and policies, as applicable.
- Complete data collection at NPCA conservation areas to fill remaining data gaps related to enhanced assets, such as park, trees, and trails.
- Determine best practices for data management and sharing.
- Continue to collaborate with Conservation Ontario and other conservation authorities engaged in natural asset initiatives (i.e., Toronto & Region, Credit Valley, Halton Region, Lake Simcoe Region, and Ausable Bayfield) to support knowledge sharing and build a community of practice amongst Ontario's Conservation Authorities and municipal partners in natural asset management.
- Explore additional opportunities to support watershed municipalities, as appropriate, by providing natural asset inventory and valuation information.
- Develop a program to update the watershed natural asset inventory as new data becomes available and conduct field-based condition assessment and risk assessments to detect changes over time, enabling proactive management and early identification of threats for timely intervention.

Financial Implications:

The Watershed Natural Assets Analysis and Valuation project was supported through the approved operational budgets. The NPCA entered a partnership with the Town of Fort Erie to complete the Fort Erie Natural Asset Inventory Pilot Project with cash and in-kind contributions from both partners.

Links to Policy/Strategic Plan:

Goal 2.3 – Lead the implementation of sustainable technologies and green infrastructure best practices for climate resiliency and sustainability.

Goal 4.1 – strengthen government relations toward collective outcomes and impact

Goal 6.3 – Improve asset management and close the state of good repair

Related Reports and Appendices:

Appendix 1: Final Report Niagara Peninsula Watershed Natural Asset Analysis & Valuation

Appendix 2: Presentation by Amy Taylor, Green Analytics, Niagara Peninsula Watershed Natural Asset Analysis and Valuation

Co-Authored by:

Original Signed by:

Natalie Green, M.Sc., PMP, Manager, Climate Change & Special Programs
Tara Gaade, Program Coordinator, Watershed Strategies & Climate Research
Cathy Coverdale, CPA, CGA, Manager, Financial Services

Reviewed by:

Original Signed by:

Leilani Lee-Yates
Director, Watershed Strategies and Climate Change

Submitted by:

Original Signed by:

Chandra Sharma, MCIP, RPP
Chief Administrative Officer/Secretary-Treasurer



The Corporation of the Municipality of Wawa

REGULAR COUNCIL MEETING

RESOLUTION

Tuesday, July 23, 2024

Resolution # RC24163	Meeting Order: 6
Moved by: <i>Joseph Opato</i>	Seconded by: <i>M Hatfield</i>

WHEREAS Council of the Municipality of Wawa received correspondence from the Municipality of Tweed dated June 17, 2024 regarding a request for the government to implement sustainable funding for small rural municipalities by reabsorbing the cost of the Ontario Provincial Police Force back into the provincial budget with no cost recovery to municipalities;

THEREFORE BE IT RESOLVED that Council of the Corporation of the Municipality of Wawa does hereby endorse the letter from the Municipality of Tweed and request the Government to immediately implement sustainable funding for small rural municipalities by reabsorbing the cost of the Ontario Provincial Police Force back into the provincial budget with no cost recovery to municipalities and;

FURTHERMORE that a copy of the resolution be circulated to Premier Doug Ford, Minister of Solicitor General, Minister of Finance, the Association of Municipalities of Ontario and all Municipalities in Ontario.

RESOLUTION RESULT	RECORDED VOTE	YES	NO
<input checked="" type="checkbox"/> CARRIED	MAYOR AND COUNCIL		
<input type="checkbox"/> DEFEATED	Mitch Hatfield		
<input type="checkbox"/> TABLED	Cathy Cannon		
<input type="checkbox"/> RECORDED VOTE (SEE RIGHT)	Melanie Pilon		
<input type="checkbox"/> PECUNIARY INTEREST DECLARED	Jim Hoffmann		
<input type="checkbox"/> WITHDRAWN	Joseph Opato		

Disclosure of Pecuniary Interest and the general nature thereof.

Disclosed the pecuniary interest and general name thereof and abstained from the discussion, vote and influence.

Clerk: _____

MAYOR - MELANIE PILON <i>M. Pilon</i>	CLERK - MAURY O'NEILL <i>Maury Meill</i>
--	---

Municipality of Tweed Council Meeting
Council Meeting



Resolution No. 229
Title: Councillor P. Valiquette
Date: Tuesday, April 23, 2024

Moved by P. Valiquette
Seconded by J. Palmateer

WHEREAS it is apparent that the Ontario Government has overlooked the needs of small rural Ontario;
AND WHEREAS Ontario's small rural municipalities face insurmountable challenges to fund both upfront investments and ongoing maintenance of their capital assets including roads, bridges, water/wastewater and municipally owned buildings including recreational facilities, libraries and other tangible capital assets;

AND WHEREAS small rural Ontario's operating needs consume the majority of property tax revenue sources;

AND WHEREAS small rural municipalities (of 10,000 people or less) are facing monumental infrastructure deficits that cannot be adequately addressed through property tax revenue alone;

AND WHEREAS in 2015 the provincial government moved to standardized billing for all non-contract J.P.P. (5.1) locations;

AND WHEREAS the Ontario Government has committed \$9.1 billion to Toronto alone to assist with operating deficits and the repatriation of the Don Valley and Gardner Expressway; and \$534 million to Ottawa for the repatriation of Hwy 174;

AND WHEREAS the annual cost of the Ontario Provincial Police, Municipal Policing Bureau for small rural non-contract (5.1) municipalities is approximately \$428 million;

AND WHEREAS this annual cost is significantly less than the repatriation costs of the Gardiner Express Way, the Don Valley Parkway and Highway 174 (Ottawa Region) but provides a greater impact to the residents of the Province overall;

AND WHEREAS this will afford relief to small rural municipalities for both infrastructure and operating needs while having a minimal impact on the provincial budget;

NOW THEREFORE BE IT RESOLVED THAT The Municipality of Tweed call on the Ontario Government to immediately implement sustainable funding for small rural municipalities by reabsorbing the cost of the Ontario Provincial Police Force back into the provincial budget with no cost recovery to municipalities;

AND FURTHER, that Council direct staff to circulate this resolution to Premier Doug Ford (premier@ontario.ca), Minister of Solicitor General, Minister of Finance, and to the Association of Municipalities of Ontario (amo@amo.on.ca) and all Municipalities in Ontario.

Carried

July 29, 2024

**City of Hamilton
Haldimand County
Regional Municipality of Niagara
Local Area Municipalities**

SENT ELECTRONICALLY

Report No. FA-34-24 RE: Integrated Watershed Monitoring and Reporting

At the Board of Directors meeting held on July 19, 2024, the following resolution was passed:

Resolution No. FA-88-2024

Moved by: Stew Beattie

Seconded by: Robert Foster

THAT Report No. FA-34-24 RE: Integrated Watershed Monitoring and Reporting
BE RECEIVED;

AND THAT the Enhanced Integrated Watershed Monitoring Program and
associated implementation recommendations **BE ENDORSED;**

AND FURTHER THAT a copy of Report No. FA-34-24 RE: Integrated Watershed
Monitoring and Reporting **BE CIRCULATED** to NPCA watershed municipalities for
their information.

A copy of Report No. FA-34-24 and associated appendices are enclosed for reference. The Watershed Monitoring & Reporting team invites those interested in learning more about the integrated watershed monitoring & reporting program to connect for further discussion. Please reach out via email at mdavis@npca.ca if there is interest in learning more.

Sincerely,



Melanie Davis
Manager, Office of the CAO & Board
Niagara Peninsula Conservation Authority
905.788.3135 ext. 250

cc: Chandra Sharma, CAO / Secretary – Treasurer
Leilani Lee-Yates, Director, Watershed Strategies & Climate Change
Josh Diamond, Manager, Watershed Monitoring & Reporting

Report To: Board of Directors

Subject: Niagara Peninsula Conservation Authority Enhanced Integrated Watershed Monitoring Program

Report No: FA-34-24

Date: July 19, 2024

Recommendation:

THAT Report No. FA-34-24 RE: Niagara Peninsula Conservation Authority Enhanced Integrated Watershed Monitoring Program **BE RECEIVED**;

AND THAT the Enhanced Integrated Watershed Monitoring Program and associated implementation recommendations **BE ENDORSED**;

AND FURTHER THAT staff Report No. FA-34-24 RE: Niagara Peninsula Conservation Authority Enhanced Integrated Watershed Monitoring Program **BE CIRCULATED** to NPCA watershed municipalities for their information.

Purpose:

The purpose of this report is to provide an overview of the Niagara Peninsula Conservation Authority's (NPCA) Enhanced Integrated Watershed Monitoring Program (IWMP) and obtain the endorsement of the Board of Directors for the program's continued implementation.

Background:

NPCA's 2021-2031 Strategic Plan identifies the need to address watershed data gaps to support evidence-based decision-making for climate-resilient watersheds. The Strategic Plan further establishes specific goals to:

- Expand and enhance monitoring and associated tools to fill information gaps and research needs
- Lead water quality (e.g., surface and groundwater) and quantity monitoring throughout the NPCA jurisdiction

- Support municipal partners with watershed data collection and analysis to understand cumulative impacts
- Develop a solid understanding of climate impacts and risks on NPCA watersheds

Further, the *Conservation Authorities Act* and Ontario Regulation (O. Reg.) 686/21: Mandatory Programs and Services requires NPCA to develop a Watershed-based Resource Management Strategy that will need to be supported by an enhanced watershed monitoring program to address data gaps and support decisions for a healthy watershed. Work began in 2023, to develop an enhanced IWMP.

Discussion:

The "Niagara Peninsula Conservation Authority Enhanced Integrated Watershed Monitoring Program" document in Appendix 1, outlines the current monitoring and reporting programs run by the NPCA, either alone or with partners. It emphasizes programs essential for understanding watershed health and managing NPCA activities like hydrometry, water quality, ecology, regulatory compliance, community science, and restoration. The IWMP considers reorganizing and expanding monitoring efforts across various areas to better assess ecosystem health, gather data for NPCA programs, and continue to provide monitoring services to municipalities and other clients within the NPCA watershed jurisdiction.

Beginning in 2023, the NPCA Watershed Monitoring and Reporting team led the following key activities to inform the development of the enhanced IWMP:

- Inventory of existing NPCA monitoring programs;
- Comprehensive NPCA monitoring gap analysis;
- Formation of the internal Integrated Watershed Monitoring Program Advisory Group;
- A facilitated session with the Integrated Watershed Monitoring Program Advisory Group and additional technical staff;
- Municipal partner meetings;
- Engagement with the NPCA Public Advisory Committee; and
- Formation of an internal Project Intake Team.

The objective of the NPCA enhanced IWMP is to comprehensively assess the ecological health and resilience of the watershed through monitoring initiatives, to inform evidence-based conservation and management strategies for the NPCA watershed.

Integrated Watershed Monitoring Program Conceptual Model

To support the IWMP's objective, a conceptual model has been developed that identifies three key Watershed Monitoring Program areas and four key Monitoring Support Systems that are further detailed in Appendix 2.

The three Watershed Monitoring Areas are:

1. Long-Term Watershed Monitoring,
2. Corporate Support Services, and
3. Monitoring Service Provider.

The four Monitoring Support Systems include:

1. Corporate Services,
2. Data Management and GIS
3. Communications, and
4. External Partnerships and Data.

Within the purview of the IWMP are long-term monitoring initiatives encompassing water quantity, surface water, groundwater, terrestrial and watershed landscape components. These programs form the cornerstone of the NPCA's monitoring efforts, providing crucial data for informed decision-making and environmental management. The Program also identifies internal monitoring needs, while also providing opportunities for external environmental monitoring services.

Long-Term Watershed Monitoring and Reporting Program

The goals of NPCA's Long-Term Integrated Monitoring and Reporting Program area are:

- To establish baseline conditions by understanding natural variability and ecological thresholds within the NPCA watershed;
- To assess the temporal and spatial conditions of aquatic and terrestrial resources at various locations across the watershed compared to established baselines; and
- To identify potential stressors and emerging threats that could be addressed through other programs.

Monitoring Units for this Program include:

1. Surface Water Monitoring: Water chemistry, stream benthic macroinvertebrates and stream temperature, fish communities and fluvial geomorphology monitoring components.
2. Groundwater Monitoring: Water chemistry and water levels monitoring components.
3. Terrestrial Monitoring: Forest, wetland, and wildlife monitoring components.

4. Hydrometric Monitoring: Water quantity and climate monitoring components.
5. Watershed Landscape Analysis: Watershed scale analysis of various landscape components to monitor changes over time.

Components of the long-term watershed monitoring program are provincially mandated, such as the surface and groundwater Provincial Monitoring Networks implemented by the NPCA, and the hydrometric monitoring that supports NPCA's flood forecast and warning system.

Corporate Support Services Program

The goal of the NPCA Corporate Support Service monitoring area is to provide monitoring services and expert advice for NPCA's internal department programs and projects.

Monitoring Units for this Program include:

1. Environmental Permissions: Required regulatory monitoring related to NPCA Conservation Area services and infrastructure.
2. Conservation Areas Beach Monitoring: Monitoring of bacterial (E. coli) at NPCA swimming areas at Long Beach and Chippawa Creek Conservation Areas.
3. Restoration Monitoring Program: Monitoring of restoration project progression after implementation for adaptive management options.
4. Conservation Area Management Plans: Range of environmental inventories and monitoring studies to inform Conservation Area Management Plans.
5. Conservation Area Lands Ecological Monitoring: Range of monitoring programs for Conservation Areas to assess a variety of management areas for NPCA properties.
6. Climate Change: Climate change affects all aspects of the NPCA watershed and can be monitored through a variety of watershed components and functions.
7. Low Impact Development Monitoring: Low Impact Development Monitoring program can track the effectiveness of LID measures on NPCA lands.
8. Community Science Monitoring: This program partners with citizens and NGOs to collect various environmental monitoring data.

Monitoring Service Provider Program

The goal of the NPCA Monitoring Service Provider Area is to provide environmental monitoring services to external partners within the Niagara Peninsula watershed.

A wide range of environmental inventory and monitoring services can be made

available, such as ecological, environmental permissions, climate change and LID performance monitoring. Current projects include the Niagara Region surface water chemistry, City of Hamilton Glanbrook Landfill Bioassessment, and Hamilton International Airport Bioassessment.

Program Implementation

The “Niagara Peninsula Conservation Authority Enhanced Integrated Watershed Monitoring Program” document includes several recommendations to implement the Program. Each recommendation is accompanied by actions to be implemented by 2031. These recommendations are:

- Recommendation 1:
That the NPCA **prioritize and enhance the Long-Term Watershed Monitoring program** within the IWMP, as it is essential for understanding and managing ecosystems, supporting scientific research, conservation initiatives, and inform decision-making to ensure ecosystem resilience against ongoing environmental changes.
- Recommendation 2:
That the NPCA will **continue to regularly report results of its environmental monitoring programs** in an understandable and accessible format to support decision-making by the NPCA and its partners to enhance watershed health and community awareness.
- Recommendation 3:
That the NPCA **ensures the IWMP has a robust Corporate Support Services Monitoring Area** to incorporate internal monitoring components through collaboration, optimize resource allocation, and better define the scope and capacity of crucial monitoring programs and projects across multiple departments and divisions.
- Recommendation 4:
That the NPCA will **continue to increase the capacity of its monitoring and inventory services within the IWMP** to enable NPCA to become a comprehensive environmental monitoring provider for watershed partners, including municipalities, provincial and federal agencies, and private companies.
- Recommendation 5:
That the NPCA will **continue to collaborate** with municipal and community partners, agriculture, academia, and indigenous communities moving forward.

- Recommendation 6:
That the NPCA will **continue to explore efficiencies and innovations** to continuously improve the IWMP.

A Watershed-based Resource Management Strategy is to be developed by the end of 2024, as required under the *Conservation Authorities Act* and O. Reg. 686/21: Mandatory Programs and Services. The enhanced IWMP will be an integral part of the Watershed-based Resource Management Strategy.

Financial Implications:

There are no current financial implications associated with the preparation of the "Niagara Peninsula Conservation Authority Enhanced Integrated Watershed Monitoring Program" document. Further program development and scoping will be accounted for in future budgets, supported by a long-term budget plan guided by the Watershed-based Resource Management Strategy. Specialized monitoring services for municipalities and external stakeholders will be on a fee-for-service basis based on a Board-approved fee schedule.

Links to Policy/Strategic Plan:

The NPCA 2021-2031 Strategic Plan has identified an Integrated Watershed Monitoring Program as a critical priority to help achieve the goals outlined under the Healthy and Climate Resilient Watersheds strategic priority. The IWMP further advances the following additional goals in the 2021-2031 Strategic Plan:

Goal 3.1 – Create equitable access to greenspace for the health and well-being of people.

Goal 3.2 – Lead nature education, environmental stewardship, and volunteerism.

Goal 4.1 – Strengthen government relations toward collective outcomes and impact.

Goal 4.3 – Improve engagement with local First Nations, Métis, and Inuit peoples that support shared stewardship.

Goal 5.2 – Improve internal operations and processes.

Goal 6.2 – Optimize self-generating revenue using innovative approaches.

The program supports NPCA's vision of "Nature for all" that envisions a healthy and vibrant environment with shared greenspace and clean water that sustains life for future generations.

Related Reports and Appendices:

Appendix 1: Niagara Peninsula Conservation Authority Enhanced Integrated Watershed Monitoring Program (Draft)

Appendix 2: Niagara Peninsula Conservation Authority Enhanced Integrated Watershed Monitoring Program Conceptual Model

Authored by:

Original Signed by:

Joshua Diamond, M.Sc. C. Tech.
Manager, Watershed Monitoring and Reporting

Reviewed by:

Original Signed by:

Leilani Lee-Yates, BES, MSPL.RPD, MCIP, RPP
Director, Watershed Strategies and Climate Change
Interim Director, Planning and Development

Submitted by:

Original Signed by:

Chandra Sharma, MCIP, RPP
Chief Administrative Officer/Secretary-Treasurer



Niagara Peninsula Conservation Authority Enhanced Integrated Watershed Monitoring Program

July 19, 2024



www.npca.ca

LAND ACKNOWLEDGEMENT

The Niagara Peninsula watershed is situated within the traditional territory of the Haudenosaunee, Attiwoonderonk (Neutral), and the Anishinaabeg, including the Mississaugas of the Credit many of whom continue to live and work here today. This territory is covered by the Upper Canada Treaties (No. 3, 4, and 381) and is within the land protected by the Dish with One Spoon Wampum agreement. Today, the watershed is home to First Nations, Metis, and Inuit.

Through the NPCA's strategic plan, the NPCA re-confirms its commitment to shared stewardship of natural resources and deep appreciation of Indigenous culture and history in the watershed.

PROJECT ACKNOWLEDGEMENTS

Technical input and information by provided by several staff at the Niagara Peninsula Conservation Authority was instrumental to the completion of this document and their efforts are gratefully acknowledged:

Eric Augustino
Eric Baldin
David Deluce
Carly Fazekas
Kim Frohlich
Tara Gaade
Steve Gillis
Natalie Green
Ryan Kitchen
Leilani Lee-Yates
Megan Lalli
Carly Mason
Steve Miller
Amy Parks
Tom Proks
Geoffrey Verkade

Additional input from the NPCA Public Advisory Committee is also acknowledged.

The NPCA would also like to thank Andrea Dunn (Conservation Halton), Lesley McDonell (Hamilton Conservation Authority), Jon Nodwell (Credit Valley Conservation Authority) and Lyndsay Cartwright and Sue Hayes (Toronto and Region Conservation Authority) for meeting, sharing resources and discussing their monitoring programs with our staff.

To be cited as:

Niagara Peninsula Conservation Authority. 2024. Niagara Peninsula Conservation Authority Enhanced Integrated Watershed Monitoring Program. Thorold Ontario. 76 pages.

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CLI-ECA	Consolidated Linear Infrastructure Environmental Compliance Approval
CCME	Canadian Council of Ministers of the Environment
CO	Conservation Ontario
CVC	Credit Valley Conservation Authority
ECAs	Environmental Certification Approvals
ECCC	Environment Climate Change Canada
ELC	Ecological Land Classification
EMAN	Ecological Monitoring and Assessment Network
GIS	Geographic Information System
HIA	Hamilton International Airport
IWMP	Integrated Watershed Monitoring Program
IT	Information technology
LID	Low Impact Development
MECP	(Ontario) Ministry Environment Conservation and Parks
MOU	Memorandums of Understanding
NAI	Natural Areas Inventory
NGO	Non-Governmental Organization
OBBN	Ontario Benthos Biomonitoring Network
OGS	Ontario Geological Survey

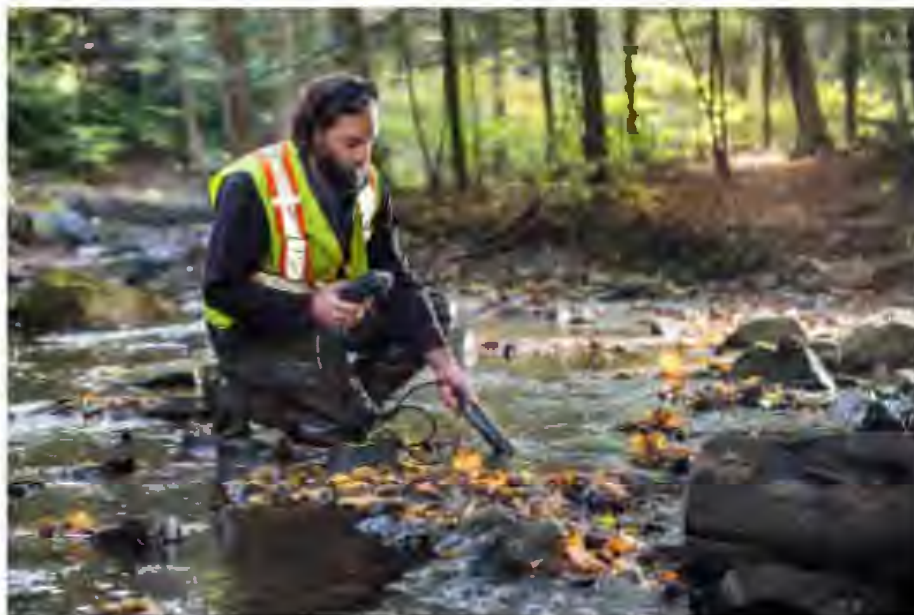
OSAP	Ontario Stream Assessment Protocol
NPCA	Niagara Peninsula Conservation Authority
PCBs	Polychlorinated Biphenyls
PFAS	Per - and polyfluoroalkyl substances
PTTW	Permit to Take Water
PWQMN	Provincial Water Quality Monitoring Network
PWQO	Provincial Water Quality Objectives
RGA	Rapid Geomorphic Assessments
RMN	Regional Municipality of Niagara
SLAs	Service-Level Agreements
SOP	Standard Operating Procedures
TRCA	Toronto and Region Conservation Authority
WSC	Water Surveys Canada
YSI	Yellow Springs Instruments

1.0 INTRODUCTION

The Niagara Peninsula Conservation Authority (NPCA) is developing a new comprehensive Integrated Watershed Monitoring Program (IWMP) in accordance with the 2021-2031 Strategic Plan. Under the strategic priority, “Healthy and Climate Resilient Watersheds,” Goal 1.1 – Support evidence-based decision-making for climate-resilient watersheds and shorelines, several actions related to integrate watershed monitoring are identified. To achieve Goal 1.1, the NPCA will:

- Expand and enhance monitoring and associated tools to fill information gaps and research needs
- Lead water quality (e.g., surface and groundwater) and quantity monitoring throughout the NPCA jurisdiction
- Support municipal partners with watershed data collection and analysis to understand cumulative impacts
- Develop a solid understanding of climate impacts and risks on NPCA watersheds

The performance indicator for Goal 1.1 is a robust data collection program established by 2023 and data gaps filled by 2026. Several metrics are included such as the number and types of data gaps identified (gap analysis), percentage of priority data collection gaps filled and number of surface water and groundwater samples. Work began in 2023, to develop the IWMP to achieve the actions for Goal 1.1 and position NPCA as a leader and partner of choice for collecting, analyzing and reporting on watershed data that supports evidence-based decision making for climate-resilient watersheds and shorelines.



This “Niagara Peninsula Conservation Authority Enhanced Integrated Watershed Monitoring Program” document first describes monitoring and reporting programs currently implemented by the NPCA, either independently or through partnerships. It highlights the monitoring programs fundamental to the understanding of watershed health and informing the management of internal NPCA programs such as hydrometry, water quality, ecology, stewardship and community science, regulatory compliance, and restoration. This document contains expanded monitoring program considerations across several disciplines to allow for a more complete evaluation of ecosystem integrity, data capture for internal NPCA programs, and monitoring services for the municipalities and other clients within the NPCA jurisdiction. These range from short to long-term monitoring initiatives depending on the program. This transition to an integrated approach stresses a focused commitment to robust long-term monitoring initiatives across a variety of monitoring components that can more accurately identify watershed trends. Understanding these trends leads directly to changes in how the NPCA and its watershed partners manage and address impacts to watershed health. The IWMP will support the NPCA’s “Nature for all” vision of a healthy and vibrant environment with shared greenspace and clean water that sustains life for future generations.

2.0 CURRENT NPCA MONITORING PROGRAMS

NPCA's existing monitoring programs were implemented to support the delivery of programs and services that further the conservation, restoration, development, and management of natural resources in NPCA's watersheds, and vary in terms of scope and scale based on their intended purpose. The NPCA's monitoring programs have become an essential tool for flood risk protection, assessing the health of ecosystems, protecting biodiversity, evaluating the state of our watersheds, and promoting sustainable practices. These programs contribute valuable data for informed decision-making, policy development, and community engagement in environmental conservation efforts. Details regarding current monitoring programs that the NPCA administers are found in forthcoming sections.

2.1 NPCA Hydrometric Monitoring Network

2.1.1 Overview

The NPCA is responsible for managing and protecting watersheds, including addressing flood risks. On January 1, 2022, Ontario Regulation 686/21: Mandatory Programs and Services (O. Reg. 686/21) was implemented under the Conservation Authorities Act, requiring Conservation Authorities to provide programs and services related to the risk of natural hazards, including flood forecast and warning, and the management of water and erosion control structures that the Conservation Authority owns. The NPCA's Hydrometric Monitoring Program involves several key components:

- 1) **Hydrometric Monitoring:** Monitoring weather conditions, river levels, and other hydrological parameters is crucial for early detection of potential flood events. This monitoring is often done in real-time, and the data collected helps authorities make informed decisions.
- 2) **Forecasting and Warning Systems:** The objective of this program is to provide the delivery of timely and accurate flood forecasting information to the public, municipalities, first responders, and the media. Should conditions require that the NPCA issue a Flood Warning bulletin, the NPCA posts these messages on the NPCA website, social media platforms, and via email directly to municipalities, first responders, and the media. In the future, the NPCA would like to further develop forecasting models that predict potential flood events based on weather forecasts, river gauging, and other relevant data. These models will assist with issuing timely warnings to communities at risk, allowing for preparedness and evacuation measures.
- 3) **Community Outreach and Education:** Many programs include initiatives to educate the public about flood risks, emergency preparedness, and the importance of following evacuation plans. Public awareness campaigns contribute to community resilience and response during flood events.

- 4) **Infrastructure Management:** NPCA maintains infrastructure designed to manage water flow, such as dams. Regular monitoring, maintenance and upgrades are essential to ensure the effectiveness of these structures.
- 5) **Collaboration with Emergency Services:** NPCA often collaborates with emergency services, municipalities, and other relevant agencies to coordinate response efforts during flood events.

2.1.2 Monitoring Components

The first gauging of streams in the NPCA watershed in the 1950's was established by Environment Canada's Water Survey Division to quantify water resources. Over the years additional stream/river water level gauges were first added by Environment Canada and later by the NPCA. The NPCA modernized its Hydrometric Monitoring Network to include weather stations (rainfall, air temperature, wind speed and direction, soil moisture, barometric pressure, and solar radiation) and snow surveys (snow depth and water equivalent) (OMNR, 1985) across the NPCA watershed. All water quantity stations are shown in **Figure 1** and summarized in **Table 1**.

2.1.3 Data Management

NPCA Hydrometric Monitoring Network produces a large volume of stream level and climate data and currently stores this information in two separate databases. One is the WISKI Database, and the other is in the NPCA's SQL server. Staff are transitioning to process where data is configured and posted to Conservation Ontario's Web data viewer portal (<https://co-opendata-camaps.hub.arcgis.com/>) and Upper Thames River Conservation Authority Web data portal.

2.1.4 Program Reporting

The NPCA's Hydrometric Program is an integral component of the Flood Forecasting and Warning system, and its reporting requirements are those prescribed under regulation (O. Reg. 686/21). These reporting requirements include issuing flood messages to the municipalities and media within their jurisdiction as per respective flood message distribution lists. These messages are the result of NPCA staff providing on-going analysis and knowledge of current and forecasted local watershed and river conditions and flood potential within watershed jurisdiction. The NPCA provides near real-time hydrometric data to the public by posting to NPCA website (<https://npca.ca/watershed-health#flooding-stream-flow-monitoring>). Data can be observed or downloaded from the NPCA webpage.

2.2 Surface Water Quality Monitoring Program

2.2.1 Overview

The NPCA's Water Quality Monitoring Program focuses on the water quality conditions of streams, rivers, and water features of NPCA's watershed and Conservation Areas. Surface water quality monitoring within the NPCA watershed jurisdiction started with Ontario Ministry Environment Conservation and Parks (MECP) and the City of St. Catharines through the Provincial Water Quality Monitoring Network (PWQMN) dating back to the 1960s and 1970s. NPCA was involved in numerous

water quality related initiatives with its watershed partners but did not have a dedicated monitoring program until 2001, when the NPCA Water Quality Monitoring Program was initiated. The NPCA has since established an extensive network of monitoring stations located throughout its watershed jurisdiction with the purpose of gathering long-term data to assess the ambient water quality in local watersheds using a network of chemical and biological monitoring stations. The data collected contributes to the protection of aquatic ecosystems and public health. This monitoring also provides a high-level characterization of existing conditions on a watershed scale and allows for the identification of potential water quality issues in reference to the existing land uses present within the watershed. This network represents the largest and most comprehensive water quality monitoring program in the Niagara Peninsula. The NPCA monitoring network is operated in partnership with the MECP through the PWQMN, Regional Municipality of Niagara (RMN), Haldimand County and City of Hamilton. The NPCA's surface water monitoring program has been designed with flexibility in mind, enabling it to seamlessly integrate new monitoring initiatives. These include sampling programs to monitor contaminants of concern within the watershed, utilization of in-situ water quality datalogger technology, and the provision of fee-for-service biological monitoring services. The NPCA Surface Water Quality Program is summarized in **Table 2**.





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Figure 1. Current NPCA Climate and Hydrometric Network

Table 1: Summary of the NPCA the current Hydrometric Monitoring Network.

NPCA Monitoring Programs	Monitoring Components	Support Programs	Program Purpose
Hydrometric Monitoring Network (Water Quantity and Climate) (2009-present)	<ul style="list-style-type: none"> ➤ Water Level (19 Stations) & Flow (7 Stations) ➤ Snow Surveys (7 Stations) ➤ Air Temperature (7 Stations) ➤ Precipitation (11 Stations) ➤ Wind Conditions (7 Stations) ➤ Relative Humidity (2 Stations) 	Water Surveys Canada (WSC) and Niagara Region	<ol style="list-style-type: none"> 1) Watershed Management 2) Flood Forecasting and Warning 3) Climate Change Monitoring 4) Water Budgets (Source Water Protection and Development Applications) 5) Ontario Low Water Program



Figure 2: NPCA Surface Water Monitoring Network Program Stations



Figure 3. NPCA Conservation Area Properties

Table 2: Summary of NPCA Surface Water Quality Monitoring Program.

NPCA Monitoring Program	Monitoring Components	Support Programs	Program Purpose
<p>Surface Water Quality Monitoring Program (2001-present)</p>	<ul style="list-style-type: none"> ➤ Surface Water Chemistry (83 Stations) ➤ Benthic Macroinvertebrate Communities (65 Stations) ➤ In Situ-Water Quality Sensors (6 Stations) ➤ Stream Water Temperature (9-12 Stations) ➤ Special Contaminates Polychlorinated Biphenyls (1 Station) and Per-Polyfluoroalkyl (1 Station) ➤ Fluvial Geomorphology (40 Stations) 	<p>Ministry of Environment, Conservation and Parks (MECP)-Provincial Surface Water Quality Monitoring Program (PWQMN)</p>	<ol style="list-style-type: none"> 1) Watershed Management 2) Ambient Watershed Surface Water Chemistry 3) Conservation Area Surface Water Quality 4) Twelve Mile Creek Polychlorinated Biphenyls Monitoring 5) Lake Niapenco Per and Polyfluoroalkyl Substances Monitoring 6) Municipal Landfill Monitoring 7) Hamilton Airport Bioassessment 8) Coldwater Watershed Monitoring 9) Climate Change Monitoring

2.2.2 Monitoring Components

Ambient Watershed Surface Water Chemistry

As of 2023 the NPCA Surface Water Chemistry Program currently monitors surface water quality at 83 stations (13 PWQMN & 70 NPCA) across 52 watersheds (**Figure 2**). Surface water samples are collected monthly eight times each year during the ice-free season and analyzed for several parameters including nutrients, metals, bacteria, suspended solids, and general chemistry using PWQMN sampling protocols (MECP, 2020). The NPCA's surface chemical monitoring program is supported in partnership with MECP (PWQMN) and the Niagara Region. Since 2019, additional winter surface water sampling is made available through the MECP at PWQMN monitoring stations.

Biological Monitoring Benthic Macroinvertebrates

The NPCA monitors benthic macroinvertebrates communities as a biological indicator of water quality conditions and overall health of a waterbody because they are sensitive to pollution and human disturbance. For the NPCA's benthic invertebrate monitoring program, samples are collected at 20-25 water quality stations yearly with every accessible surface water station being sampled once every 3 years (**Figure 2**). From 1996 to 2016 the NPCA used the Bioassessment of Water Quality (BioMAP) protocol (Griffiths 1999) for sample collection. In 2017, the NPCA transitioned to the Ontario Benthos Biomonitoring Network (OBBN) sampling protocol (Jones et al. 2006).

In-Situ Stream Monitoring Program

Since 2014, the NPCA has deployed in-situ water quality monitoring probes at several key stations used with the watershed. These probes have various water quality sensors like pH, temperature, conductivity, dissolved oxygen, and turbidity. Data from these sensors are logged hourly and are downloaded at monthly intervals. Since 2017, the NPCA has integrated six EXO Yellow Springs Instruments (YSI) water quality monitoring probes with 5 NPCA hydrometric stations and 1 at Lake Niapenco.

Conservation Areas Surface Water Quality Monitoring Program

The NPCA Water Quality Monitoring Program was expanded in 2017 to include the waterbodies of the Conservation Areas: Chippawa Creek, Jordan Harbour, Lake Niapenco, Mud Lake, St. John's Pond, Virgil Reservoir, Wainfleet Wetlands and Wainfleet Bog (**Figure 3**). Water samples are collected quarterly or seasonally during the year and analyzed for general chemistry, nutrients, metals, and bacteria.

Conservation Areas Beach Monitoring Program

In 2020, the NPCA initiated a Beach Monitoring Program at Long beach Conservation and Chippawa Creek Conservation Areas. This program replaced Niagara Public Health's Beach Monitoring Program. NPCA collects water quality sampling for bacterial (*E. coli*) counts every other week during the warmer

months, typically beginning in June, and through July and August Ontario (Ministry of Health 2019). The sampling is conducted at Long beach Conservation and Chippawa Creek Conservation Areas. After laboratory analysis, the NPCA posts most recent sampling data available on its webpage (<https://npca.ca/parks-recreation/beach-conditions>). The data collected through this program is not used to identify public health risk when swimming in natural water bodies but is used to determine long-term trends in the water quality at NPCA swimming areas over time.

Stream Water Temperature Monitoring

The focal point of this monitoring program is the upper Twelve Mile Creek watershed. This portion of the watershed contains the last remaining coldwater streams in the NPCA watershed. Coldwater streams are fed by groundwater, and they are characterized by sustained cold water temperatures year-round. These ecosystems support a unique aquatic community adapted for coldwater conditions and significant warming can impact coldwater species from these watersheds. Since 2013, the NPCA initiated a dedicated temperature monitoring program using a network of temperature dataloggers to identify and classify the thermal regime for the Twelve Mile Creek surface water sampling stations and identify any changes that may have occurred to the thermal stability of this watershed.

Per and Polyfluoroalkyl Substances Monitoring Lake Niapenco

Since 2012, the NPCA has been monitoring for Per - and polyfluoroalkyl substances (PFAS) in Lake Niapenco. PFAS were found in the plasma of snapping turtles at Lake Niapenco in 2009 and 2010 by an Environment Canada and Climate Change (ECCC) scientist as part of an organic toxins' accumulation study (de Solla et al. 2012). PFAS track down studies by MECP confirmed the presence of PFAS in Lake Niapenco and identified John C. Munro International Airport as the source of the contamination. The NPCA PFAS monitoring program consists of a single sample collected within Lake Niapenco in late June near the Conservation Area's beach area which provides data on the current PFAS concentrations within the lake.

Lower Twelve Mile Creek Polychlorinated Biphenyls Monitoring Program

In 2020, MECP and City of St. Catharines had been investigating potential offsite impacts on surface water of Twelve Mile Creek from a former industrial area. To support agency partners, the NPCA has developed a Polychlorinated Biphenyls (PCBs) sampling program that was initiated in September 2020. This program was designed to measure ambient water quality conditions upstream and downstream of the former industrial plant on 12 Mile Creek. This program included enhanced monitoring at the PWQMN station and reactivating a former monitoring site. Data from this program is sent quarterly to the City of St. Catharines and MECP staff.

Glanbrook Landfill Biomonitoring Program

At the request of the Glanbrook Landfill Committee, the City of Hamilton contracts the NPCA biennially (since 1996) to monitor macroinvertebrates upstream and downstream of the Glanbrook Landfill to assess any landfill impacts to the adjacent watercourses. The NPCA collects samples in the spring and fall of each monitoring year and a report is provided to the City of Hamilton and the Glanbrook Landfill Committee.

Hamilton Airport Biomonitoring Program

The Hamilton International Airport (HIA) contracts the NPCA to monitor macroinvertebrates in two watercourses that drain from the HIA property. The goal of this program is to determine if stormwater runoff and de-icing fluids such as propylene glycol are impacting surface water quality in two headwater tributaries of the Welland River. The NPCA has been collecting samples in the spring and fall of each since 1998 and the NPCA generates a separate report annually for the HIA for their exclusive information and use.

2.2.3 Data storage

The NPCA's Surface Water Quality Monitoring Program produces a large volume of data that includes stream water chemistry, benthic macroinvertebrate, geomorphological, and time series data through various water quality logger technology. The NPCA utilized several database options to manage these data. The NPCA uses an internal Microsoft Access database to store stream water chemistry data and Excel Database to store logger files. In addition, this program also uses KiWQM and KiECO, which are database management tools from KISTERS which stores both stream benthic macroinvertebrate and water chemistry data. NPCA staff can access the PWQMN data through MECP's Lab Online portal. The public can access PWQMN through the province's Open Data portal (<https://data.ontario.ca/dataset/provincial-stream-water-quality-monitoring-network>).

2.2.4 Reporting

The reporting of surface water quality is a mandated component of the NPCA's water quality monitoring program. The reporting component of the surface water quality data is implemented through the NPCA's water quality monitoring report that is published on an annual basis. This annual reporting uses both Provincial and Federal environmental thresholds such as the Provincial Water Quality Objectives (OMOE 1994) and Canadian Water Quality Guidelines (CCME 2011) and summarizes water chemistry data using the Canadian Water Quality Index (CCME 2001) and the Hilsenhoff Family Biotic Index (Hilsenhoff 1987). In addition, the annual reporting includes the NPCA's expanded surface monitoring programs such as in-situ water quality monitoring by data logger technologies and monitoring results of contaminants of concern. This product is published onto the NPCA webpage (<https://npca.ca/watershed-health#water-quality-monitoring>). The NPCA also participates with Conservation Ontario's Watershed Report Initiative and a portion of data from this program summarized

as part of Watershed Report Card (Conservation Ontario 2022) every 5 years (<https://npca.ca/watershed-health#report-cards>).

2.3 NPCA Groundwater Monitoring Program

2.3.1 Overview

The NPCA Groundwater Monitoring Network comprises of two parts. The first part is the Provincial Groundwater Monitoring Network (PGMN) which is a partnership between the MECP and the Conservation Authorities of Ontario. The PGMN was initiated in 2001 and is a province-wide groundwater monitoring program designed to collect long-term baseline data on groundwater quantity and quality in special areas of interest. The PGMN program has allowed for an accurate assessment of current groundwater conditions and provides information for making sound land use planning decisions. The information collected through the PGMN serves the critical need for baseline groundwater data in the NPCA watershed. Groundwater is monitored through a network of 15 PGMN monitoring wells located throughout the NPCA watershed in locally significant hydrogeological areas. The PGMN program allows for an accurate assessment of current groundwater conditions. It provides an early warning system for changes in water levels or in water quality and provides information for making sound land use planning decisions. The information collected serves the critical need for baseline groundwater data in the region. In 2014 and 2015, the NPCA expanded its groundwater monitoring through a partnership with the Ontario Geological Survey (OGS). Thirty-one monitoring wells were installed at 23 different locations across the NPCA watershed at the top of bedrock in an aquifer zone commonly known as the Contact-Zone Aquifer (**Figure 4**). Three of 23 locations have a set of nested monitoring wells installed at various depths within the overburden sediments. The NPCA Groundwater Quality Program is summarized in **Table 3**.

2.3.2 Monitoring Components

Groundwater Levels

The NPCA's Groundwater Monitoring Network measures groundwater levels in the major aquifers within the NPCA watershed. Groundwater monitoring wells are instrumented with Solinst Levelloggers which are water level dataloggers that use an absolute pressure sensor to detect the depth (or pressure) of water above the logger. These data loggers record groundwater levels hourly and are downloaded by staff 2 to 4 times per year. Groundwater level data files are corrected for barometric pressure from Solinst barologger. In addition, manual static water level measures are also taken to verify and correct water level data. These data assist the NPCA with characterizing the ambient groundwater conditions across the NPCA watershed.

Groundwater Chemistry

Since 2002, the NPCA has been collecting groundwater samples annually in the fall for PGMN monitoring wells. In 2022, sampling was expanded to include the sampling of overburden wells in the spring. NPCA staff use a variety of groundwater pump technologies to collect water samples that follow the MECP sampling protocol. Groundwater samples are submitted and analyzed at the MECP laboratory for general chemistry, nutrients, and metals. For the NPCA's expanded groundwater monitoring network, samples are collected annually in the fall using a protocol developed by the NPCA hydrogeology staff. Groundwater samples collected from these wells are sent to a lab for analysis.

2.3.3 Data storage

The NPCA's Groundwater Monitoring Program produces a large volume of data that includes hourly groundwater level data and water chemistry data. The NPCA utilized several database options to manage these data. For PGMN, the MECP has uses WISKI, a database management tool from KISTERS which stores both groundwater level and water chemistry data. NPCA staff can access the PGMN data through the province's ONE KEY portal. In addition, PGMN data can also be accessed by the public through a website (<https://www.ontario.ca/page/map-provincial-groundwater-monitoring-network>). The NPCA also stores the PGMN water chemistry data with an internal Microsoft Office Access database. The NPCA stores non-PGMN groundwater data that includes groundwater levels and water chemistry data on an NPCA KISTERS WISKI database.

2.3.4 Reporting

The reporting of groundwater data is a mandated component of the NPCA's water quality monitoring program. The reporting component of the groundwater data is implemented through the NPCA's annual water quality monitoring reports. The annual report presents groundwater data using charts that show groundwater level data for the entire time record for each monitoring well in the program. In addition, groundwater chemistry data compared against Ontario Drinking Water Standards (MOE 2003) and is summarized in the NPCA's annual report (NPCA 2024). This product is published onto the NPCA webpage (<https://npca.ca/watershed-health#water-quality-monitoring>). The NPCA also participates with Conservation Ontario's Watershed Report Initiative and a portion of data from this program summarized as part of Watershed Report Card every 5 years (<https://npca.ca/watershed-health#report-cards>).

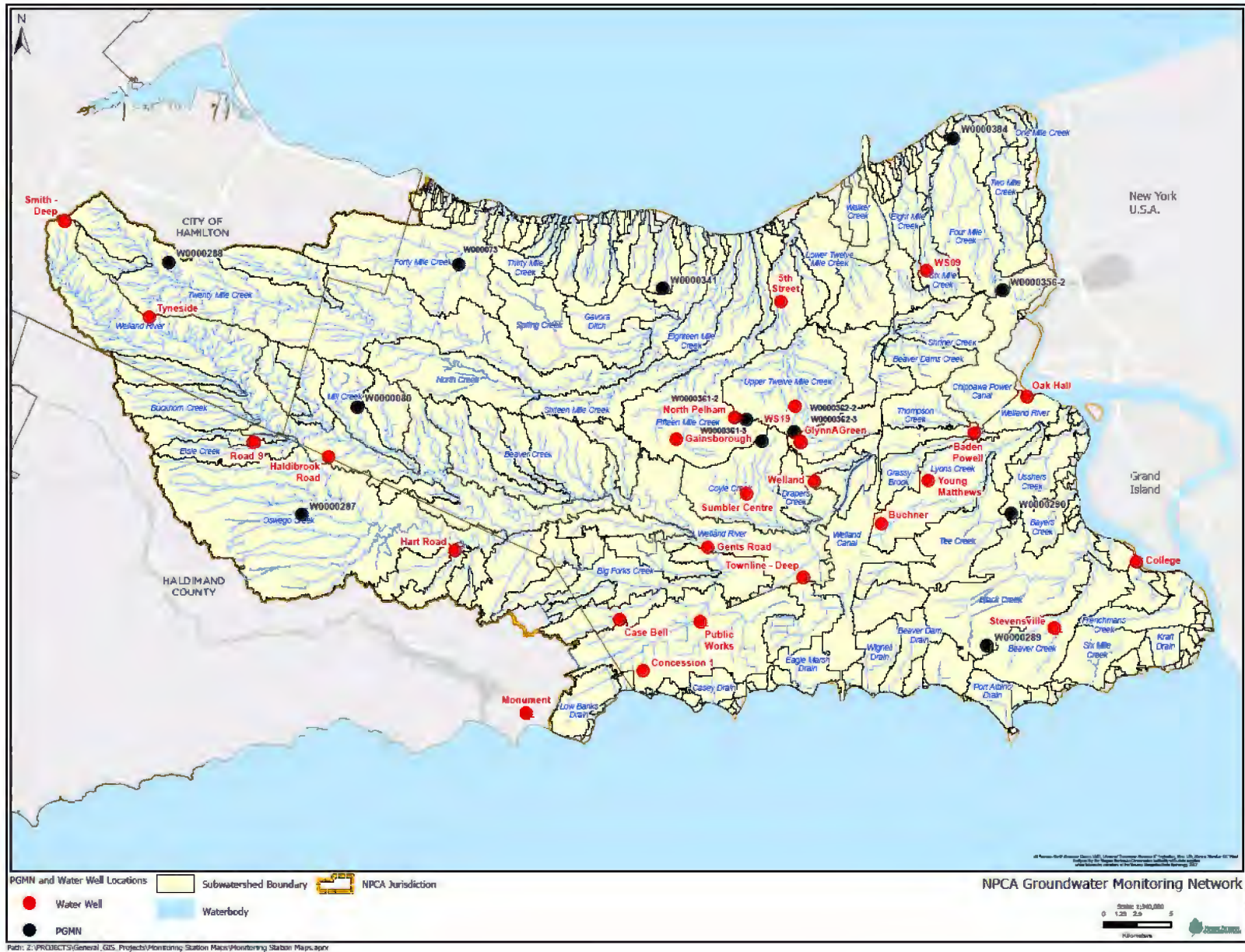


Figure 4. NPCA Groundwater Monitoring Network Program Stations 2023

Table 3: Summary of NPCA Groundwater Quality Monitoring Program

NPCA Monitoring Program	Monitoring Components	Support Programs	Program Purpose
<p>Groundwater Monitoring Program (2002-present)</p>	<ul style="list-style-type: none"> ➤ Groundwater Chemistry (36 Stations) ➤ Groundwater Levels (46 Stations) 	<p>Ministry of Environment, Conservation and Parks (MECP)-Provincial Groundwater Monitoring Program (PGMN)</p>	<ol style="list-style-type: none"> 1) Watershed Management 2) Ontario Low Water Program (groundwater) 3) Ambient Watershed Ground Water Quality 4) Ambient Watershed Ground Water Quantity 5) Climate Change Monitoring 6) Water Budgets and Resource Assessment

2.4 NPCA Ecological Monitoring Program

2.4.1 Overview

The NPCA manages 41 Conservation Areas (**Figure 3**) within the Niagara Peninsula watershed and includes forests, wetlands, areas of natural and scientific interest, recreational lands, natural heritage, and cultural sites, as well as land for flood and erosion control. The forests, wetlands, and other natural features and ecosystems found within the NPCA's Conservation Areas protect and improve water quality and quantity, reduce flooding, act as drinking water sources, and provide habitats for a wide range of wildlife, fish, and birds. Ecological monitoring of NPCA's Conservation Areas informs our ecological restoration efforts, helps to identify areas that require management activities, and assists with maintaining biodiversity on our NPCA properties, which can help to prevent and reduce the harmful impacts of climate change. The NPCA has developed several ecological monitoring programs for its Conservation Areas to assess a variety of management areas.

2.4.2 Monitoring Components

The Ecological Monitoring Program consists of a variety of flora, fauna, ecosystem, and groundwater components established throughout the NPCA's 41 Conservation Areas. These programs are summarized in **Table 4**.

2.4.3 Data storage

The NPCA's Ecological Monitoring Program's datasets are complex and contain a variety of species lists, population, and observation data. This program also generates large volumes of logger data associated with groundwater monitoring and bat monitoring files. For data storage and maintenance staff use Microsoft Excel databases. Staff have also developed a data dictionary ensuring information can be accessed by all staff. Data can be accessed by partners and the public through data requests to NPCA staff.

2.4.4 Reporting

The NPCA's Ecological Monitoring Program produces technical ecological reports and summaries related to Conservation Area land management and monitoring programs as required. These reports are not currently published publicly, however, data can be requested through NPCA staff. Monitoring and inventory results may also be used to support watershed and subwatershed planning and research initiatives.

Table 4: Summary of NPCA Conservation Areas Ecological Monitoring Program

NPCA Monitoring Program	Monitoring Components	Support Programs	Program Purpose
<p>Conservation Areas Ecological Monitoring Program (1998-present)</p>	<ul style="list-style-type: none"> ➤ Fish Communities ➤ Wildlife Communities ➤ Forest Vegetation ➤ Benthic Macroinvertebrate Communities ➤ Wetland Vegetation ➤ Tree Health 	<p>Ontario Ministry of Natural Resources and Forestry</p>	<ol style="list-style-type: none"> 1) Conservation Area Land Management 2) Gypsy Moth Population Monitoring 3) Wainfleet Bog Groundwater Level Monitoring 4) Conservation Area Restoration Projects 5) Species at Risk Monitoring 6) Old Growth Monitoring 7) Red Mulberry Propagate Monitoring 8) Bat Monitoring 9) Mud Lake and Wainfleet Wetlands Monitoring 10) Invasive Species Monitoring 11) Conservation Area Resource Inventory 12) St. Johns Pond Monitoring 13) Climate Change Monitoring

2.5 NPCA Restoration Program Monitoring

2.5.1 Overview

The NPCA’s Restoration Monitoring Program was developed in 2021 to allow staff to track project progression after implementation, provide a quality control mechanism and measure project success. The data from this program is used for adaptive management to guide decision-making, inform on future project plans and budgets, and develop more efficient management strategies for future projects.

2.5.2 Monitoring Components

This program monitors a variety of components including survival rates for planting sites (tree and shrub sites) and general growth/progress of other restoration projects (herbaceous ground cover and water retention for wetland projects, erosion and cover for instream projects or grassed waterways). Qualitative data such as photo monitoring points, landowner surveys and quantitative data are collected through circle plots, survival assessments, and GIS project points/lines/polygons. Project monitoring is initiated in year 1, and continues to year 4, and year 10 after project implementation and completion. The Restoration Monitoring Programs is summarized in **Table 5**.

Table 5: Summary of NPCA Restoration Monitoring Program		
NPCA Monitoring Program	Monitoring Components	Program Purpose
Restoration Monitoring Program (2022-present)	➤ Forest and Wetland Vegetative Communities	1) Watershed Management 2) Restoration Program Adaptive Management

2.5.3 Data storage

The Restoration Monitoring Program uses an ArcGIS Survey 123 App developed in-house by NPCA GIS staff for monitoring surveys accessible to staff through a web browser in tables and dashboards. This program also uses ArcGIS Pro and Field Maps for all circle plot points and project points/lines/polygons. Photo monitoring data created in Field Maps are saved in ArcGIS Pro webservice and backed up in ArcGIS Pro geodatabases. Additional data and photos are stored in Microsoft SharePoint in Excel spreadsheets, Microsoft Word documents, and photo folders.

2.5.4 Reporting

The Restoration Division Staff create reports summarizing monitoring efforts including key findings, notes about relevant sites, and a list of projects that require follow-up work. Where required, projects are stamped by a professional forester and submitted to funding agencies with invoices to receive external funding.

2.6 Environmental Permissions

2.6.1 Overview

MECP and Public Health Units require the NPCA to have monitoring programs in place to support a variety of environmental permissions related to Conservation Area services and infrastructure. These include Environmental Certificate Approvals, Public Health Directives and Permit-to-Take Water. These monitoring programs are summarized in **Table 6**.

Table 6: Summary of NPCA Environmental Permissions		
NPCA Monitoring Program	Monitoring Components	Program Purpose
MECP Environmental Permissions	<ul style="list-style-type: none"> ➤ Water Chemistry (3 Sewage Sites & 4 Drinking Water Systems Sites) ➤ Surface Water Levels (2 Sites) 	<ol style="list-style-type: none"> 1) Environmental Compliance Approval for Septic Systems and Sewage Lagoons Monitoring Program. 2) Public Health Directive for Small Drinking Water Systems 3) Permit to Take Water Reporting Requirement

2.6.2 Monitoring Components

Environmental Compliance Approvals

The NPCA currently operates 3 on-site sewage treatment facilities that require a MECP Environmental Compliance Approval (ECA). These facilities include:

- 1) Balls Falls Centre for Conservation
- 2) Balls Falls Field Centre, Event Barn, and Washrooms building.
- 3) Long Beach Sewage Lagoons

The MECP requires through ECAs that all these facilities to be monitored to ensure the effectiveness of the Works through the collection of samples. For the Balls Falls Centre for Conservation, monthly samples of treated effluent are required. For the Balls Falls Field Centre facilities triannual (spring, summer, and fall) samples from two groundwater monitoring wells (two wells down-gradient from the Field Centre system Type A Dispersal Bed) and triannual samples from two surface water stations on Twenty Mile Creek (one upstream and one downstream of the Works) is required. The ECA for Long Beach Sewage Lagoon facility requires spring sampling of lagoon samples in Cell 1, Cell 2, and the

receiving ditch. NPCA is required to collect samples until the MECP effluent limits are met. For discharge of the sewage lagoon the NPCA is also required collect 1 sample from the receiving ditch during the release, and after the release.

Small Drinking Water Systems

The NPCA's Small Drinking Water Systems are located at Balls Falls, Binbrook, Chippawa Creek, Long Beach and Balls Falls Conservation Areas (**Figure 3**). The NPCA is required by the Health Protection and Promotion Act, Ontario Regulation 319/08: Small Drinking Water Systems to sample, test, monitor and report on the water quality of the small drinking water systems. Public health inspectors have been mandated to conduct a site-specific risk assessment on small drinking water systems in the province.

Permit to Take Water

As a requirement of the MECP's Permit to Take Water (PTTW), the NPCA monitors water levels at Binbrook Reservoir and Virgil Dams (**Figure 3**). At the Virgil Dams, water levels are monitored using data loggers. These sensors collect data at specific logging intervals at designated locations as per the requirement of the PTTW. In the case of the Binbrook Reservoir, estimates of dam discharges for the PTTW based on engineered rating curves determined by NPCA hired consultants.

2.6.3 Data storage

Data collected through the Environmental Permissions Monitoring Programs are stored and maintained by staff using Microsoft Excel databases.

2.6.4 Reporting

There is a different reporting requirement for each of the environmental permissions.

Environmental Compliance Approvals (ECAs)

The ECA requires that a performance report for all these facilities be completed within 90 days following the end of each operational season. NPCA generates a separate report for the MECP for their exclusive information and use.

Small Drinking Water Systems

To ensure there the NPCA provides safe drinking water, the public health units have required the NPCA to collect bacteria samples. The NPCA is subject to health unit inspections, required to maintain sampling records and report any adverse results of small drinking water systems.

Permit to Take Water

The NPCA provides the MECP with annual reporting for the PTTW for the Binbrook Reservoir and Virgil Dams. The NPCA generates a separate report for the MECP for their exclusive information and use.

2.7 Stewardship and Community Science Monitoring

2.7.1 Overview

The NPCA's stewardship and community science monitoring program are interconnected approaches that involve community engagement and active participation in the protection and understanding of the environment. The stewardship component emphasizes responsible resource management, while the community science monitoring component harnesses the collective power of community members to contribute to scientific research and environmental monitoring. The data from this program is used for adaptive management to guide decision-making based around stewardship and community science monitoring.

2.7.2 Monitoring Components

The NPCA's Stewardship and Community Service Monitoring program include the following:

- 1) The NPCA's Community Stewardship Monitoring tracks volunteer statistics such as number of volunteers, number of planting days and number of projects as a tool to assess community engagement and management decisions.
- 2) The NPCA's Bluebird Box Community Science Monitoring Program is led by the NPCA but implemented by volunteers. The monitoring site locations include Ball's Falls, Binbrook and the St. John's Valley Centre. Volunteers for this program monitor the boxes and report on the species nest types, number of eggs, number of fledglings and predation. Volunteers also clean the boxes out in the spring each year to make room for new nests.
- 3) The NPCA is a regional coordinator of the Birds Canada Marsh Monitoring Program. With this program, volunteers are required to select a sample station from a designated list and visit the same station 3 times throughout spring to summer and record either amphibian or bird species that are calling. The protocol used for this program is from Birds Canada.
- 4) The NPCA's Turtle Tally program uses volunteers to monitor specific road crossings daily between spring and fall to record turtle deaths and sightings at those crossings and locations.
- 5) The NPCA Trail Ambassadors allows volunteers to use NPCA-created Apps to report incidents, issues, and concerns on NPCA trails to trigger reports that are managed by NPCA staff.

2.6.3 Data storage

The NPCA's Stewardship and Community Service Monitoring datasets are stored and maintained by staff using Microsoft Excel databases. Data can be accessed by partners and the public through data requests to NPCA staff.

2.6.4 Reporting

There is no formal reporting component to this program, however data is shared with partner agencies upon request and statistics are used in NPCA social media and the corporate NPCA Annual Report.

3.0 INTEGRATED WATERSHED MONITORING PROGRAM

3.1 Background: Integrated Watershed Monitoring

Integrated watershed monitoring is defined as a comprehensive and systematic approach to collecting, analyzing, and interpreting data related to the various components of a watershed. Integrated watershed monitoring programs aim to assess and understand the ecological, hydrological, and environmental conditions over time and space within a watershed to support effective management and conservation efforts. Watershed ecosystems and their components are linked, and implementing an integrated approach provides an understanding of these relationships. This is critical for the NPCA watershed as there are anthropogenic stressors threatening our ecosystems. The key components of integrated watershed monitoring include Water Quality Monitoring, Hydrometric Monitoring, Ecological Monitoring, Land Use and Land Cover Monitoring, Socioeconomic Data, Geospatial Data and Community Engagement. The integration of data from these various components provides a holistic understanding of the watershed's functions, allowing stakeholders to make informed decisions about resource management, environmental protection, and land use planning.

Integrated watershed monitoring programs are often long-term initiatives, as they aim to capture the dynamics and changes occurring within the watershed over time. The data collected through these programs contribute to sustainable watershed management, conservation of biodiversity, and the protection of valuable ecosystem services.

3.2 The Rationale for an NPCA Integrated Watershed Monitoring Program

The NPCA 10-year (2021-2031) Strategic Plan has identified an Integrated Watershed Monitoring Program (IWMP) as a critical priority to help achieve several strategic goals and actions related to Healthy and Climate Resilient Watersheds (Goals 1.1, 1.2, 1.3 and 1.4), Supporting Sustainable Growth (Goals 2.2 and 2.3), Connecting People to Nature (Goals 3.1 and 3.2), Partner of Choice (Goals 4.1 and 4.3), Organizational Excellence (Goal 5.2) and Financial Sustainability (Goal 6.2). The program supports NPCA's vision of "Nature for all" that envisions a healthy and vibrant environment with shared greenspace and clean water that sustains life for future generations.

The NPCA is well-positioned to transition and implement an IWMP as part of its core service delivery. The NPCA has conducted a watershed monitoring gap analysis (**Table 7**) to assess the strengths and weaknesses of an existing watershed monitoring program. This analysis was designed to identify gaps

or deficiencies in the current monitoring efforts to help improve the overall effectiveness of data collection and analysis within a watershed to address those data gaps.

Table 7: Key Identified Gaps in NPCA Monitoring

Monitoring Gaps	
Hydrometric Monitoring	<ul style="list-style-type: none"> ➤ Baseflow / Low-Flow Surveys ➤ Watershed Discharge Data ➤ Expanded Watershed Coverage of Stream Flow Network
Surface Water Monitoring	<ul style="list-style-type: none"> ➤ Wet Weather or Event-Based Monitoring ➤ Winter Water Quality Monitoring ➤ Fisheries (Fish Communities and Fish Habitat) ➤ Stream Fluvial Geomorphology and Erosion Monitoring ➤ Coastal/Shoreline Ecosystem Monitoring
Groundwater Water Monitoring	<ul style="list-style-type: none"> ➤ Wetland Hydrology-Groundwater-Surface Water Interaction
Terrestrial Monitoring Program	<ul style="list-style-type: none"> ➤ Watershed Forest Community and Health Monitoring ➤ Watershed Wetland Community Monitoring ➤ Wildlife (Birds and Amphibians) ➤ Coastal/Shoreline Ecosystem Monitoring

In addition, the NPCA's existing monitoring programs will provide the baseline infrastructure to implement and build a new IWMP. This infrastructure includes existing monitoring program staff, equipment, reporting intervals, database management systems, GIS capacity, web-based tools, and recognition across the watershed. Opportunities to expand the IWMP will be further explored to provide additional internal and external services to meet the watershed resource management needs of the NPCA and our partners. The NPCA's current monitoring programs were designed to be highly flexible for expansion to incorporate additional monitoring components to identify and understand watershed stressors. This is demonstrated with expansion of monitoring components within the NPCA's Water Quality Monitoring Program from 2001 to 2023 (Figure 5).

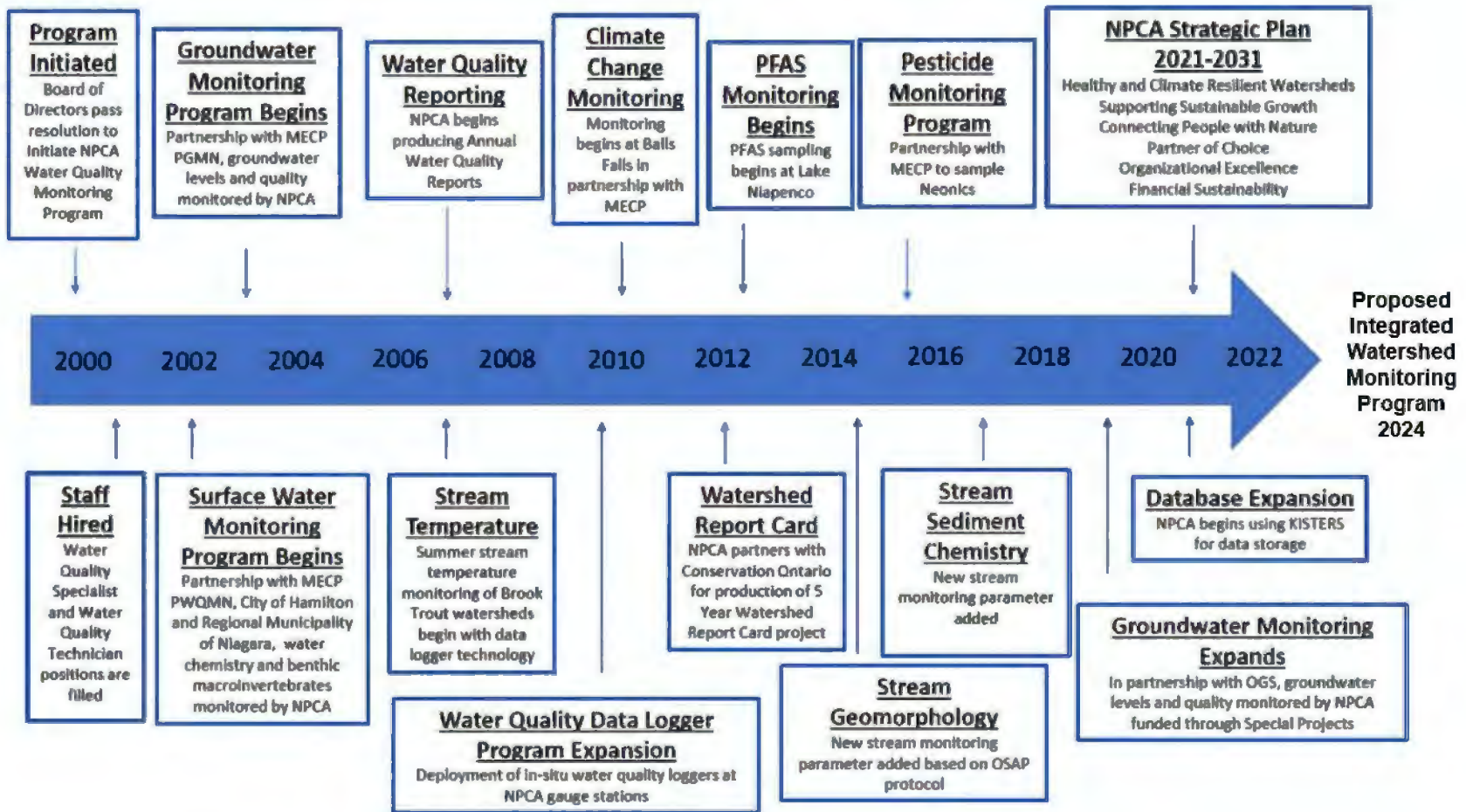


Figure 5. NPCA Water Quality Monitoring Program evolution

The NPCA's Integrated Watershed Monitoring Program (IWMP) will be designed to systematically collect and analyze data on various aspects of a watershed's environment, including its water quality, water quantity, land use, natural hazard risks, and ecological health. The rationale for the NPCA implementing such a program is grounded in several key considerations:

- 1) **Comprehensive Understanding:** The NPCA watersheds are complex and interconnected systems where various natural and human-induced factors can influence water quality, quantity, natural hazards, and overall health. An integrated monitoring program provides a comprehensive understanding of these interrelations, allowing for a more holistic view of watershed dynamics.
- 2) **Identifying Trends and Changes:** Long-term monitoring helps identify trends and changes within a watershed over time. This information is critical for distinguishing between natural variability and anthropogenic impacts, enabling timely and effective management responses to emerging issues.
- 3) **Early Detection of Issues:** Integrated monitoring allows for the early detection of potential problems such as pollution, habitat degradation, or changes in water flow patterns. Early identification provides an opportunity for proactive management interventions, helping to prevent or mitigate negative impacts.
- 4) **Effective Decision-Making:** Allow the NPCA to rely on accurate and up-to-date information to make informed decisions about land use, resource management, natural hazard management and environmental protection. An integrated monitoring program contributes to evidence-based decision-making.
- 5) **Sustainable Resource Management:** Watersheds are essential for providing various ecosystem services, including clean water, habitat for wildlife, and recreational opportunities. Monitoring helps ensure the sustainable management of these resources by providing information on water quality, biodiversity, and ecosystem health.
- 6) **Climate Change Adaptation:** As climate change continues to impact weather patterns and hydrological cycles, an integrated monitoring program is essential for assessing the effects on watersheds, including natural hazards. This information is crucial for developing adaptive strategies to address changing conditions and mitigate potential risks.
- 7) **Community Engagement and Education:** An integrated monitoring program fosters community engagement by involving the public, schools, and organizations in data collection and interpretation. This engagement enhances public awareness and understanding of watershed issues, leading to more informed and environmentally conscious communities.
- 8) **Regulatory Compliance:** There are regulations and standards which governing water quality and environmental protection in Ontario and Canada. An integrated monitoring program helps ensure compliance with these regulations by providing the necessary data for reporting and assessment.

- 9) **Research and Innovation:** Integrated watershed monitoring programs contribute valuable data for scientific research and innovation. The NPCA’s data can be used researchers to study ecological processes, develop models, and advance our understanding of complex environmental systems and adaptive management approaches.
- 10) **Continuous Improvement:** Regular monitoring allows for the continuous improvement of adaptive management strategies. By assessing the effectiveness of implemented measures, the NPCA can adjust management plans and strategies based on real-world data and outcomes.

In summary, the rationale for an integrated watershed monitoring program revolves around the need for a comprehensive understanding of watershed dynamics, early detection of issues, informed decision-making, and the sustainable management of water resources, natural hazards and ecosystems.

3.3 Integrated Watershed Monitoring Program Advisory Group

The development of a comprehensive IWMP required a collaborative approach across divisions and departments of the NPCA. The NPCA formed an Internal Integrated Watershed Monitoring Program Advisory Group (**Table 8**) which met to scope the program, prioritize monitoring components, and assess NPCA resources to identify in-house technical experts.

Table 8. Internal Integrated Watershed Monitoring Program Advisory Group	
Committee Members	Expertise
Director, Watershed Strategies and Climate Change	Corporate Director
Manager Watershed Monitoring and Reporting	Program Administrator
Water Quality Specialist	Water Quality and Aquatic Ecology
Ecologist	Terrestrial Ecology
Manager Ecological Planning	Ecology Principles Applied through Planning and Permit Applications
Manager of Conservation Area Land Planning	Conservation Area Management Plans
Hydrogeology Specialist	Groundwater
Restoration Specialist	Restoration Ecology
Program Coordinator, Watershed Strategies and Climate Research	Climate Change Research and Innovation, and GIS Landscape Analysis
Senior Manager Integrated Watershed Strategies	Integrated Watershed Management

Flood Risk Management Officer	Water Quantity and Climate Data
Conservation Areas Programs & Services	Conservation Area Compliance Monitoring
Water Resources Engineer	Stormwater Management

Upon completion of the NPCA Integrated Watershed Monitoring Program (IWMP), the Advisory Group will transition to a Working Group that will ensure that this program meets the strategic goals and actions of NPCA 2021-2031 Strategic Plan and lays the groundwork for a long-term sustainable program. Working group members will collaborate on program implementation and maintenance, the analysis and synthesis of monitoring results, reporting requirements, review monitoring program requirements/priorities/plans, identify stakeholders and partners, assess staff and equipment resources, and identify potential funding sources. The Working Group will be an integral part of the adaptive management framework of the IWMP where the Working Group can learn to track the program’s performance and impacts of actions and to inform refinement and new action.

In addition, as the IWMP becomes resourced and implemented, the NPCA will begin collaborating external stakeholders such as municipalities, other governmental agencies, academic institutions, and environmental groups to assess their monitoring needs for data and exchange of expertise. This will also be critical to shaping the Monitoring Areas of the NPCA’s IWMP.

3.4 Overview of NPCA’s Integrated Watershed Monitoring Program

The NPCA’s Integrated Watershed Monitoring Program (IWMP) has the following high-level goal to achieve the strategic targets and actions of NPCA 2021-2031 Strategic Plan and build a long-term sustainable program. To support this program's goal, a conceptual model has been developed that identifies three key Watershed Monitoring Program Areas and four key Monitoring Support Systems necessary to achieve its goal.

The goal of the NPCA Integrated Watershed Monitoring Program is to comprehensively assess the ecological health and resilience of the watershed through monitoring initiatives, to inform evidence-based conservation and management strategies for the NPCA watershed.

This conceptual model was developed in collaboration with the Internal Integrated Watershed Monitoring Program Advisory Group. The three Monitoring Program Areas are Long-Term Watershed Monitoring, Corporate Support Services, and Monitoring Service Provider. The four Monitoring Support Systems include Data Management, GIS, Communications and External Partnerships and External

Data. This model is shown in **Figure 6**. Further refined goals have been developed for the specific program areas.

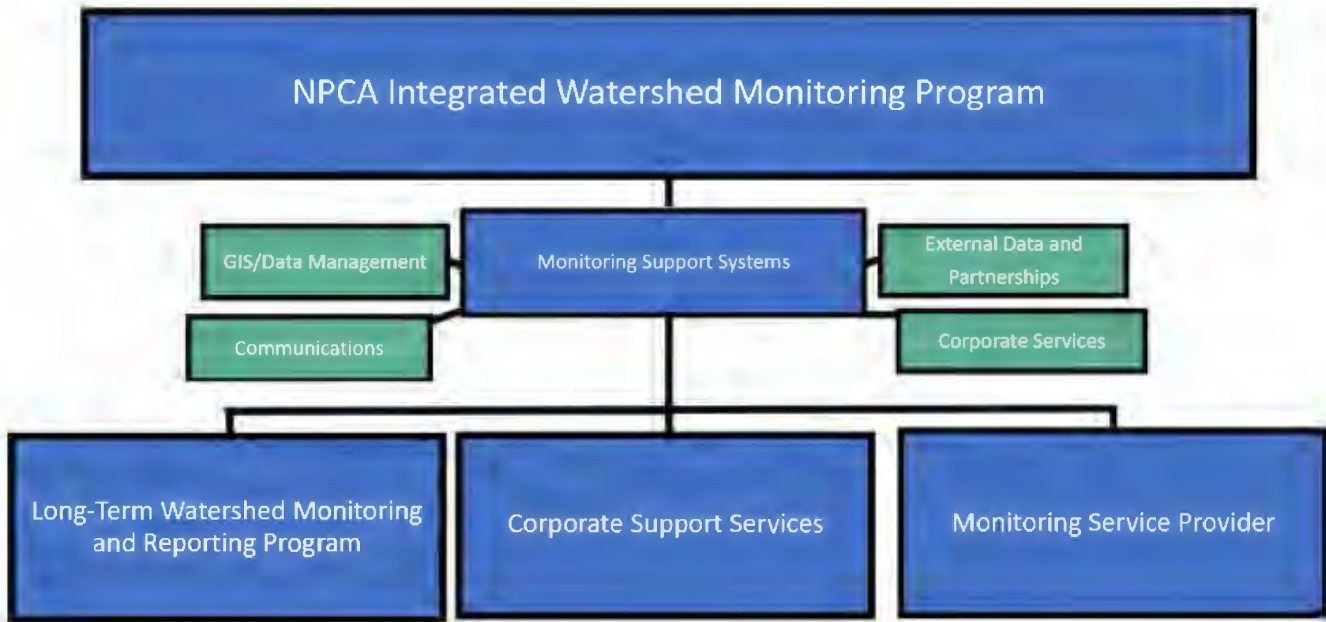


Figure 6. NPCA Integrated Watershed Monitoring Program Model

3.4.1 Monitoring Support Systems

Corporate Services, Geographic Information Systems (GIS) and Data Management, Communications, and external resources (partnerships and data) are crucial monitoring support systems for the NPCA IWMP. GIS provides spatial analysis and visualization capabilities, allowing the NPCA to map, monitor, and manage natural resources accurately. Communications systems facilitate the timely dissemination of information, ensuring that stakeholders are informed and responsive to environmental changes. Robust data management ensures the collection, storage, and analysis of vast amounts of environmental data across the agency, making it accessible and useful for decision-making. External partnerships enhance the reach and impact of the NPCA’s IWMP by pooling data, resources, and knowledge from various organizations. Collectively, these elements enable a comprehensive approach support to the IWMP.

4.0 NPCA LONG-TERM MONITORING AND REPORTING PROGRAM

Long-Term Watershed Monitoring is a priority program for the NPCA's Integrated Watershed Monitoring Program. This program is identified as holding significant value for understanding and managing natural hazards and ecosystems with the NPCA watershed. In addition, this program will provide a foundation for scientific research, conservation initiatives, and informed decision-making. It will contribute to the NPCA's ability to sustainably manage and protect ecosystems, ensuring their resilience in the face of ongoing environmental changes. Here are several key aspects highlighting this program's importance:

- 1) **Baseline Data:** Long-term monitoring provides a baseline of watershed conditions, offering a reference point against which changes can be measured. This baseline is essential for distinguishing natural variability from anthropogenic influences.
- 2) **Detecting Trends and Changes:** Natural systems are dynamic and can undergo gradual or sudden changes. Long-term monitoring will the NPCA to detect trends and changes over time, providing insights into the factors driving ecological shifts.
- 3) **Ecosystem Health Assessment:** By continuously monitoring various ecological parameters, the NPCA will be able to assess the overall health of ecosystems. This includes tracking changes in biodiversity, ecosystem structure, and the abundance of key species, which are crucial indicators of ecosystem health.
- 4) **Early Warning for Disturbances:** Long-term monitoring can serve as an early warning system for ecological disturbances such as disease outbreaks, invasive species introductions, or habitat degradation. Rapid detection enables timely responses to mitigate negative impacts.
- 5) **Climate Change Impacts:** Long-term ecological monitoring plays a crucial role in understanding and documenting the impacts of climate change on natural hazards and ecosystems. Changes in temperature, precipitation, and other climate variables can be tracked, aiding in the assessment of adaptive responses and mitigation options.
- 6) **Conservation Planning and Management:** The data collected through long-term monitoring contributes to evidence-based conservation planning and management. This information helps identify priority areas for conservation, assess the effectiveness of conservation strategies, and guide adaptive management practices.
- 7) **Research and Scientific Understanding:** Long-term data sets are valuable for scientific research, enabling researchers to investigate natural processes within the watershed, test hypotheses, and develop and refine models. This contributes to a deeper understanding of the complex interactions within watersheds and ecosystems.
- 8) **Ecosystem Services Assessment:** Long-term monitoring helps quantify and assess the various ecosystem services provided by natural environments, such as water purification,

pollination, and carbon sequestration. This information is critical for making informed decisions about sustainable resource use.

- 9) **Policy Development and Decision-Making:** Policymakers rely on long-term watershed monitoring data to formulate environmental policies. Informed decision-making is essential for addressing emerging ecological challenges and ensuring the sustainable use of natural resources and management of natural hazards.
- 10) **Public Awareness and Education:** Long-term monitoring results can be communicated to the public, raising awareness about environmental issues, and fostering a sense of stewardship in the NPCA watershed. Education based on real-world watershed data enhances public understanding and support for conservation efforts.

The NPCA Long-Term Watershed Monitoring and Reporting Program will consist of five monitoring units. These include Surface Water Monitoring, Groundwater Monitoring, Terrestrial Monitoring, Hydrometric Monitoring and Watershed Landscape Analysis **Figure 7**. These units are further specialized and consist of a combination of the existing NPCA programs and new monitoring components that are integrated into a comprehensive network providing a holistic understanding of the NPCA natural resources.

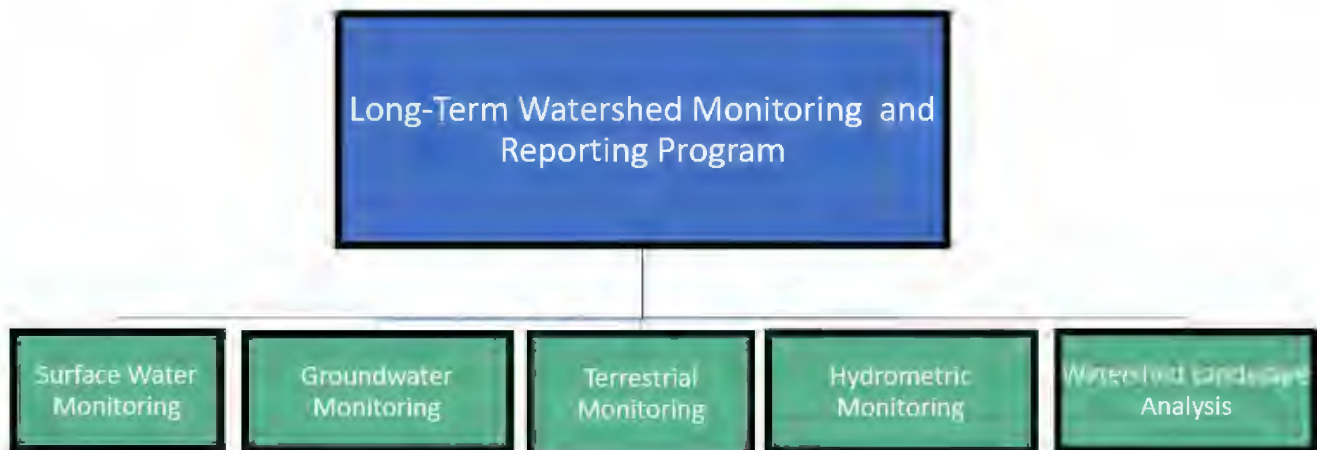


Figure 7. NPCA Long-Term Integrated Watershed Monitoring and Reporting Program.

4.1 Program Goal

The goals of the NPCA Long-Term Integrated Monitoring and Reporting Program are:

- To establish baseline conditions by understanding natural variability and ecological thresholds within the NPCA watershed
- To assess the temporal and spatial conditions of aquatic and terrestrial resources at various locations across the watershed compared to established baselines
- To identify potential stressors and emerging threats that could be addressed through other programs

4.1.1 Surface Water Monitoring

The NPCA’s proposed Surface Water Monitoring Program will consist of five monitoring components which include the existing NPCA’s water chemistry, stream benthic macroinvertebrates and stream temperature monitoring components and new NPCA monitoring initiatives such as fish communities and fluvial geomorphology **Figure 8**.



Figure 8. NPCA Long-Term Integrated Surface Water Monitoring Program.

Water Chemistry

The NPCA’s Integrated Long-Term Watershed Monitoring Program surface water chemistry monitoring component will consist of the previous Ambient Watershed Surface Water Chemistry and Conservation Areas Surface Water Quality Monitoring Programs as well as the In-Situ Stream Monitoring Program. The sampling network, protocols and equipment maintenance methodologies will remain unchanged, ensuring consistency and reliability in the collected data. This continuation guarantees the program’s ability to track long-term trends and assess the health of water bodies in the NPCA watershed. This will ensure the program can provide accurate and actionable assessments into surface water quality chemistry, facilitating informed decision-making and environmental management efforts. The Surface Water Chemistry monitoring component is summarized in **Table 9**.

Table 9: Water Chemistry Monitoring Components

Total Number of Stations	Sample	Frequency of Sampling	Sampling Protocol
83	Grab Sample	8 Times Monthly (ice-free season)	Provincial Water Quality Monitoring Protocol
8	Grab Sample	2 Times (Jan-Mar)	
6	Continuous Deployed Water Quality Sensor and Logger	Winter PWQMN stations only	NPCA Protocol and YSI Inc.

Benthic Macroinvertebrates

The NPCA’s Integrated Long-Term Watershed Monitoring Program benthic macroinvertebrate monitoring component will continue in its existing form, maintaining its essential role in assessing the health and ecological integrity of aquatic ecosystems. This established program utilizing the Ontario Benthos Biomonitoring Network Program (OBBN) protocol focuses on the systematic collection and analysis of benthic macroinvertebrate organisms. By continuing in its current framework, the program ensures consistency and reliability in monitoring these sensitive indicators of water quality. Benthic macroinvertebrates are highly responsive to changes in their environment, making them valuable indicators of stream health. The NPCA’s continued use of the program’s existing structure underscores its effectiveness in providing critical insights into water quality conditions, detecting environmental changes, and informing targeted conservation and restoration efforts. This approach ensures the program’s continued contribution to maintaining the biodiversity and ecological balance of stream ecosystems. The Benthic Invertebrate monitoring component is summarized in **Table 10**.

Table 10: Benthic Invertebrate Monitoring Component

Total Number of Stations	Frequency of Sampling	Sampling Protocol
65	Once- Spring Season 20-25 Stations each year 3 Year Rotation	OBBN

Fish Communities

The inclusion of a fish communities monitoring component into the NPCA’s Integrated Long-Term Watershed Monitoring Program is imperative for a comprehensive understanding of aquatic ecosystems, as fish communities serve as ecological indicators of environmental health and providing critical insights into the overall balance and sustainability of aquatic environments. The monitoring of fish populations and their habitats offers a powerful tool through which the NPCA can assess the impacts of human activities, climate change, and pollution on aquatic ecosystems. In this context, the integration of fish-focused monitoring initiatives contributes significantly to the broader goals of environmental stewardship, resource management, and the preservation of biodiversity.

Fish communities is a new monitoring component for the NPCA and as resources become available, the implementation of this program will commence. To facilitate implementation, NPCA monitoring staff will be provided with training to ensure consistency and accuracy among field staff in data collection and species identification. NPCA staff have identified existing monitoring protocols (Stanfield 2017) used by Conservation Authorities in Ontario that can be utilized for this component. It is intended that regular field surveys will be conducted throughout the NPCA’s monitoring network over specified time intervals to track changes in fish abundance, diversity, and distribution. The Fish Communities monitoring component is summarized in **Table 11**.

Table 11: Fish Community Monitoring Component		
Total Number of Stations	Frequency of Sampling	Sampling Protocol
65	To be determined	Ontario Stream Assessment Protocol Section 3 Module 1

Fluvial Geomorphology

The inclusion of a fluvial geomorphology monitoring component into the NPCA’s Integrated Long-Term Watershed Monitoring and Reporting Program will offer crucial insights into the dynamic interactions between water, sediment, and landforms within streams, which directly influence channel morphology, sediment transport, and habitat diversity ensuring additional understanding and managing of the NPCA’s riverine ecosystems. The NPCA will have a comprehensive understanding of how natural and human-induced changes impact stream stability, hydrology, and ecological health over time. Assessing fluvial geomorphology provides valuable information for designing effective river restoration projects, mitigating erosion and sedimentation issues, and preserving aquatic habitats. Ultimately, including stream fluvial geomorphology enhances the monitoring program's ability to holistically evaluate the condition and resilience of stream ecosystems, leading to informed management decisions aimed at promoting their long-term sustainability.

Fluvial geomorphology is a new monitoring component, and upon resource availability, this program's implementation will begin. To streamline the process, NPCA monitoring personnel will undergo training to maintain consistency and accuracy in data collection methods. Drawing from existing monitoring protocols utilized by Conservation Authorities in Ontario, NPCA staff have identified protocols (MOE 2003, Stanfield 2017) that can be used for this program. The intention is to conduct routine field surveys across the NPCA's monitoring network at predetermined intervals to monitor fluctuations in fluvial geomorphological processes. The Fluvial Geomorphology monitoring component is summarized in **Table 12**.

Table 12: Fluvial Geomorphology Monitoring Component

Total Number of Stations	Frequency of Sampling	Sampling Protocol
50	To be determined	Ontario Stream Assessment Protocol Section 4 Module 2 or Rapid Geomorphic Assessments (RGA)

Stream Water Temperature

The NPCA's stream water temperature program will continue in its current form maintaining its focus on the remaining identified and suspected coldwater watersheds. This program will continue to assess the health of coldwater habitats, identifying potential stressors such as climate change or anthropogenic disturbances, and informing targeted conservation and management strategies aimed at preserving the unique ecological characteristics of these watersheds. Continuity in the program ensures the consistent collection of data essential for understanding temperature fluctuations in coldwater streams and their impact on sensitive aquatic ecosystems. By retaining existing protocols, including regular sampling and advanced data analysis techniques the NPCA program can accurately monitor changes in stream temperature over time with precision. This ongoing effort is crucial for NPCA's partners, who can rely on the program's unchanged operation to provide reliable information crucial for safeguarding these valuable aquatic resources for future generations. The Stream Temperature monitoring component is summarized in **Table 13**.

Table 13: Stream Water Temperature Monitoring Component

Total Number of Stations	Frequency of Sampling	Sampling Protocol
Minium of 9	Continuous hourly May to Nov Deployment	NPCA Protocol and Onset

4.1.2 Groundwater Water Monitoring

The NPCA’s Integrated Long-Term Watershed Monitoring and Reporting Program will incorporate the existing Groundwater Monitoring in its current form. This program will maintain its systematic observation and assessment of groundwater chemistry and water levels of significant regional and local aquifers as shown in **Figure 9**.



Figure 9. NPCA Groundwater Monitoring Components

The NPCA will continue to work with MECP as it pertains to the PGMN and its other partners to maintain, evaluate and adjust this program as required. This established program plays a crucial role in tracking the quality and quantity of groundwater resources, providing valuable data for informed decision-making. By continuing in its existing framework, the program ensures consistency and reliability in monitoring essential parameters such as chemical composition and water levels. This continuity is key for comprehensively understanding groundwater dynamics, detecting potential changes over time, and addressing emerging environmental concerns in the NPCA watershed. Utilizing the existing structure underscores its effectiveness in contributing to sustainable water management practices and the protection of vital groundwater resources. The Groundwater monitoring component is summarized in **Table 14**.

Table 14: Groundwater Monitoring Component		
Total Number of Stations	Frequency of Sampling	Sampling Protocol
46	Yearly Grab Sample Continuous Hourly Water Level Data Logger	Provincial Groundwater Monitoring Network Program (PGMN)

4.1.3 Terrestrial Monitoring

The NPCA's Integrated Long-Term Watershed Monitoring and Reporting Program is initiating the development of a new Terrestrial Monitoring Program. This initiative addresses a significant data gap in the NPCA's monitoring efforts and it recognizes the immense value of long-term terrestrial monitoring in providing insights into ecosystem dynamics and changes over extended periods. This program is crucial for resource management, as it helps assess the health of species and ecosystems, identify threats, and enable effective management within the NPCA watershed. The inclusion of long-term terrestrial monitoring is indispensable for informed decision-making, conservation efforts, and advancing the NPCA's understanding of the complex interactions within the watershed. It provides a foundational integrated framework for addressing environmental challenges and promoting sustainable practices. The NPCA's proposed Terrestrial Monitoring Program will consist of three monitoring components which include Forest Monitoring, Wetland Monitoring and Wildlife Monitoring **Figure 10**.

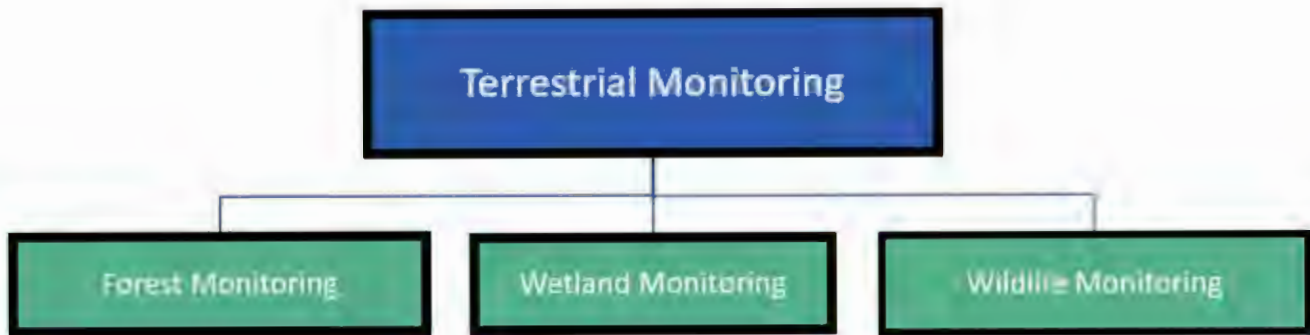


Figure 10. NPCA Terrestrial Monitoring Components

Forest Monitoring

The forest ecosystems in the NPCA watershed play a vital role in supporting rich biodiversity and offering a variety of ecosystem goods and services that are essential for human well-being, including carbon storage, nutrient cycling, and air purification. Healthy forests exhibit greater resilience against various disturbances, including the impacts of climate change. However, the health of forests can be compromised by a range of factors such as disease and invasive species. Moreover, alterations in land use patterns surrounding forests, stemming from urbanization, aggregate extraction, natural succession, and events like ice storms, can significantly impact forest health and the diverse organisms they harbor. Conversely, positive initiatives such as ecosystem restoration projects can contribute positively to forest health and resilience.

For the Forest Monitoring component, the NPCA proposes to use the Ecological Monitoring and Assessment Network (EMAN) monitoring protocols (Roberts-Pichette & Gillespie. 1999) also used by various Conservation Authorities. By implementing the same monitoring protocols as other agencies, a larger data set is available for comparison which could strengthen data analysis for certain applications.

The NPCA’s proposed Forest Monitoring is shown in **Table 15**. The size and sample frequency of this program will be determined by NPCA resources through a watershed statistical analysis that is being completed in 2024.

Table 15: Forest Monitoring Component

Indicator	Total Number of Stations	Frequency of Sampling	Sampling Protocol
Tree Health	To be determined		Ecological Monitoring and Assessment Network Program (EMAN)
Shrub and Tree Regeneration			
Ground Vegetation			

Wetland Monitoring

The NPCA wetlands ecosystems provide habitat for many species, both common and rare. Wetlands provide many valuable ecological services such as regulating water movement, controlling sedimentation and filtering pollutants such as fertilizers from the surrounding water and land. The NPCA recognizes it is critical to monitor wetland ecosystems, because potentially significant changes in hydrology, soils, species composition and structure can be detected, and therefore, allow issues to be identified and addressed.

The NPCA is proposing to use monitoring protocols developed by the Toronto and Region Conservation Authority (TRCA 2019) and Credit Valley Conservation (CVC) for the wetland monitoring component. These can include monitoring wetland hydrology and vegetative communities. By implementing the same monitoring protocols as other agencies, a larger data set is available for comparison which could strengthen data analysis for certain applications. The NPCA’s proposed Wetland Monitoring is shown in **Table 16**. The size and sample frequency of this program will be determined by NPCA resources through a watershed statistical analysis that is being completed in 2024.

Table 16: Wetland Monitoring Component

Indicator	Total Number of Stations	Frequency of Sampling	Sampling Protocol
Physical Environment	To be determined		Toronto and Region Conservation Authority (TRCA) and Credit Valley (CVC)
Tree Counts			
Shrub and Tree Regeneration			
Ground Vegetation			
Wetland Hydrology			

Wildlife Monitoring

The NPCA recognizes the need to implement long-term monitoring of bird and amphibian communities in forest and wetland ecosystems within the watershed. Birds and amphibians serve as vital indicators of ecosystem health due to their sensitivity to environmental changes. By tracking population trends, species diversity, and distribution patterns over extended periods, and its possible to gain valuable insights into the overall ecological dynamics of forest and wetland ecosystems. Long-term monitoring allows for detecting subtle shifts in community composition and identifying potential threats such as habitat degradation, pollution, and climate change. Furthermore, these monitoring efforts provide essential data for informing conservation strategies and management practices aimed at preserving critical habitats and safeguarding the intricate web of life supported by forest and wetland ecosystems. The NPCA intends to design a terrestrial monitoring network where regular field surveys will be conducted over specified time intervals to track changes in their abundance, diversity, and distribution. The NPCA’s proposed Wildlife Monitoring Program is shown in **Table 17**. The size and sample frequency of this program will be determined by NPCA resources through a watershed statistical analysis that is being completed in 2024.

Table 17: Wildlife Monitoring Component			
Indicator	Total Number of Stations	Frequency of Sampling	Sampling Protocol
Forest and Wetland Birds	To be determined		Ontario Forest Bird Monitoring Program and Marsh Monitoring Program (BSC 2006a and 2006b)
Wetland Amphibians			
Forest Plethodontid			

4.1.4 Hydrometric Monitoring

The NPCA’s Integrated Long-Term Watershed Monitoring Program’s will incorporate the Hydrometric Monitoring program in its current form, maintaining its crucial role in extensively assessing surface water quantity and climate conditions (**Figure 11**). This program is dedicated to the comprehensive observation of hydrological parameters, providing invaluable data for understanding water dynamics and climate impacts. By continuing in its existing framework, the program ensures the ongoing collection of accurate and reliable information on stream water levels, flow rates, and meteorological factors. This continuity is essential for tracking changes over time, detecting trends, and informing effective water resource management strategies. The program’s commitment to its existing structure facilitates the NPCA’s understanding of hydrological patterns and their interconnectedness with climate variables, contributing to informed decision-making and sustainable environmental practices. The Hydrometric Monitoring component is summarized in **Table 18**.



Figure 11. Hydrometric Monitoring Components

Table 18: Water Quantity and Climate Monitoring Components

Total Number of Stations	Sample	Frequency of Sampling	Sampling Protocol
21	Water Level	Continuous 5 to 15 minutes readings	NPCA and Water Surveys Canada
7	Water Flow	Continuous 5 to 15 minutes readings	
7	Snow	10 sampling points per Site November to April	Ontario Snow Surveying Manual
11	Precipitation	Continuous 5 to 15 minutes readings	NPCA
7	Wind	Continuous 5 to 15 minutes readings	

In addition, the NPCA must provide programs and services to support the functions and responsibilities related to Flood Forecasting and Warning in its watershed jurisdiction as required under the *Conservation Authorities Act* and O. Reg. 686/21: Mandatory Programs and Services. The NPCA is responsible for forecasting where and when flooding is likely to occur and for issuing appropriate flood messages. The NPCA issues flood messages to municipal emergency management officials and the media if flooding is possible or imminent. The municipal officials then warn watershed residents and allow municipalities and other government agencies to implement emergency response plans and, if necessary, evacuate communities. The NPCA’s Flood Forecasting and Flood Warning is directly supported by the NPCA’s Hydrometric Monitoring Program that assesses surface water quantity and climate conditions within the watershed

4.1.5 Watershed Landscape Analysis

The Watershed Landscape Analysis unit of the Long-Term Integrated Watershed Monitoring Program is another tool that the NPCA will be continuing to use to characterize the human, aquatic and terrestrial features, conditions, processes, and interactions within a watershed. This program provides a systematic way to understand and organize ecosystem information. In so doing, watershed landscape analysis enhances the NPCA’s ability to estimate direct, indirect, and cumulative effects of our management activities and guide the general type, location, and sequence of appropriate management activities within a watershed. The Watershed Landscape Analysis Program currently has two programs, and these are shown in **Table 19**.

Table 19: Watershed Landscape Analysis Programs

Watershed Landscape Analysis Programs	Program Description	Recommended Analysis Intervals
<p>Watershed Natural Areas Inventory (NAI) Program</p>	<ul style="list-style-type: none"> This program identifies, classifies, and maps natural heritage areas in the NPCA watershed jurisdiction. The resulting data provides a representation of the natural cover and features of the Niagara watershed using the Ecological Land Classification (ELC), a standard in Ontario to classify natural areas. The NPCA intends to conduct NAI inventories at determined intervals as a tool to assess changes in the watershed. 	<p>10 years</p>
<p>Watershed Natural Asset Assessment & Carbon Sequestration Program</p>	<ul style="list-style-type: none"> Baseline inventory of carbon sequestering forest, wetlands, and meadow Natural assets analysis that provides the valuation of ecosystem services, such as flood attenuation, and stormwater regulation. 	<p>10 years</p>

4.2 Data Management

Data management is a key part of the NPCA’s long-term monitoring program. The long-term monitoring program collects from a wide range of sources depending on the program unit and these data include time series, discrete data, taxonomic and GIS datasets. By building upon the databases that NPCA currently utilizes (KISTERS, Microsoft Office, SQL server and internal data systems), and work with the NPCA’s Information Technology (IT) and GIS divisions to establish a centralized database to store and manage all collected data. This will allow the NPCA to work towards implementing an efficient data management system that ensures data consistency, security, integrity, and accessibility.

4.2.1 NPCA Data Users

The NPCA long-term monitoring programs will and currently generate a large wealth of scientific data that has a diverse range of users spanning various sectors as shown in **Figure 12**. Here are some key user groups that frequently utilize the NPCA environmental monitoring data:

- 1) **Federal and Provincial Agencies:** Environmental protection agencies and regulatory bodies such as ECCC and the MECP use the NPCA's monitoring data as background watershed conditions.
- 2) **Public Health Unit:** Monitoring data related to water quality is vital for the NPCA's public health agencies partners to assess potential health risks associated with environmental factors such as E.coli monitoring of beaches and outlet tributaries. This information can inform public health policies and interventions.
- 3) **Research Institutions and Education:** Scientists and researchers in environmental science, ecology, climatology, and related fields use the NPCA's monitoring data to conduct studies, develop models, and advance the understanding of environmental processes. Academic institutions may also use this data for teaching and training purposes. In addition, local elementary and secondary schools use the NPCA's environmental monitoring data for educational purposes, exposing students to real-world environmental challenges and encouraging the development of environmental stewardship.
- 4) **Municipalities:** Municipal partners can use the NPCA's extensive long-term monitoring datasets as background watershed conditions to inform municipal water and wastewater infrastructure projects. Municipalities may also use monitoring data to assess the impact of urbanization on ecosystems, plan for sustainable development, and address issues related to pollution, waste management, and green spaces.
- 5) **Industry:** Various industries, especially those with potential environmental impacts, may use the NPCA's monitoring data to ensure compliance with environmental regulations and implement sustainable practices.
- 6) **Non-Governmental Organizations (NGOs):** Environmental NGOs often use the NPCA's monitoring data to advocate for environmental conservation and raise awareness about specific issues. NGOs may also conduct their monitoring or collaborate with other organizations.
- 7) **Community Science:** The NPCA does engage with community science initiatives that contribute to environmental monitoring by collecting data within the watershed. This grassroots approach helps increase the spatial coverage of monitoring efforts and fosters public awareness and engagement.
- 8) **Emergency Responders:** The NPCA's environmental monitoring data, especially in real-time, can be crucial for emergency responders during events like natural disasters such as flooding, industrial accidents, or pollution incidents. This data aids in decision-making and emergency response coordination.

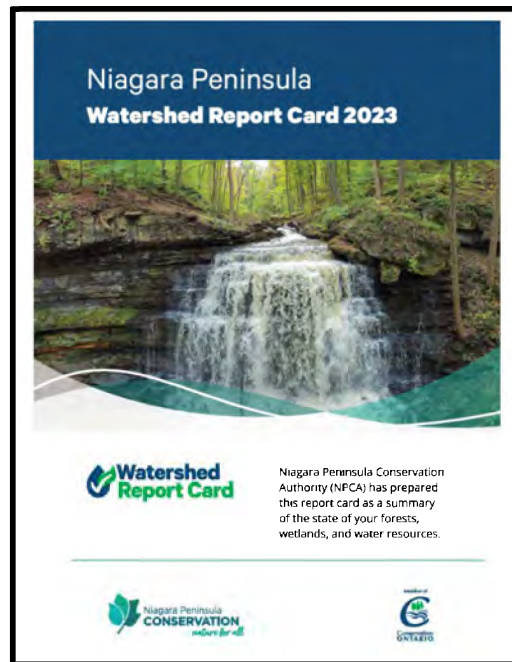
The NPCA acknowledges that these data user groups collectively contribute to a comprehensive understanding of environmental conditions, help identify emerging trends and challenges, and play a crucial role in shaping policies and practices that promote environmental sustainability. It is key that the NPCA have effective communication and collaboration among these stakeholders to maximize the impact of the NPCA's environmental monitoring data.



Figure 12. NPCA Data Sharing

2) Watershed Report Cards

The NPCA will continue with the Watershed Report Card project in partnership with Conservation Ontario. This is an important initiative that contributes to both local and broader watershed reporting across the province. Watershed report cards provide information on surface water, groundwater, forest, and wetland conditions within subwatersheds to promote an understanding of local health and emerging trends as a basis for setting environmental management priorities and inspiring local environmental action (Conservation Ontario 2011).



https://npca.ca/images/uploads/common/WRC_NPC_A_2023_-_CO.pdf

3) Watershed Monitoring and Reporting Annual Reporting

The NPCA Integrated Watershed Monitoring Program will continue its annual reporting (NPCA 2024) and will expand its reporting to incorporate information, data, and monitoring results from the enhanced long-term monitoring program. This comprehensive approach will include detailed insights into water quality, terrestrial monitoring, and groundwater. By integrating these expanded datasets, the program aims to provide a more holistic view of watershed health, facilitating better-informed decision-making and more effective environmental management strategies.

4) Open Data Portals and Communications

The NPCA Integrated Watershed Monitoring Program will expand its use of ArcGIS to begin utilizing data visualization consisting of a dynamic dashboard, storyboard maps as well as data reporting that will be expanded on the NPCA's web services. These visually descriptive and user-friendly tools are intended to become the main communication instrument for the NPCA's Long-Term Monitoring Program results.



5.0 CORPORATE SUPPORT SERVICES

NPCA's Integrated Watershed Monitoring Program includes a Corporate Support Services Area that is comprised of several programs that will service the NPCA with crucial monitoring data to inform operational activities across multiple NPCA departments and divisions. Many components in this area have already been implemented previously, however their inclusion in this monitoring area better defines the scope of these programs at the NPCA and continues to allow for integration across NPCA monitoring areas. Therefore, internal monitoring components will be fully identified to facilitate improved collaboration and potentially allow for additional resources to meet program capacity. The type and number of Corporate Support Services that the NPCA implements is dynamic and driven by NPCA program and project needs.

5.1 Program Goal

- The goal of the NPCA Corporate Support Service area is to provide monitoring services and expert advice for NPCA's internal department programs and projects.

5.1.1 Environmental Permissions

The NPCA will continue to maintain the Environmental Permissions monitoring program as described in **Section 2.6**, which is a requirement of MECP and Public Health Units to support a variety of environmental permissions that are related to NPCA's Conservation Area services and infrastructure. These include MECP Environmental Certificate Approvals (ECAs), MECP Permit-to-Take-Water and Small Drinking Systems Public Health Directives. The Environmental Permissions monitoring programs are summarized in **Table 20** with corresponding Department leads and Department Integration for implementation.

Table 21: Summary of NPCA Environmental Permissions

Environmental Permissions	Department Lead(s)	Department Integration
MECP Environmental Certificate Approvals Sewage Works-Balls Falls and Long Beach Conservation Areas	Conservation Areas Department and Environmental Planning and Policy Division	Watershed Monitoring and Reporting Division
MECP Permit-to-Take-Water Binbrook and Virgil Conservation Areas	Flood Risk Management Division	Conservation Areas Department
Public Health Directives Small Drinking Water Systems Binbrook and Virgil Conservation Areas	Conservation Areas Department	Watershed Monitoring and Reporting Division

5.1.2 Conservation Areas Beach Monitoring Program

The NPCA will continue Conservation Areas Beach Monitoring Program as described in **Section 2.3.2**. Samples will continue to be collected at Long beach Conservation and Chippawa Creek Conservation Areas and analyzed for E. coli during the regular beach season. Data will continue to be posted on the NPCA webpage and be used to determine long-term trends in the water quality at NPCA swimming areas over time. This program will not be used to identify public health risks when swimming in natural water bodies. The Conservation Areas Department will continue as departmental lead with the program integration occurring where Watershed Monitoring and Reporting staff will be conducting the field program and potentially providing internal data analysis as requested. The Conservation Areas Beach Monitoring Program is summarized in **Table 21** with corresponding Department leads and department integration for implementation.

Table 21: Summary of NPCA Conservation Beach Monitoring Program

Program	Monitoring Component	Department Lead	Department Integration
Conservation Areas Beach Monitoring- Long Beach Conservation Area Chippawa Creek Conservation Area	<i>E. coli</i> sample collections Weekly (June to early September)	Conservation Areas Department	Watershed Monitoring and Reporting Division

5.1.3 Restoration Monitoring Program

The NPCA will continue to utilize the existing restoration monitoring program described in **Section 2.5**. This program will continue to allow NPCA staff to track restoration project progression after implementation and to guide decision-making by adaptive management. This program will continue to provide the Integrated Watershed Strategies and Restoration Division with data and analysis that will inform future restoration project plans and budgets within this program area. The Integrated Watershed Strategies and Restoration will continue as the lead, with the program integration occurring where Watershed Monitoring and Reporting staff provide long-term data analysis as requested. The Restoration Monitoring Program is summarized in **Table 22** with Department leads and Department Integration for implementation.

Table 22: Summary of NPCA Restoration Monitoring Program

Program	Monitoring Component	Department Lead	Department Integration
Restoration Project Monitoring Program	➤ Forest and Wetland Vegetative Communities	Integrated Watershed Strategies Department and Restoration Division	Watershed Monitoring and Reporting Division

5.1.4 Conservation Management Plans Program

The NPCA 10-year 2021-2031 Strategic Plan relies on Conservation Area Management Plans to achieve its goal of managing NPCA lands in part to increase biodiversity, habitat connectivity, and natural cover. Conservation Area Management plans are practical tools that outline the goals and strategies for natural areas. These plans provide a clear direction for managing the land towards these goals, guiding day-to-day decisions, and addressing complex challenges. Management plans involve input from various stakeholders to ensure that decisions are based on up-to-date science. The NPCA Corporate Support Services Monitoring area intends to support the preparation of NPCA Conservation Management Plans by providing environmental monitoring and inventory resources. These could include a range of environmental studies to establish baseline data to inform management plan decisions. **Table 23** summarizes a list of monitoring components that can be made available.

Table 23: Summary of NPCA Conservation Management Plans Program

Program	Monitoring Component	Department Lead	Department Integration
Conservation Area Management Plan Program	<ul style="list-style-type: none"> ➤ Hydrometric Surveys ➤ Groundwater Characterization ➤ Terrestrial Monitoring and Inventories ➤ Aquatic Monitoring and Inventories 	Land Planning Division and Conservation Area	Watershed Monitoring and Reporting Division Conservation Areas Department Flood Risk Management Division

5.1.5 Conservation Lands Ecological Monitoring

The Conservation Lands Ecological Monitoring Program will continue in a modified format to allow the NPCA to conduct specialized ecological monitoring programs that fall outside the scope of NPCA’s Long-Term Monitoring area. This program is flexible and can be expanded to include specialized monitoring components customized for a specific purpose within NPCA Conservation Areas and owned lands. This program will continue to provide the NPCA with data and analysis that will inform Conservation Area ecological management. The Conservation Lands Ecological Monitoring Program is summarized in **Table 24** with corresponding department integration for implementation.

Table 24: Summary of NPCA Conservation Lands Ecological Program

Program	Monitoring Component	Department Lead	Department Integration
Conservation Lands Ecological Monitoring	<ul style="list-style-type: none"> ➤ Hydrometric Surveys ➤ Groundwater Characterization ➤ Terrestrial Monitoring and Inventories ➤ Aquatic Monitoring and Inventories 	Land Planning Division and Conservation Area	Watershed Monitoring and Reporting Division Conservation Areas Department Flood Risk Management Division

5.1.6 Climate Change

Recognizing the increased importance of climate change as a driver for watershed health and quality of life in the NPCA watershed, the NPCA’s 2021-2031 Strategic Plan includes numerous climate-related actions across several strategic priorities. These actions will be implemented to guide the NPCA’s

efforts to address local climate impacts through on-the-ground projects. Monitoring data will form the basis of climate-related projects and initiatives to retain and promote climate resiliency. This monitoring area will also demonstrate the NPCA’s leadership with its watershed partners and the public. As the NPCA continues to develop and expand its climate change initiatives, the NPCA’s IWMP Long-Term Monitoring Program Area will play a critical role in supporting these initiatives as noted in **Table 25**.

Table 25: Climate Change Monitoring Supporting Programs

Program	Monitoring Component	Department Lead	Department Integration
Climate Change	<ul style="list-style-type: none"> ➤ Water Quantity ➤ Groundwater Quantity ➤ Surface Water Quality ➤ Surface Water Ecology ➤ Terrestrial Ecology 	Land Planning Division and Conservation Area	Watershed Monitoring and Reporting Division Conservation Areas Department Flood Risk Management Division

5.1.7 Low Impact Development Monitoring

The NPCA has begun incorporating Low Impact Development (LID) projects into its own property infrastructure to address stormwater runoff that could result in erosion, sedimentation, and pollution. The NPCA’s IWMP will play a pivotal role in supporting the environmental monitoring of the NPCA’s LID projects by leveraging internal expertise and resources. The IWMP can oversee comprehensive monitoring programs that track the effectiveness of LID measures, such as permeable pavements, infiltration trenches, bioswales, and rain gardens, in reducing runoff and improving water quality. Depending on the LID project, data can be collected and analyzed on various environmental parameters, including water quality, water levels, and biodiversity, to assess the impact of LID projects. The LID Monitoring Program is summarized in **Table 26**. This program will help to ensure that LID strategies are effectively contributing to the resilience and health of local ecosystems by providing assessment data.

Table 26: LID Monitoring Supporting Programs

Program	Monitoring Component	Department Lead	Department Integration
LID Monitoring	<ul style="list-style-type: none"> ➤ Water Quantity ➤ Groundwater Quantity ➤ Surface Water Quality ➤ Surface Water Ecology ➤ Terrestrial Ecology 	Conservation Areas Department	Watershed Monitoring and Reporting Division Infrastructure Engineering and Asset Management Division

5.1.8 Community Science Monitoring

The NPCA Community Outreach and Engagement team will continue to implement the Community Science Monitoring program described in **Section 2.7**. This program partners with citizens and NGOs to actively participate in the protection and preservation of local ecosystems. This program can inform NPCA with developing training sessions and providing resources for members of our watershed community to collect data on various aspects of the environment, such as climate monitoring, water quality, wildlife populations, and habitat health. This approach can generate valuable scientific data and foster a sense of stewardship and connection to the watershed among participants. Depending on the type of community science monitoring projects, the IWMP is flexible to utilize supporting departments, and these are shown in **Table 27**.

Table 27: Community Science Monitoring Supporting Program

Program	Monitoring Component	Department Lead	Department Integration
Community Science Monitoring	<ul style="list-style-type: none"> ➤ Water Quantity ➤ Groundwater Quantity ➤ Surface Water Quality 	Watershed Strategies and Climate Change Department	Watershed Monitoring and Reporting Division
	<ul style="list-style-type: none"> ➤ Surface Water Ecology ➤ Terrestrial Ecology 	Climate Change and Special Projects Division	Flood Risk Management Division

5.1.9 Special Projects

The NPCA IWMP is structured to incorporate internal monitoring special projects that emerge outside of defined programs. The flexibility of the IWMP allows the program to address specific environmental concerns or emerging issues by leveraging internal resources and expertise. By integrating these special internal monitoring projects, the IWMP enhances NPCA’s ability to deliver precise, actionable insights and support adaptive management strategies, ensuring the sustainable management of watershed resources.

6.0 MONITORING SERVICE PROVIDER

The IWMP includes a Monitoring Service Provider Area with the intent of highlighting the NPCA's potential as an environmental monitoring service provider to its watershed partners such as municipalities, provincial and federal agencies as well as private companies. The NPCA has a dedicated team of experts specializing in hydrometric, groundwater, surface water, and terrestrial monitoring programs. Utilizing state-of-the-art technologies, monitoring protocols, and data analyses, the NPCA is equipped to offer small-scale monitoring services. Through strategic communication with partners and planning, NPCA's monitoring, and inventory services can be expanded with additional resources (equipment and training) and staff to enhance data collection, analysis, and reporting capabilities for larger-scale projects.

6.1 Program Goal

- The goal of the NPCA Monitoring Service Provider Area is to provide environmental monitoring services to external partners within the NPCA watershed.



6.2 Monitoring Provider Services Project Intake Process

The NPCA currently has three Service Provider monitoring services, and these are summarized in Table 28.

Table 28: Existing Monitoring Provider Services	
Current Monitoring Services Provided	Program Details
Municipal Environmental Monitoring	<p><i>Glanbrook Landfill Biomonitoring Program</i></p> <p>The City of Hamilton contracts the NPCA biennially to monitor benthic macroinvertebrates upstream and downstream of the Glanbrook Landfill to assess any landfill impacts to the adjacent watercourses. NPCA generates a separate report to the City of Hamilton for their exclusive information and use.</p>
Municipal Environmental Monitoring	<p><i>Regional Water Quality Monitoring</i></p> <p>The NPCA receives funding to monitor ambient water quality of streams and rivers throughout the Niagara Region’s municipal jurisdiction. The data collected through this program is shared with the municipality and the NPCA generates an annual report summarizing water quality exceedances and overall trends.</p>
Private Environmental Monitoring Services	<p><i>Hamilton Airport Biomonitoring Program</i></p> <p>The Hamilton International Airport (HIA) contracts the NPCA to monitor macroinvertebrates to determine if stormwater runoff and de-icing fluids are impacting surface water quality in two headwater tributaries of the Welland River. NPCA generates a separate report to the HIA for their exclusive information and use.</p>

In addition to the current service provider programs, it has been anticipated that the NPCA watershed partners, such as the municipalities, may wish to utilize the NPCA’s environmental monitoring services for a variety of areas and these include.

- 1) Secondary Plans-Subwatershed Studies: Characterization and Pre and Post Construction Monitoring
- 2) Consolidated Linear Infrastructure Environmental Compliance Approval (CLI-ECA) Applications for Stormwater Management Systems: Performance Monitoring
- 3) Municipal Greening Targets: Environmental Inventories
- 4) Low Impact Development: Performance Monitoring

5) Long-Term Environmental Monitoring in Growth Areas: Environmental Inventories

The NPCA has formed a project intake team which has designed an intake process for Monitoring Service Provider projects which involves several systematic steps to ensure potential projects are well-defined, feasible, and aligns with the NPCA’s organization goals and regulatory requirements. The detailed steps required for the IWMP’s Monitoring Service Provider Project Intake Process are as follows in **Table 29**:

Table 29: Monitoring Service Provider Project Intake Process	
Intake Process Step	Program Details
1. Initial Consultation	<ul style="list-style-type: none"> • Stakeholder Engagement: Engage with stakeholders to understand their needs, concerns, and objectives. • Define Objectives: Clearly define the goals of the monitoring project (e.g., water quality assessments, ecological inventories, water quantity). • Data Requirements: Identify the types of data required (e.g., physical, chemical, biological parameters). • Regulatory Compliance: Review relevant environmental regulations and guidelines to ensure compliance.
2. Project Proposal Development	<ul style="list-style-type: none"> • Scope Definition: Outline the scope of the project, including geographic boundaries, time frame, and specific parameters to be monitored. • Methodology: Develop a detailed methodology for data collection, analysis, and reporting. • Budget Estimation: Estimate the budget required, including equipment, personnel, and other resources. • Risk Assessment: Identify potential risks and challenges to completing the project and propose mitigation strategies.
3. Feasibility Study	<ul style="list-style-type: none"> • Technical Feasibility: Assess the technical feasibility of the project, including the availability of necessary equipment and technology. • Operational Feasibility: Evaluate the operational feasibility, considering logistical aspects and the availability of skilled personnel. • Financial Feasibility: Ensure that the project is financially viable within the budget constraints.
4. Project Approval and Funding	<ul style="list-style-type: none"> • Proposal Submission: Submit the project proposal. • Review and Feedback: Address any feedback or queries from the reviewing authority. • Funding Approval: Secure funding and ensure financial resources are allocated appropriately.



By utilizing the Monitoring Service Provider Project Intake Process the NPCA can ensure that environmental monitoring projects are thoroughly planned, effectively executed, and yield reliable data and reporting for clients.

7.0 Integrated Watershed Monitoring Program Implementation

The NPCA is optimally positioned to implement the IWMP as a key part of its strategic core service delivery by leveraging its existing monitoring efforts to transition to the integrated approach. The NPCA's current resources include established monitoring programs, trained monitoring staff, advanced equipment, regular reporting intervals, robust database management systems, GIS capabilities, and sophisticated web-based tools. Additionally, the NPCA's programs are already well-recognized across the watershed. Designed with flexibility, the NPCA's current monitoring programs can expand with strategic incremental investments, allowing for the integration of additional monitoring components to effectively identify and understand watershed stressors.

The NPCA's IWMP will utilize the robust Long-Term Monitoring Programs as its foundation for expanded monitoring. These anchor programs benefit from stable funding, supportive partners, and mandated roles, ensuring a reliable and consistent framework. The NPCA's extensive experience and proven track record in running these programs make it the ideal basis for developing a comprehensive, integrated monitoring system. By building on these established programs, the NPCA can support various internal and external monitoring initiatives.



7.1 Financial Considerations

The *Conservation Authorities Act* and O. Reg. 686/21: Mandatory Programs and Services, sets out mandatory and non-mandatory programs and services for Conservation Authorities to provide for its jurisdictional area and these are funded in different ways **Table 30**.

CA Act	Description
Category 1	Mandatory programs and services as identified in Ontario Regulation 686/21 that can be funded through a municipal levy.
Category 2	Municipal programs and services provided at the municipality's request. These programs can be funded through government and other agency grants and/or municipal funding under a memorandum of understanding (MOU) or agreement with the municipality.
Category 3	Other programs and services that an Authority (Board) determines are advisable. These programs can be funded through self-generated revenue, user fees, government and other agency grants, donations, etc. Any use of municipal funding will require an agreement and would be subject to cost apportioning.

The NPCA's IWMP incorporates several programs and services designated as Category 1 that are essential for compliance with regulatory requirements and for the effective management and protection of watershed resources. These components include:

- Flood Forecasting and Hydrometric Monitoring
- Provincial Surface Water Quality Monitoring Program (PWQMN)
- Provincial Groundwater Monitoring Network (PGMN)
- Monitoring and Environmental Inventory Activities on NPCA-owned Lands to inform the management of lands

The NPCA's IWMP also incorporates several programs and services that fall under Category 2 or 3 non-mandatory program or service classifications as per the Conservation Authorities Act. These include:

- Expanded Surface Water Quality Monitoring
- Expanded Groundwater Quality Monitoring

- Stream Benthic Macroinvertebrates Monitoring
- Fish Communities Monitoring
- Watershed Landscape Analysis
- Restoration Monitoring
- Community Science Monitoring

These non-mandatory services are partially funded through service-level agreements with municipal partners or external funding sources. In accordance with the transition requirements under the Conservation Authorities Act, the NPCA has entered into Service Level Agreements with the watershed participating municipalities of Niagara Region, City of Hamilton and Haldimand County, for non-mandatory Category 2 and 3 program services, and costs associated with the programs and services are to be reviewed on an annual basis as part of the NPCA's annual budget approval process. Lower-tier municipalities in Niagara Region, which are not levied for NPCA programs and services, can also enter into agreements of services for a fee-for-service basis when a local municipality wishes to engage NPCA to provide services, such as monitoring, data analysis and reporting. Additionally, staff are proactively seeking external funding opportunities such as:

- Partnerships: working with a mix of existing and new partners to fund and complete projects that meet our shared goals.
- Grants: external funding sources, such as Federal and Provincial grant programs will be targeted to help support projects in all program areas.
- Niagara Peninsula Conservation Foundation (NPCF): collaborating with the NPCF to increase funding for IWMP initiatives through donations and giving programs.
- Fee-for-service: leveraging the NPCA's skills and expertise to increase self-generated revenue.

A Watershed-based Resource Management Strategy, to be developed by the end of 2024, as required under the Conservation Authorities Act and O. Reg. 686/21: Mandatory Programs and Services, will assist NPCA with evolving and enhancing its programs and services to address or manage local watershed triggers, issues, or risks. The Watershed-based Resource Management Strategy will include identifying Category 2 and 3 programs and services such as the IWMP, with cost estimates, that are recommended to support the delivery of mandatory programs and services. Conventional funding approaches to implement the IWMP will be combined with opportunities to seek external grants and innovative approaches to leverage various sources of funding. Future costs will be determined by the program's scope, staffing requirements and uptake and interest by partners and funders.

7.2 Standard Operating Procedures

The NPCA considers Standard Operating Procedures (SOPs) important for the effective implementation of the Integrated Watershed Monitoring Program. SOPs ensure consistency, reliability, and accuracy in data collection and analysis. By providing detailed, standardized guidelines for every aspect of the monitoring process, SOPs minimize variability and human error, thereby enhancing the credibility and comparability of the results over time and across different locations. SOPs facilitate training and competency for NPCA staff, ensuring that all personnel perform monitoring tasks uniformly, regardless of their experience level. Additionally, SOPs are essential for regulatory compliance, as they document that proper methodologies are followed, which is critical for meeting legal and environmental standards. The NPCA is currently developing and formalizing SOPs for its various monitoring programs.

7.3 Training

Proper training of IWMP staff is crucial for the program's success and effectiveness across all monitoring areas. The NPCA will survey the technical level of IWMP staff and identify training gaps to ensure that staff are well-versed in monitoring protocols, enabling consistent and standardized data collection across different sites. Additionally, thorough training on the use and maintenance of monitoring equipment is vital for obtaining accurate and reliable data. By investing in the proper training of staff, the program can ensure high-quality data collection and analysis, leading to better-informed decision-making and more effective watershed management.



7.4 Indigenous Knowledge

Incorporating indigenous knowledge into NPCA's IWMP environmental monitoring programs holds significant importance, as it enriches scientific understanding with centuries-old wisdom and local expertise. Indigenous communities possess invaluable insights into their ecosystems, including intricate knowledge of biodiversity, natural resource management, and the subtle signs of environmental change. Integrating this knowledge not only enhances the accuracy and effectiveness of monitoring efforts but also fosters cultural preservation and respect for traditional ways of life. By embracing indigenous perspectives, environmental monitoring programs can cultivate holistic approaches that prioritize sustainability, resilience, and the harmonious coexistence of humanity with the natural world. This collaborative approach bridges the gap between scientific methodologies and indigenous wisdom, promoting more inclusive and equitable conservation strategies that benefit both the environment and indigenous communities.

The NPCA seeks to engage with local indigenous communities and individuals through our Public Advisory Committee (PAC) and other opportunities guided by our Indigenous Engagement Guidelines that are being developed, to support the development of a more holistic approach in watershed monitoring that incorporates aspects of Indigenous Traditional Knowledge and an awareness of the watershed spirit, in addition to western science and management objectives.

8.0 RECOMMENDATIONS AND CONCLUSION

8.1 Recommendations

To achieve the NPCA 2021-2031 Strategic Plan Goal 1.1 – Support evidence-based decision-making for climate-resilient watersheds and shoreline, and the objectives of the new IWMP, the following recommendations have been developed to ensure the NPCA's readiness for implementing the program. Each recommendation is accompanied by actions to be implemented by 2031.

Recommendation 1

That the NPCA prioritize and enhance the Long-Term Watershed Monitoring program within the Integrated Watershed Monitoring Program, as it is essential for understanding and managing ecosystems, supporting scientific research, conservation initiatives, and inform decision-making to ensure ecosystem resilience against ongoing environmental changes.

Action 1.1: Continue to focus long-term monitoring efforts on provincially mandated programs such as Hydrometric, Surface Water, Groundwater, and monitoring on NPCA properties and utilize these programs as a foundation for expanded monitoring.

Action 1.2: Where applicable, integrate long-term monitoring efforts and stations between the Monitoring Program Areas.

Action 1.3: Ensure IWMP monitoring data remains up to date, addresses data gaps, is transferable and relevant to the NPCA's partners such as municipalities, governmental agencies, academia, and the public.

Recommendation 2:

That NPCA will continue to regularly report results of its environmental monitoring programs in an understandable and accessible format to support decision-making by the NPCA and its partners to enhance watershed health and community awareness.

Action 2.1: Produce watershed health reports at relevant intervals that summarize key watershed findings.

Action 2.2: Provide regular updates on key findings to all internal departments, watershed municipalities, Board of Directors, and other key watershed management partners.

Action 2.3: Transition towards 'open data' to establish a platform for sharing data with making most data collected through the IWMP accessible to partners and the public through NPCA web resources.

Recommendation 3

That NPCA ensures the IWMP has a robust Corporate Support Services Monitoring Area to incorporate internal monitoring components through collaboration, optimize resource allocation, and better define the scope and capacity of crucial monitoring programs and projects across multiple departments and divisions.

Action 3.1: Maintain a comprehensive inventory of internal monitoring requirements across NPCA's departments and divisions.

Action 3.2: Develop standardized protocols and guidelines for integrating internal monitoring components into the IWMP.

Action 3.3: Continue to utilize the IWMP Working Group to ensure collaboration and coordination of monitoring efforts across NPCA's departments and divisions.

Recommendation 4

That NPCA will continue to increase the capacity of its monitoring and inventory services within the IWMP to enable NPCA to become a comprehensive environmental monitoring provider for watershed partners, including municipalities, provincial and federal agencies, and private companies.

Action 4.1: NPCA will establish and strengthen partnerships with municipalities, provincial and federal agencies, and private companies to collaborate on monitoring projects and share resources and expertise.

Action 4.2: NPCA will develop and implement training programs for staff to enhance their skills in a variety of monitoring protocols/technologies and data analysis techniques to increase NPCA's monitoring services' capacity.

Action 4.3: NPCA will invest in monitoring equipment, software and database management to improve data accuracy, collection efficiency, and reporting capabilities.

Recommendation 5

That NPCA will continue to collaborate with municipal and community partners, agriculture, academia, and indigenous communities moving forward.

Action 5.1: NPCA will work towards building partnership agreements with municipal and community organizations, agricultural bodies, and indigenous communities as appropriate to outline roles, responsibilities, and shared goals within IWMP.

Action 5.2: The NPCA will organize regular meetings and workshops with municipal and community partners, agricultural representatives, academic institutions, and indigenous communities to share insights, discuss challenges, and coordinate monitoring efforts.

Action 5.3: NPCA will explore collaborative research projects with academic institutions and indigenous communities to leverage diverse expertise and traditional knowledge in monitoring and managing watershed health.

Recommendation 6

The NPCA will continue to explore efficiencies and innovations to continuously improve the IWMP.

Action 6.1: The NPCA will establish a schedule for regular reviews and assessments of the IWMP to identify areas for improvement, incorporate innovative practices, and ensure the program remains at the forefront of environmental monitoring.

Action 6.2: NPCA will develop a centralized data management system within the IWMP to streamline the collection, analysis, and sharing of monitoring data, ensuring timely and effective decision-making.

Action 6.3: The NPCA will investigate advanced monitoring technologies and automated data collection systems, to enhance the efficiency and accuracy of environmental monitoring.

The IWMP Working Group will prioritize the implementation of the Recommendations and Actions through a program workplan supported by a long-term budget plan guided by the Watershed-based Resource Management Strategy. NPCA staff will continue to report to the NPCA Board of Directors the progress and successes of the new IWMP to support healthy and climate resilient watersheds.



8.2 Conclusion

In conclusion, the NPCA's Integrated Watershed Monitoring Program is a comprehensive and systematic approach essential for understanding and managing the watershed's ecological, hydrological, and environmental conditions. For the NPCA, this approach is crucial due to the anthropogenic stressors threatening our watershed. By integrating monitoring components such as water quality, hydrometric, ecological, land use and cover monitoring, geospatial data, and community science, the program provides a holistic understanding of watershed functions. This enables informed decision-making for resource management, environmental protection, natural hazard management, and land use planning. The NPCA's 10-year Strategic Plan (2021-2031) has identified an IWMP as a critical priority to achieve strategic goals related to healthy and climate-resilient watersheds, sustainable growth, connecting people to nature, partnership excellence, organizational excellence, and financial sustainability. With existing infrastructure and a completed gap analysis highlighting areas for improvement, the NPCA is well-positioned to implement and expand this program as part of its core service delivery. This will not only enhance the effectiveness of data collection and analysis but also support the NPCA's vision of a healthy and vibrant environment, ensuring the sustainability of valuable ecosystem services for future generations.

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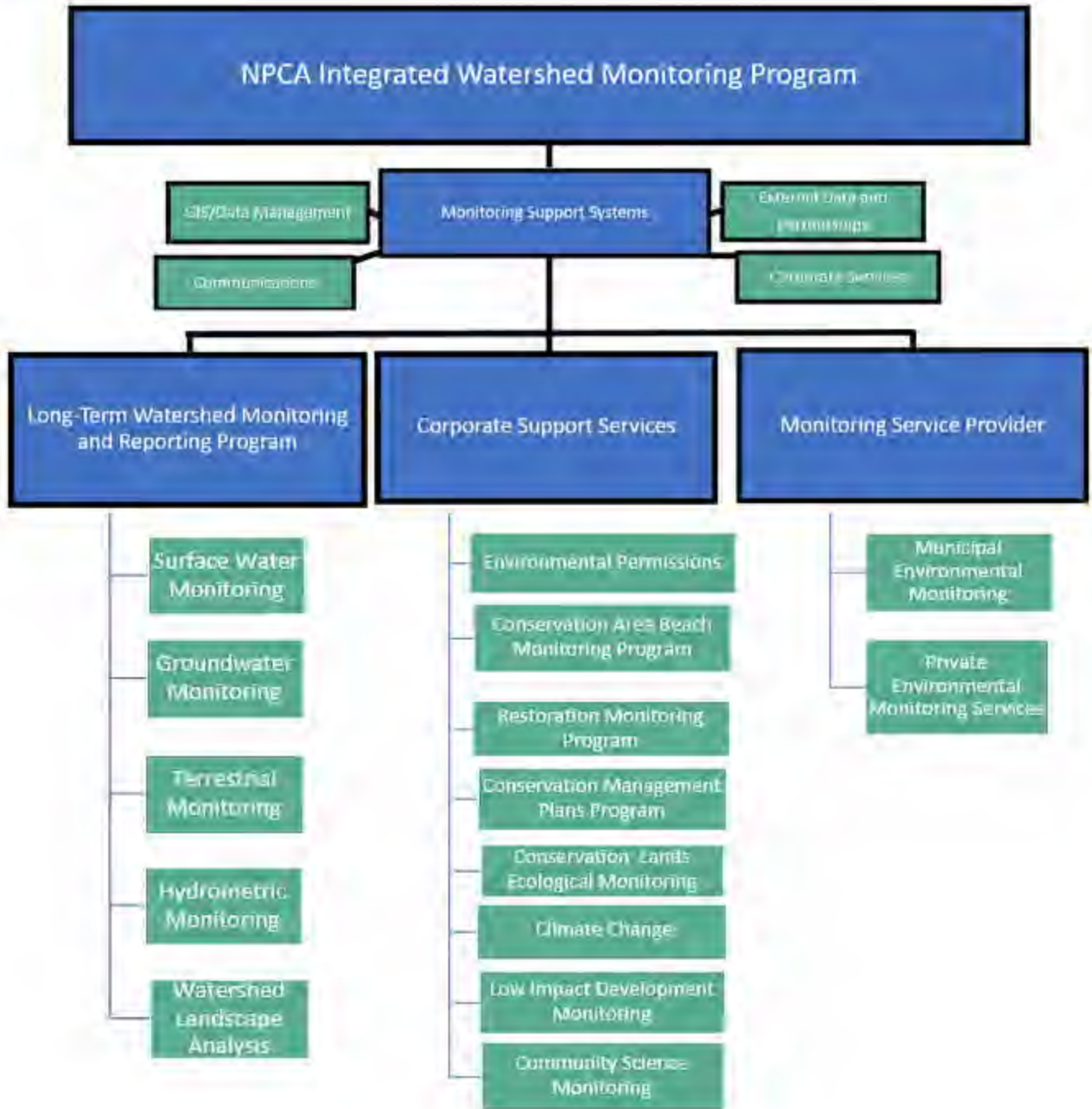
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Niagara Peninsula Conservation Authority

3350 Merrittville Hwy #9
Thorold, ON L2V 4Y6
www.npca.ca

Appendix 2: Niagara Peninsula Conservation Authority Enhanced Integrated Watershed Monitoring Program Conceptual Model





Township of Lucan Biddulph

270 Main Street
P.O. Box 190, Lucan, Ontario N0M 2J0
Phone (519) 227-4491; Fax (519) 227-4998

July 30, 2024

Sent Via Email

Hon. Doug Ford (Premier of Ontario)
Hon. Sylvia Jones (Ontario Minister of Health)
Dr. Kieran Moore (Chief Medical Officer of Health)
Rob Flack, MPP (Elgin-Middlesex-London)
Steve Pinsonneault, MPP (Lambton-Kent-Middlesex)
Association of Municipalities of Ontario (AMO)
Ontario Medical Association (OMA)
Western Ontario Warden's Caucus (WOWC)
All Ontario Municipalities

RE: AMO/OMA Joint Health Resolution Campaign – Physician Shortage

Please be advised that at their last regular meeting on Tuesday July 16, 2024, the Council of the Township of Lucan Biddulph passed the following resolution:

Resolution No. 2024 - 187

Moved by D. Regan

Seconded by J. Hodgins

WHEREAS the state of health care in Ontario is in crisis, with 2.3 million Ontarians lacking access to a family doctor, emergency room closures across the province, patients being de-rostered and 40% of family doctors considering retirement over the next five years; and

WHEREAS it has becoming increasingly challenging to attract and retain an adequate healthcare workforce throughout the health sector across Ontario; and

WHEREAS the Northern Ontario School of Medicine University says communities in northern Ontario are short more than 350 physicians, including more than 200 family doctors; and half of the physicians working in northern Ontario expected to retire in the next five years; and (Northern Ontario only)

WHEREAS Ontario municipal governments play an integral role in the health care system through responsibilities in public health, long-term care, and paramedicine.

WHEREAS the percentage of family physicians practicing comprehensive family medicine has declined from 77 in 2008 to 65 percent in 2022; and

WHEREAS per capita health-care spending in Ontario is the lowest of all provinces in Canada, and


WHEREAS a robust workforce developed through a provincial, sector-wide health human resources strategy would significantly improve access to health services across the province;

NOW THEREFORE BE IT RESOLVED THAT the Council of the Township of Lucan Biddulph urge the Province of Ontario to recognize the physician shortage in the Township of Lucan Biddulph and Ontario, to fund health care appropriately and ensure every Ontarian has access to physician care.

CARRIED

Please contact our office should you require any further information on this matter.

Sincerely,


Tina Merner
Deputy Clerk



RE: Letter of Support – AMPS in Ontario Building Code **July 31, 2024**

Hon. Graydon Smith
Ministry of Natural Resources
5th Floor, 99 Wellesley St
Toronto, ON M7A 1W3
Graydon.smith@pc.ola.org

AMCTO
amcto@amcto.com

AMO
amo@amo.on.ca

RE: Township of Lake of Bays Resolution regarding Request for Royal Assent of Administrative Monetary Penalty System in the Ontario Building Code Act.

Please be advised that the Township of Limerick, at its meeting held on July 15, 2024 considered the aforementioned topic and subsequent discussion, the following motion was passed:

Motion 112-2024

Moved by Councillor Jan MacKillican
Seconded by Councillor Shawn Pack

That staff is directed to issue a letter of support for Royal Assent of AMPS in the Building Code.

Carried

As per the above resolution, please accept a copy of this correspondence for your information and consideration.

Sincerely,

Victoria Tisdale
Clerk-Treasurer

Cc: All Ontario Municipalities

Victoria Tisdale, Clerk Treasurer
clerk@township.limerick.on.ca
Telephone: 613-474-2863
Fax: 613-474-0478

EST. 1792
Hastings

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Nicole Ilcio, Deputy Clerk Treasurer
assistant@township.limerick.on.ca
Telephone: 613-474-2863
Fax: 613-474-0478



T 705 635 2272
TF 1 877 566 0005
F 705 635 2132

TOWNSHIP OF LAKE OF BAYS
1012 Dwight Beach Rd
Dwight, ON POA 1H0

May 14, 2024

Via email: minister.mah@ontario.ca

Minister of Municipal Affairs and Housing
Attention: Paul Calandra
777 Bay Street, 17th Floor
Toronto, ON M7A 2J3

Dear Mr. Calandra:


RE: Request for Royal Assent of Administrative Monetary Penalty System in the Ontario Building Code Act.

The Administrative Monetary Penalty System (AMPS) is an enforcement tool approved by the Provincial Government in August of 2009 and was originally used for parking offences to free up court time and cost.

A large number of municipalities have adopted an AMPS program and have applied AMPS to other Municipal enforcement by-laws as a replacement to the standard Part 1 Provincial Offences Act (POA) ticket system, as it provides the alleged offender with a flexible appeal system and the municipality the ability to apply unpaid penalties on to the property taxes. AMPS frees up valuable Provincial Offences Court time saving the province and the municipalities valuable resources and funds.

AMPS was written into the Building Code Act in December of 2017 however it has not received Royal Assent. AMPS has proven to be a valuable tool for education and enforcement of other Municipal by-laws. On behalf of the Council of the Corporation of the Township of Lake of Bays, we ask that AMPS receive Royal Assent. In doing so this would free up time for Building Officials to conduct their primary job (building inspections) instead of having to attend court normally a full day to hear an appeal to Part 1 ticket, at the same time providing the offender a more streamlined appeal system.

Sincerely,


Carne Sykes, Dipl. M.A., CMO, AOMC,
Director of Corporate Services/Clerk.

TG/v
Copy to:

MPP. Graydon Smith
Association of Ontario Municipalities
Association of Municipal Clerk and Treasurers of Ontario
All Area Municipalities



RE: Letter of Support – AMO-OMA

July 31, 2024

Motion110-2024

Moved by Councillor Glenn Locke

Seconded by Councillor Grace Hamm

That Council direct staff to issue a letter of support to AMO and the Ontario Medical Association as requested.

Carried

WHEREAS the state of health care in Ontario is in crisis, with 2.3 million Ontarians lacking access to a family doctor, emergency room closures across the province, patients being de-rostered and 40% of family doctors considering retirement over the next five years; and

WHEREAS it has becoming increasingly challenging to attract and retain an adequate healthcare workforce throughout the health sector across Ontario; and

WHEREAS the Northern Ontario School of Medicine University says communities in northern Ontario are short more than 350 physicians, including more than 200 family doctors; and half of the physicians working in northern Ontario expected to retire in the next five years; and (Northern Ontario only)

WHEREAS Ontario municipal governments play an integral role in the health care system through responsibilities in public health, long-term care, paramedicine, and other investments.

WHEREAS the percentage of family physicians practicing comprehensive family medicine has declined from 77% in 2008 to 65 percent in 2022; and

WHEREAS per capita health-care spending in Ontario is the lowest of all provinces in Canada, and

Victoria Tisdale, Clerk Treasurer
clerk@township.limerick.on.ca
Telephone: 613-474-2863
Fax: 613-474-0478

Nicole Ilcio, Deputy Clerk Treasurer
assistant@township.limerick.on.ca
Telephone: 613-474-2863
Fax: 613-474-0478



WHEREAS a robust workforce developed through a provincial, sector-wide health human resources strategy would significantly improve access to health services across the Province;

NOW THEREFORE BE IT RESOLVED THAT the Council of Township of Limerick urge the Province of Ontario to recognize the physician shortage in the Township of Limerick and Ontario, to fund health care appropriately and ensure every Ontarian has access to physician care.

Sincerely,

Victoria Tisdale

Clerk-Treasurer

Victoria Tisdale, Clerk Treasurer
clerk@township.limerick.on.ca
Telephone: 613-474-2863
Fax: 613-474-0478

EST. 1792
Hastings
COUNTY
Page 146 of 150

Nicole Ilcio, Deputy Clerk Treasurer
assistant@township.limerick.on.ca
Telephone: 613-474-2863
Fax: 613-474-0478

**Association of Municipalities of Ontario
(AMO)**

155 University Ave., Suite 800
Toronto, Ontario M5H 3B7
Telephone: 416.971.9856
Toll-free in Ontario: 1.877.426.6527
Fax: 416.971.6191

Ontario Medical Association

150 Bloor St. West, Suite 900
Toronto, ON M5S 3C1
Canada
TF: 1.800.268.7215
T: 416.599.2580
F: 416.533.9309
E: info@oma.org
oma.org

Dear Heads of Council and Clerks,

Communities across Ontario have been facing critical healthcare challenges, including long waitlists for primary care, shortages of doctors and other healthcare workers; and emergency room closures. These cracks in Ontario's health care system are impacting economic development, health, and well-being at the local level.

In response, the Ontario Medical Association (OMA) and the Association of Municipalities of Ontario (AMO) are working collaboratively to advocate for a better healthcare system for Ontario's residents and communities.

We have jointly developed the attached draft council resolution (Appendix A - Also in PDF and Word Versions), urging the provincial government to recognize the physician shortage in your municipality and the rest of Ontario. By adopting this resolution, your municipality can play a crucial role in highlighting the urgent need for more healthcare resources and support.

AMO is excited to welcome everyone to Ottawa for our annual conference from August 18-21, 2024. We are pleased to inform you that the OMA will be participating at this year's conference. Along with sponsoring the Rural Caucus Lunch on August 20, the OMA has reserved meeting room at the Fairmont Château Laurier for both August 20 and 21 to meet directly with municipal leaders. During these meetings, we would like to hear what you are seeing on the ground and discuss opportunities to work closer with you. We believe that collaboration between Ontario's doctors and all 444 municipalities is essential in addressing the healthcare needs of your community.

To set up a meeting with the OMA, please reach out to Tarun.Saroya@OMA.org (Senior Advisor for Government Relations and Advocacy) to book a 15-30 minute time slot at your earliest convenience.

We look forward to your positive response and to working together towards a healthier future for all Ontarians.

Yours sincerely,



Kimberly Moran
CEO, Ontario Medical



Colin Best
Association AMO President

Appendix A:

WHEREAS the state of health care in Ontario is in crisis, with 2.3 million Ontarians lacking access to a family doctor, emergency room closures across the province, patients being de-rostered and 40% of family doctors considering retirement over the next five years; and

WHEREAS it has becoming increasingly challenging to attract and retain an adequate healthcare workforce throughout the health sector across Ontario; and

WHEREAS the Northern Ontario School of Medicine University says communities in northern Ontario are short more than 350 physicians, including more than 200 family doctors; and half of the physicians working in northern Ontario expected to retire in the next five years; and (Northern Ontario only)

WHEREAS Ontario municipal governments play an integral role in the health care system through responsibilities in public health, long-term care, and paramedicine.

WHEREAS the percentage of family physicians practicing comprehensive family medicine has declined from 77 in 2008 to 65 percent in 2022; and

WHEREAS per capita health-care spending in Ontario is the lowest of all provinces in Canada, and

WHEREAS a robust workforce developed through a provincial, sector-wide health human resources strategy would significantly improve access to health services across the province;

NOW THEREFORE BE IT RESOLVED THAT the Council of (the name of municipality) urge the Province of Ontario to recognize the physician shortage in (name of municipality) and Ontario, to fund health care appropriately and ensure every Ontarian has access to physician care.





The Corporation of the Municipality of Wawa

REGULAR COUNCIL MEETING

RESOLUTION

Tuesday, July 23, 2024

Resolution # RC24172	Meeting Order: 15
Moved by: 	Seconded by: 

WHEREAS the state of health care in Ontario is in crisis, with 2.3 million Ontarians lacking access to a family doctor, emergency room closures across the province, patients being de-rostered and 40% of family doctors considering retirement over the next five years; and

WHEREAS it has becoming increasingly challenging to attract and retain an adequate healthcare workforce throughout the health sector across Ontario; and

WHEREAS the Northern Ontario School of Medicine University says communities in northern Ontario are short more than 350 physicians, including more than 200 family doctors; and half of the physicians working in northern Ontario expected to retire in the next five years; and (Northern Ontario only) and;

WHEREAS Ontario municipal governments play an integral role in the health care system through responsibilities in public health, long-term care, and paramedicine and;

WHEREAS the percentage of family physicians practicing comprehensive family medicine has declined from 77% in 2008 to 65 percent in 2022; and

WHEREAS per capita health-care spending in Ontario is the lowest of all provinces in Canada, and;

WHEREAS a robust workforce developed through a provincial, sector-wide health human resources strategy would significantly improve access to health services across the province;

NOW THEREFORE BE IT RESOLVED THAT the Council of the Corporation of the Municipality of Wawa urge the Province of Ontario to recognize the physician shortage in the Municipality of Wawa and Ontario, to fund health care appropriately and ensure every Ontarian has access to physician care.

P. 2...



The Corporation of the Municipality of Wawa

REGULAR COUNCIL MEETING

RESOLUTION

AND FURTHERMORE, THAT a copy of this resolution be shared with AMO, Colin Best, Ontario Medical Association, Kimberly Moran, CEO, Premier Doug Ford, and all Ontario Municipalities.

RESOLUTION RESULT		RECORDED VOTE		
<input checked="" type="checkbox"/>	CARRIED	MAYOR AND COUNCIL	YES	NO
<input type="checkbox"/>	DEFEATED	Mitch Hatfield		
<input type="checkbox"/>	TABLED	Cathy Cannon		
<input type="checkbox"/>	RECORDED VOTE (SEE RIGHT)	Melanie Pilon		
<input type="checkbox"/>	PECUNIARY INTEREST DECLARED	Jim Hoffmann		
<input type="checkbox"/>	WITHDRAWN	Joseph Opato		

Disclosure of Pecuniary Interest and the general nature thereof.

Disclosed the pecuniary interest and general name thereof and abstained from the discussion, vote and influence.

Clerk: _____

MAYOR - MELANIE PILON	CLERK - MAURY O'NEILL

This document is available in alternate formats.