

ONTARIO LAND TRIBUNAL

PROCEEDING COMMENCED UNDER subsection 34(11) of the *Planning Act*, R.S.O. 1990, c. P.13, as amended

Applicant and Appellant:	ClubLink Corporation ULC
Subject:	Application to amend Zoning By-law No. 2008-250 - Refusal or neglect of the City of Ottawa to make a decision
Existing Zoning:	O1A (Open space, subzone A)
Proposed Zoning:	R1T (Residential First Density Zone), R3V (Residential Third Density Zone), and R5A (Residential Fifth Density Zone) as well as O1 (Parks and open spaces).
Purpose:	To permit the redevelopment of the lands for residential and open space uses, including 1502 residential units which will be mixed between detached, townhouse and mid-rise apartments.
Property Address/Description:	7000 Campeau Drive
Municipality:	City of Ottawa
Municipality File No.:	D02-02-19-0123
OLT Case No.:	PL200195
OLT File No.:	PL200195
OLT Case Name:	ClubLink Corporation ULC v. Ottawa (City)

PROCEEDING COMMENCED UNDER subsection 51(34) of the *Planning Act*, R.S.O. 1990, c. P.13, as amended

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Municipality File No.:	D07-16-19-0026
OLT Case No.:	PL200195
OLT File No.:	PL200196

REPLY MOTION RECORD OF CLUBLINK CORPORATION ULC

REGARDING THE WITNESS STATEMENT OF DOUGLAS NUTTALL

January 12, 2022

DAVIES HOWE LLP

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Counsel to ClubLink Corporation ULC

TO: **ONTARIO LAND TRIBUNAL**

655 Bay Street, Suite 1500
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M5G 1E5

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AND TO: **CITY OF OTTAWA**

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Counsel to the City of Ottawa

AND TO: **WEIRFOULDS LLP**
4100 – 66 Wellington Street West
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M5K 1B7

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416-947-5016 (t)

Counsel to the Kanata Greenspace Protection Coalition

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TAB 1

PL200195

ONTARIO LAND TRIBUNAL

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REPLY TO RESPONSE TO MOTION OF CLUBLINK CORPORATION ULC**REGARDING THE WITNESS STATEMENT OF DOUGLAS NUTTALL**

REPLY TO RESPONSE TO MOTION

ClubLink Corporation ULC (“**ClubLink**”) will make a Reply to the Notice of Response to Motion filed by the Kanata Greenspace Protection Coalition (the “**KGPC**”) on January 7, 2022 to the Ontario Land Tribunal (the “**Tribunal**”), at 10:00 a.m. on January 17, 2022 by videoconference, or as soon thereafter as the Motion can be heard.

CLUBLINK REQUESTS:

1. The granting of the relief requested by ClubLink in its Notice of Motion dated December 29, 2021.
2. Such other and further relief as ClubLink may request and the Tribunal will allow.

THE GROUNDS TO BE RELIED UPON IN REPLY ARE:

3. This Reply uses the terms defined in ClubLink’s Notice of Motion.
4. Consideration of the Restrictive Covenant is not required to understand the existing stormwater management systems on the subject lands and the surrounding lands.
5. Consideration of the Restrictive Covenant is not required to ensure the stormwater management system for the Proposed Redevelopment does not adversely affect lands in the vicinity of the subject lands or lands in the vicinity of bodies of water which receive stormwater from the subject lands.
6. The Restrictive Covenant is not relevant to the stormwater management matters in issue on the Appeals.

7. Mr. Nuttall asserts that where matters which were relevant to his review fell outside of his expertise, he relied on the opinions of other experts retained by the KGPC, including Mr. Dennis Jacobs. However, nowhere in Mr. Nuttall's witness statement did he indicate that he is relying on the opinions of Mr. Jacobs. In fact, there is no mention of Mr. Jacobs whatsoever in Mr. Nuttall's witness statement, nor has any explanation been offered as to how parkland dedication matters are of any relevance to Mr. Nuttall's review or opinions as a water resources engineer.

THE FOLLOWING DOCUMENTS WILL BE USED AT THE HEARING OF THE MOTION:

8. The Reply Affidavit of Stephen Pichette, sworn January 12, 2022.
9. The Reply Affidavit of Jean-Francois Sabourin, sworn January 12, 2022.
10. The Motion Record of ClubLink dated December 29, 2021.
11. The Responding Motion Record of the KGPC.
12. The Tribunal's file materials in respect of Case No. PL200195.
13. Such further and other documentary evidence as the Tribunal may permit.

January 12, 2022

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Counsel to ClubLink Corporation ULC

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AND TO: **WEIRFOULDS LLP**
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416-947-5016 (t)

Counsel to the Kanata Greenspace Protection Coalition

TAB 2

PL200195

ONTARIO LAND TRIBUNAL

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OLT File No.:	PL200196

REPLY AFFIDAVIT OF STEPHEN J. PICHETTE, P.ENG.

I, Stephen J. Pichette, P.Eng., of the City of Ottawa, Province of Ontario, MAKE OATH AND SAY AS FOLLOWS:

1. I am a professional engineer and currently the General Manager of the Ottawa Division of David Schaeffer Engineering Ltd. (“**DSEL**”). I have 38 years of experience in providing engineering services to public and private sector clients in the Ottawa area. I have completed numerous detailed designs including Master Infrastructure studies for residential and commercial developments where the scope of works included design of underground infrastructure including storm sewers, sanitary sewers, watermains and stormwater management (“**SWM**”) facilities and I have previously been qualified as an expert witness at the Ontario Land Tribunal (formerly the Ontario Municipal Board).
2. Attached to this Affidavit as **Exhibit “A”** is a copy of my *curriculum vitae*.
3. Attached to this Affidavit as **Exhibit “B”** is a signed Acknowledgement of Expert’s Duty.
4. DSEL was retained in March 2018 by Minto Communities - Canada on behalf of ClubLink Corporation ULC (“**ClubLink**”) to address civil engineering requirements to support draft plan of subdivision and zoning by-law amendment applications for the proposed redevelopment of 7000 Campeau Drive, Ottawa (the “**Proposed Redevelopment**”). DSEL prepared and submitted a Functional Servicing Report and associated drawings in support of the applications for draft plan of subdivision and zoning by-law amendment.

5. I have also prepared a Witness Statement dated November 12, 2021 and a Reply Witness Statement dated December 10, 2021 for the Tribunal's hearing of ClubLink's appeals, which is scheduled to commence on January 17, 2022.
6. As such, I have knowledge of the matters contained in this Affidavit.

Reply to the Affidavit of Douglas Nuttall

7. I have reviewed the Affidavit of Douglas Nuttall, affirmed on January 7, 2022 (the "**Nuttall Affidavit**"), on behalf of the Kanata Greenspace Protection Coalition, in response to ClubLink's notice of motion seeking an order that evidence in relation to a restrictive covenant between ClubLink Capital Corporation and Imasco Enterprises Inc., which was registered on title to the ClubLink Lands on January 8, 1997 (the "**Restrictive Covenant**"), is not admissible.
8. DSEL (civil engineering) and ClubLink's other engineering consultants, J.F. Sabourin and Associates Inc. (water resources engineering), Geo Morphix Ltd. (geomorphology) and Paterson Group (geotechnical engineering and hydrogeology) have collectively reviewed the existing stormwater management systems on the subject lands and the surrounding lands.
9. In my opinion, consideration of the Restrictive Covenant, which I understand is an agreement between private parties, is not required to understand the existing stormwater management systems on the subject lands and the surrounding lands.
10. In designing a proposed stormwater management system for the Proposed Redevelopment, a guiding principle is to not adversely affect lands in the vicinity

of the subject lands or lands in the vicinity of bodies of water which receive stormwater from the subject lands.

11. In my opinion, consideration of the Restrictive Covenant is not required to ensure there are no such adverse effects.
12. In my opinion, the Restrictive Covenant is not relevant to the work I and ClubLink's other engineering consultants have undertaken in relation to the Proposed Redevelopment from a stormwater management perspective.
13. In neither the pre-application consultation process nor during the processing of the applications for the Proposed Redevelopment did City of Ottawa staff identify the Restrictive Covenant as a document that I should review or that was relevant to the Proposed Redevelopment.

Sworn by video conference by Stephen J.)
Pichette at the City of Ottawa, in the)
Province of Ontario, before me in the City of)
Toronto on this 12th day of January, 2022, in)
accordance with O. Reg. 431/20,)
“Administering Oath or Declaration)
Remotely”:



Commissioner for Taking Affidavits, etc.

A handwritten signature in blue ink, appearing to read "Stephen J. Pichette". The signature is stylized with loops and extends horizontally across the page.

**THIS IS EXHIBIT "A" REFERRED TO IN THE AFFIDAVIT
OF STEPHEN J. PICHETTE SWORN BEFORE ME THIS
12th DAY OF JANUARY, 2022.**



A Commissioner, etc.

STEPHEN J. PICHETTE, P.ENG.

Ottawa General Manager

OVERVIEW

Steve Pichette started the DSEL Ottawa branch in 2007. He is the General Manager of the Ottawa Division of David Schaeffer Engineering Ltd. His experience focuses on managing design teams, completing designs of municipal subdivisions and major commercial developments.

PROFESSIONAL BACKGROUND

2007 – Present | DSEL, Ottawa General Manager

- ♦ Responsible for managing all the day to day activities of the office
- ♦ Managing design teams
- ♦ Completing designs for municipal subdivisions and major commercial developments.

2000 – 2007 | Stantec Consulting Limited, Managing Leader of the Land Development Group

- ♦ Responsible for managing day to day activities of the office, including management
- ♦ Project oversight for various residential, commercial, and master planning projects.
- ♦ Managing and leading approximately 35 employees

1983 – 2000 | Oliver, Mangione, McCalla and Associates, Manager of Urban Development

- ♦ Responsible for managing a design team
- ♦ Completing designs of municipal subdivisions, major commercial development, and master servicing studies.

PROFESSIONAL AFFILIATIONS

- ♦ Professional Engineers
Ontario-1985
- ♦ Designated Consulting
Engineer-1994

EDUCATION

- ♦ **1983**
Bachelor of Applied Science,
Civil Engineering, University of
Ottawa

STEPHEN J. PICHETTE, P.ENG.

Ottawa General Manager

PROJECT EXPERIENCE

Master Planning

- ◆ Kanata West Master Servicing Study
- ◆ Eden Park Master Servicing Study
- ◆ Barrhaven South Master Servicing Study
- ◆ Trails Edge Master Servicing Study
- ◆ Cardinal Creek Master servicing Study

Residential Subdivisions

- ◆ Fairwinds Residential Subdivision – City of Ottawa (Formerly the City of Kanata)
- ◆ Half Moon Bay Residential Subdivision – City of Ottawa (Formerly the City of Nepean)
- ◆ Queensdale Residential Subdivision – City of Ottawa
- ◆ Riverside South – City of Ottawa
- ◆ West Village Residential Subdivision – City of Ottawa
- ◆ Place des Gouverneurs – City of Ottawa

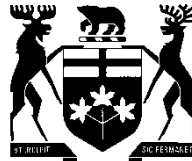
Commercial Developments

- ◆ Trinity, Gardiners Road – Kingston, ON
- ◆ Loblaw, Richmond Road – Ottawa, ON

**THIS IS EXHIBIT "B" REFERRED TO IN THE AFFIDAVIT
OF STEPHEN J. PICHETTE SWORN BEFORE ME THIS
12th DAY OF JANUARY, 2022.**

A handwritten signature in black ink, appearing to be 'JR' or similar, written above a horizontal line.

A Commissioner, etc.



Ontario

Ontario Land Tribunal

Tribunal ontarien de l'aménagement du territoire

Acknowledgment Of Expert's Duty

OLT Case Number	Municipality
PL200195	City of Ottawa

1. My name is Stephen Pichette
I live within the City of Ottawa
in the Ottawa-Carleton County
in the province of Ontario
2. I have been engaged by or on behalf of ClubLink Corporation ULC to provide evidence in relation to the above-noted Ontario Land Tribunal ('Tribunal') proceeding.
3. I acknowledge that it is my duty to provide evidence in relation to this proceeding as follows:
 - a. to provide opinion evidence that is fair, objective and non-partisan;
 - b. to provide opinion evidence that is related only to matters that are within my area of expertise;
 - c. to provide such additional assistance as the Tribunal may reasonably require, to determine a matter in issue; and
 - d. not to seek or receive assistance or communication, except technical support, while under cross examination, through any means including any electronic means, from any third party, including but not limited to legal counsel or client.
4. I acknowledge that the duty referred to above prevails over any obligation which I may owe to any party by whom or on whose behalf I am engaged.

Date November 11, 2021

 A handwritten signature in black ink, appearing to read 'Stephen Pichette', written over a dotted line.

Signature

TAB 3

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REPLY AFFIDAVIT OF JEAN-FRANCOIS SABOURIN, P.ENG.

I, Jean-Francois Sabourin, P.Eng., of the City of Ottawa, Province of Ontario,
MAKE OATH AND SAY AS FOLLOWS:

1. I am a water resources engineer with 38 years of experience in providing engineering services to public and private sector clients in the geographic regions within Eastern Ontario and the Greater Toronto Area, as well as across the province of Québec. I have undertaken, managed and directed numerous water resources related studies, such as detailed conceptual drainage designs for new developments, rehabilitation of municipal projects related to drainage systems, low impact development (LID) research studies, flood mapping studies, watershed studies, rainfall / flow / snowmelt monitoring studies, hydrologic model calibration, master drainage plans, and development and programming of hydrologic software that is distributed across Canada, such as SWMHYMO.
2. Attached to this Affidavit as **Exhibit “A”** is a copy of my *curriculum vitae*.
3. Attached to this Affidavit as **Exhibit “B”** is a signed Acknowledgement of Expert’s Duty.
4. J.F. Sabourin and Associates Inc. (JFSA), of which I am the Senior Water Resources Engineer and President, was retained by David Schaeffer Engineering Ltd. on behalf of ClubLink Corporation ULC (“**ClubLink**”) to address stormwater management requirements to support draft plan of subdivision and zoning by-law amendment applications for the proposed redevelopment of 7000 Campeau Drive, Ottawa (the “**Proposed Redevelopment**”). As part of this retainer, I prepared a number of reports.

5. I have also prepared a Witness Statement dated November 12, 2021 and a Reply Witness Statement dated December 10, 2021 for the Tribunal's hearing of ClubLink's appeals, which is scheduled to commence on January 17, 2022.
6. As such, I have knowledge of the matters contained in this Affidavit.

Reply to the Affidavit of Douglas Nuttall

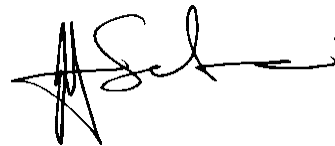
7. I have reviewed the Affidavit of Douglas Nuttall, affirmed on January 7, 2022 (the "**Nuttall Affidavit**"), on behalf of the Kanata Greenspace Protection Coalition, in response to ClubLink's notice of motion seeking an order that evidence in relation to a restrictive covenant between ClubLink Capital Corporation and Imasco Enterprises Inc., which was registered on title to the ClubLink Lands on January 8, 1997 (the "**Restrictive Covenant**"), is not admissible.
8. A main objective of the stormwater management work for the Proposed Redevelopment and all development projects is to ensure no negative impacts to the local and downstream existing conditions.
9. The City's hydrologic model for the Beaver Pond and Kizell Drain (prepared by AECOM), which is also used by the Mississippi Valley Conservation Authority, accounts for the stormwater management features and quantity control benefits of the subject lands. I have further calibrated this model based on local rainfall and flow measurements that were collected in 2019.

10. The stormwater management design for the Proposed Redevelopment has therefore accounted for the stormwater features and quantity control benefits of the subject lands to establish the existing conditions.
11. In my opinion, consideration of the Restrictive Covenant, which I understand is an agreement between private parties, is not required to understand the existing conditions on the subject lands and the surrounding lands from a stormwater management perspective.
12. The stormwater management design for the Proposed Redevelopment will not increase the risk of flooding to the existing surrounding community, nor will it increase the 100-year flows downstream, nor will it adversely impact existing conditions.
13. In my opinion, the Restrictive Covenant is not relevant to the work I have undertaken in relation to the Proposed Redevelopment from a stormwater management perspective.
14. In neither the pre-application consultation process nor during the processing of the applications for the Proposed Redevelopment did City of Ottawa staff identify the Restrictive Covenant as a document that I should review or that was relevant to the Proposed Redevelopment.

Sworn by video conference by Jean-
 Francois Sabourin at the City of Ottawa, in
 the Province of Ontario, before me in the
 City of Toronto on this 12th day of January,
 2022, in accordance with O. Reg. 431/20,
 "Administering Oath or Declaration
 Remotely":



Commissioner for Taking Affidavits, etc.



Jean-Francois Sabourin, P.Eng.

**THIS IS EXHIBIT "A" REFERRED TO IN THE AFFIDAVIT
OF JEAN-FRANCOIS SABOURIN SWORN BEFORE ME THIS
12th DAY OF JANUARY, 2022.**



A Commissioner, etc.



Jean-François Sabourin, M.Eng, P.Eng., ing.

Senior Water Resources Engineer
President

EDUCATION

- Bachelor in Applied Sciences (B.A.Sc.Eng.), U.of O, 1979-83
- Masters in Engineering (M.Eng., Water Resources)
University of Ottawa, 1987-1992 (part time)

LANGUAGES

- English
- French

EMPLOYMENT

- 1993-now J.F. Sabourin and Associates Inc.
- 1987-1993 Paul Wisner & Associates - Water Resources
- 1986-1987 University of Ottawa - IMPSWM Research Group
- 1984-1986 W.Rourke Ltd - General Construction Division
- 1983 University of Ottawa - IMPSWM Research Group
- 1982 (Co-op term) Ontario Hydro - Transmission Line Div.
- 1981 (Co-op term) Parks Canada - Prof. Services Division

POSITION

Director of Water Resources Projects
Associate & Project manager
Research assistant coordinator
Project manager and Field Supervisor
Research assistant
Co-op student
Co-op student

PROFILE

Mr. Sabourin graduated in 1983 from the University of Ottawa where he obtained both a Bachelor of Applied Science degree in Civil Engineering and a Master's degree in Engineering (Water Resources). With his numerous years and depth of experience, Mr. Sabourin is considered to be an expert in various aspects of water resources, such as urban hydrology, sewer and river hydraulics, flood plain and flood line mapping, development of computer models, and planning / design of stormwater management systems. As President and Director of Water Resources Projects for JFSA, Mr. Sabourin has participated / coordinated / undertaken over 1500 environmental related projects, with a primary focus on water resources. Mr. Sabourin's practical experience, combined with his research capabilities, exceptional communication and relationship building abilities are the basis for his frequent involvement in the development of policy and guidelines in the water resource arena, as well as regular appointment as a reviewer of reports and documents prepared in support of national, provincial and local initiatives/development. Mr. Sabourin oversees the work of more than 30 employees at JFSA's 5 offices in Ontario and Quebec, ranging in disciplines including water resources engineers, hydrologists, hydrogeologists, biologists, land planners and technical support staff.

OVERALL EXPERIENCE

DEVELOPMENT/ REVIEW OF GUIDELINES AND REPORTS

- **Project manager and main author of a computerized "Selection Tool" for the assessment of urban drainage systems.** Developed with and for The Toronto and Region Conservation Authority, (1999), Toronto, Ontario.
- **Contributor to Impacts and Adaptation of Drainage Systems, Design Methods and Policies** - investigated and quantified the potential effects of climate change on drainage infrastructure and performance of existing stormwater management ponds. Study by Kije Sipi Ltd. in partnership with City of Edmonton, Regional Municipality of Ottawa-Carleton and the Mississippi Valley Conservation Authority. For Natural Resources Canada, Climate Change Action Fund, 2000 - 2001.
- **Contributor to a Climate Change Action Fund research project;** investigated and quantified the potential effects of climate change on drainage infrastructure and performance of existing stormwater management ponds.
- **Project manager and coordinator of an updated research study on the use of grass swales and perforated pipe drainage systems.** Undertaken in partnership with RMOC, MOEE/SWAMP, City of Ottawa, City of Gloucester, City of Nepean, City of Kanata, and four pipe manufacturers, Ottawa, Ontario.
- **Development of a Hydrologic Model Calibration Guideline,** for the City of Ottawa, Ontario.
- **Guidance for the Evaluation of Water Monitoring Networks for Climate Change Adaptation,**

CCME. The project resulted in a reference document (Selected Tools to Evaluate Water Monitoring Networks for Climate Change Adaptation) for non-specialist water managers and climate change adaptation planners. The document was developed to help Canadian federal, provincial and territorial governments determine the suitability of their water monitoring networks to provide the data needed to plan for and to adapt to a changing climate. The document describes proven and practical ways for jurisdictions to set priorities for water monitoring networks for climate change adaptation, and then evaluate the ability of these networks to provide the data needed to support climate change adaptation needs. (August 2010 to January 2011)

- **Updated and developed a Design Guideline and oversaw the development of the GSPP Design Tool for the design and construction of Grass-Swale-Perforated-Pipe-Drainage systems** for the City of Ottawa, Ontario.
- **Update to City of Ottawa SWM Guidelines** to address key issues associated with stormwater management and conveyance in new development projects within the City of Ottawa including: developing flat lands where major system capacity is limited; the impact of increasing imperviousness (due to intensification) and changing design standards on existing and proposed infrastructure and overland flow routes; and the need to plan for climate change. To help visualize how the proposed standard changes, City of Ottawa, Ontario. (May 2017)
- **Initiated an Analysis of Rainfall Drying Time on Common Urban Materials** with RiverLabs in Cornwall, Ontario. Purpose of these investigations was to improve estimates of evaporation by quantitatively measuring the drying time of common anthropogenic surfaces. The project took into consideration temperature, wind speed and relative humidity, all of which impact the rates of evaporation of water on anthropogenic surfaces. (March 2017)
- **Climate Change Adaptation – Water Monitoring Data Requirements and Indicators**, Canadian Council of Ministers of the Environment (CCME). Study which identified the hydrologic parameters that should be measured by water monitoring networks in Canada for climate vulnerability assessment and climate change adaptation planning.
- **National Floodplain Mapping Assessment contributor and reviewer** for report establishing framework for Canadian Government development of floodplain management supporting national documents and guidelines. (2015/16)
- **Review of PIEVC Protocols that deal with stormwater related public infrastructure**, Infrastructure Canada. The purpose of this study was to assess if the current PIEVC protocols can adequately assist a city with the evaluation of the vulnerability of their storm water infrastructure to climate change.
- **Review of Low Impact Development Stormwater Management Guidance Manual** for Ministry of Environment and Climate Change Low (2017/18)
- Designer, Project Manager and Coordinator of development and delivery of **Flood Preparation and Response Tool** for City of Ottawa (2018/19)
- Reviewer of **Risk Return on Investment Tool Technical Manual** for Credit Valley Conservation Authority and Risk Sciences International (2019 ongoing).

FLOOD PLAIN MANAGEMENT / WATERSHED ANALYSIS / URBAN STORMWATER MANAGEMENT (1986 to Present)

- **Conducted or was senior technical advisor on numerous flood plain, flood line and fill line delineation studies** on numerous watercourses: Cataraqui Creek; Highgate Creek; Grand Canal, La Drize and La Jagne Rivers, Switzerland; Shirley's Brook; Sixteen Mile Creek; Taylor Creek; Upper Thames River; Garry River; Ottawa River near Britannia; Ottawa River near Moussette Beach, Gatineau (formerly Hull), Québec; Gatineau River at Lac Leamy, Gatineau (formerly Hull), Québec; Ottawa River near Clarence Island; Ottawa River near Hamilton Island, Hawkesbury, Ontario; Rideau River at City Hall, Ottawa, Ontario; Tributaries C and D, Brampton, Ontario; Daigneault Creek, Brossard, Québec; Moore Creek, Gatineau, Québec; Humber River within the City of Toronto, Ontario; Jock River, Ontario; Ottawa River near Rockland, Ontario; Village of Richmond Flood Plain Mapping, City of Ottawa, Ontario; Gatineau River Floodplain Mapping between Ottawa River and Farmer Rapids Power Dam, Gatineau, Québec, (March 2012 to June 2013); Marcoux Municipal Drain, North Glengarry; Castor

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River Tributary preliminary floodplain mapping.

- **Conducted or senior technical advisor to numerous technical reviews and peer reviews of flood plain mapping reports and related work**, including hydrologic and hydraulic analyses and modelling, including: Technical Review of 2015/2016 and 2018-2020 (ongoing) Conservation Authority Flood Plain Mapping Reports for City of Ottawa; Ottawa River Flood Risk Mapping, City of Ottawa; John Boyce and Osgoode Garden Cedar Acres Municipal Drain, South Nation Conservation; Glen Meadows Estates, Town of Arnprior (stormwater management plan, flooding issues); Rideau River (Hogs Back Falls to Ottawa River; Kars to Hogs Back Falls, and Buritts Rapids to Kars); Constance Creek;
- **Senior investigator and one of the authors for a National Floodplain Mapping Assessment**, conducted for Public Safety Canada, Ottawa with MMM Group (lead), to assess the current status of flood plain mapping in Canada (2013/2014).
- Participated in several **watershed analyses and Master Drainage Plans (MDP)**: Ingleside; Area 1A, Markham; Barcelona (for 1992 Olympics), Spain; Riviere Milette, Trois-Riviere; Le Grand Canal, Switzerland; La Drize, Switzerland; Bath Creek, Bath; Relief sewer analysis, Hawkesbury; Riverbend Road Neighborhoods, Edmonton; Exhibition Creek, Markham; MGS Lands, Markham; Garry River, Alexandria; Moore Creek, Aylmer-Hull; Moose Creek, Casselman; Daigneault Creek, Brossard; Moreau Creek, Gatineau; Jock River, Ottawa; Moore Creek, Gatineau.
- **Designed Stormwater Management Plans** for various types of development: Aldermac Orphan Mine Site, Val d'Or; Cardinal Trail 2, Ottawa; Scugog Island Casino, Scugog; Zellers Property, Hawkesbury; Cardinal Trail 3, Ottawa; Le Plateau de la Capitale, Hull; Lazyboy, Innes Road, Ottawa; Secteur C, Ville de Brossard; Cardinal Trail 6, Ottawa; Vales of Castlemoore South Subdivision, Brampton; Tumbridge Subdivision Phase 1, Brampton; Forest Ridge Infill Development, Ottawa; Hull Armories, Gatineau; Morris Village, Rockland; Moodie Drive Townhouse Infill Development, Ottawa; Cambrian Heights Phase V, Ottawa; Corvenelli Development, Russell; Shomberg Subdivision, King Township.
- **Designed and built a physical river and town model** to determine flood water levels in conjunction with a mathematical river model. Both models were verified against measured flood data and alternatives to reduce risks of flooding were determined, St. Mary's, Ontario.
- **Dispersion and assimilative studies** undertaken for a proposed causeway on the Ottawa River: Clarence Island, Clarence-Thurso; for a proposed sewage treatment outfall on the St-Lawrence River: Ingleside, Ontario.
- **Developed Infiltration / Inflow models** for the analysis of sanitary sewer systems: RMOC, Ottawa; City of St. Therese, Québec; City of Edmonton, Alberta.
- **Developed Stormwater Management (SWM) design criteria** for on-site detention in Markham, Ontario.
- **Water budget analyses** prepared for Summerside Wetland in London, Ontario; Mattamy Staines Subdivision Morningside Heights Community, Toronto, Ontario.
- **Overseeing surface water component of water budget analysis** for East Urban Community Mixed Use Development and watercourse assessment and feature specific water budget analysis for the proposed Fernbank Quarry, Ottawa, Ontario
- **Conducted flood damage estimations** from high river water levels and wind effects (wave + setup). Potential flood damage reduction measures were also identified. Lac Deschenes, Ottawa, Ontario.
- **Senior technical advisor for Hydrologic and Hydraulic Assessment**, Chamberland Street, City of Clarence-Rockland: assessment of flooding potential.
- **Collaboration with fluvial geomorphologist** on the Greens Creek Watershed: Integrated Fluvial Geomorphology and Hydrological Study in which data on the watershed's existing conditions were gathered from background information, field investigations, and hydrological analysis and used with the geomorphological assessment to advance understanding of the hydrological functioning of the watershed and subwatersheds, for National Capital Commission, Ottawa, Ontario
- Participated to the **development of the Stomwater Management Strategy**, Phase 1 - Understanding the System, for the City of Ottawa, Ontario.
- **Undertook subwatershed analysis** to evaluate the SWM needs for the development of a site by the

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Department of National Defence, in the Ottawa, Ontario.

- **Stormwater Management Planning and Design** for Hunt Club Road Extension from Hawthorne Road to new MTO Interchange on Hwy 417, City of Ottawa, Ontario.
- **Hydrology/hydraulic components** of Pinecrest Creek Restoration Plan: Integrating Fluvial Geomorphology, Hydrology and Ecology, for National Capital Commission, Ottawa, Ontario
- **Pinecrest Creek/Westboro Stormwater Management Retrofit Study, Pinecrest/Centrepointe Stormwater Management Criteria Study, and SWM Guidelines for Pinecrest Creek/Westboro Area (in progress), and the Feasibility Study** for the Implementation of SWM Retrofit Measures on City Owned Properties using LID measures, for City of Ottawa, Ontario.
- **Preliminary SWM plan, pond design, floodplain analysis and channel realignment** for Richmond Village Development (in progress), for DSEL, City of Ottawa., Ontario.
- **Westboro Lot Level Pilot Project**, provision of technical assistance to Carleton University engineering students preparing preliminary modelling to design and assess lot level SWM retrofit project, for City of Ottawa, Ontario
- **SWM Facility Feasibility Study** for a Surface Stormwater Management Facility on NCC Lands at Baseline Road and Woodroffe Ave, for City of Ottawa, Ontario.
- Monahan Drain Constructed Wetland, **preparation of Design Brief for the Reconstruction of the Monahan Drain Constructed Wetland** and associated studies and retrofit, for DSEL, Ottawa, Ontario.
- Monahan Drain Constructed **Wetland, Cell 1 model update**, for the City of Ottawa, Ontario.
- Feedmill Creek **SWM Criteria Study** , for City of Ottawa, Ontario
- **Pinecrest Creek Cumulative Impacts Study** (Morrison Hershfield Ltd. for City of Ottawa, Ontario)
- **Technical advisor in the design of a retrofit SWM pond** at the head of Pinecrest Creek (in progress), with Morrison Hershfield Ltd. for the City of Ottawa.
- **Hydrodynamic Analysis** of the Lower Reach of the Jock River, for Caivan Properties, in Ottawa, Ontario (2017 to 2019).
- **Lead engineer in a 2D Hydraulic analysis** of McKinnons Creek floodplain analysis, in Ottawa, Ontario (September 2017).
- **Lead engineer and designer of a Flood Preparedness 3D Visual Tool** to manage resources during flood periods on the Ottawa River and Rideau River, City of Ottawa, 2019. The tool was effectively used by the City and the Canadian military during the 2019 flood.

CONCEPTUAL DESIGN

- **Prepared preliminary and detailed designs of stormwater quantity /quality pond:** JML Subdivision, Alexandria, Ontario; Secteur C (5 ponds), Brossard, Québec; Ruisseau Leamy, Hull, Québec; Rollin Subdivision, Vars; Cambrian Heights Phase V, Ottawa; Le Breton Flats Development, Ottawa; Morris Village, Rockland; Mayfield West Community (11 ponds), Town of Caledon; Quartier des Bois Subdivision, Casselman; Tranquility West Subdivision, Town of Richmond Hill; Mattamy on Rouge Subdivision, City of Toronto; Timber Trails Phase II, City of Pickering; Lafèche Environmental Landfill Site (200 ha), Casselman; Deglos Landfill Site (60 ha), St.Lucia (UK); Le Plateau de la Capitale (4 ponds), Gatineau;
- **Participated in several trunk sewer designs:** Lynnwood Village, Ottawa; Hawskbury, Ontario; Markham, Ontario; Brossard, Québec.
- **Developed a model for the design of Grass Swale Perforated Pipe drainage systems:** MOE research study.
- **Designed strip marshes within an existing drainage system** to reduce nutrient levels in contaminated stormwater: Maitland, Ontario.
- **Prepared preliminary and detailed design of new storm sewers** for Crestview Road: Ottawa, Ontario.
- **Analysed the initial and prepared final drainage design** for the Earl Armstrong Park and Ride facility

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in Ottawa, Ontario; in order to meet previously set target flows rates, the use of underground storage and surface storage had to be incorporated in the design requiring extensive hydraulic analyses; in Ottawa, Ontario.

- **Oversaw the hydrologic and hydraulic analyses** required to design the necessary underground storage and surface storage for the stormwater management for the Woodroffe Ave. (Chapman Hills) Park and Ride facility in Ottawa, Ontario.
- **Conceptual Drainage Design**, Cardinal Creek Village, for DSEL, in Ottawa, Ontario.
- **Participated to the design of a permeable pavement demonstration project for parking rehabillitee projects with the City of Ottawa, 2019-21.**

SEWER INFRASTRUCTURE ANALYSES AND UPGRADE / I-I ANALYSES / MODEL DEVELOPMENT & CALIBRATION / CSO ANALYSES

- **Infiltration/Inflow analyses** in sanitary sewers using measured data and calibrated mathematical models: Alta-Vista, Ottawa; Bathurst & Wilson, North York; RMOC, Ottawa, Ontario
- Undertook an **Infiltration/Inflow and CSO Modelling Study** for the upgrade of a treatment plant, Ste-Thérèse and Blainville, North of Montréal, Québec.
- **CSO Modelling and Infiltration/Inflow Study** for the upgrade of a treatment plant, Ste-Thérèse and Blainville, North of Montréal, Québec.
- **Analyses of flow monitoring data and calibration: of a complex hydrologic/hydraulic I/I model**, RMOC; of a partially and combined sewer system in the North Rosedale and Moore Park districts, City of Toronto, Ontario.
- **Sewer Rehabilitation and Sewer Hydraulic study**, Town of Hawkesbury; Crestview Road, Ottawa; Fallowfield Road, Ottawa.
- **Development of a Variable Diurnal DWF model**, City of Edmonton, Alberta. This model has been used successfully for the City of Toronto, and in the Ottawa area.
- **Infiltration/Inflow Analysis, Sewer Hydraulic, Model Calibration, and Sewer Rehabilitation Study** to identify feasible and cost effective solutions to reduce the occurrence of basement flooding, City of Gatineau, Québec.
- **Analysis of flow data and combined sewer overflows to calibrate a hydrologic model** which was then used to evaluate the effects of various flow reduction measures: City of Toronto, Ontario.
- **Servicing study** for the Sector C in Brossard, Québec.
- **Sewer Rehabilitation, CSO Reduction and Sewer Hydraulic study** for the Old Ottawa East area, Ottawa, Ontario.
- **Estimation of sewer flows (sanitary and storm) for new storm sewers and partially separated sewers** for Argyle Street and Park Avenue Sewer Rehabilitation, Ottawa, Ontario.
- **SWMHYMO model calibration and validation, as well as PCSWMM model validation for the drainage area to the Beaver Pond in the Kanata Lakes subdivision (2018-2020).**
- **SWMHYMO model calibration for the Shirley's Brook subwatershed in Kanata, (2021)**

WATER QUALITY & EROSION CONTROL

Development of a methodology for the assessment of chloride impacts on receiving waters from several alternative snow dump sites in the City of Ottawa (formerly Ottawa-Carleton Regional Municipality), Ontario. The method is based on a regional analysis of monthly low flows and background concentrations. Based on snowmelt runoff rates from snow dumps and potential for dilution in the receiving water bodies, impact indices were determined.

- Undertook flow/velocity/quality measurements and dispersion analyses for the design of a treatment plant outfall in the St Lawrence River, Ingleside, Ontario.
- Conducted erosion protection studies and analyses of the effects of urbanization on erosion: Caledon, Ontario; Taylor Creek, Cumberland; Shirley's Brook, Kanata, Ontario.

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- Undertook flow/velocity measurements and shear stress analyses for the design of a beach protection scheme: Hull, Québec.
- Undertook field measurements and conducted a detailed water budget analysis of Lac Leamy to investigate the possibility of opening it to the Gatineau and Ottawa rivers: Hull, Québec.
- Undertook a water budget analysis of an existing wetland to identify impacts of a proposed future development where a portion of the future drainage area would be diverted: London, Ontario.
- Developed a stormwater quality management plan for an industrial site where high levels of nitrogen-based compounds are contaminating nearby surface water bodies: Maitland, Ontario.
- Participated to various Source Protection Surface Water Vulnerability Assessment studies for the towns/cities of Hawkesbury, Rockland, Plantagenet, Wendover, Perth, Smiths Falls, Carleton Place, Ontario.
- Hydrologic and hydraulic assessment along Mud Creek to support a Fluvial Geomorphic assessment for the Mud Creek Slope Stability Study, with Golder Associates for City of Ottawa, Ontario.

CONSTRUCTION, FIELD WORK AND MONITORING

- In charge of the construction supervision of a sewage lagoon for the Department of National Defence. Carp, Ontario.
- In charge of the construction supervision of an underground helicopter garage at a Department of National Defence base (Defenbunker), Carp, Ontario.
- Project engineer and general site manager of a \$ 2 million construction project for the City of Ottawa. Work included quantity estimates, orders, dealings with architects, engineers, unions and all subtrades. All aspects of work, schedules and meetings were coordinated and progress billings, invoicing, time sheets, etc. were also accounted for City of Ottawa, Ontario.
- Coordinated and participated in field investigations to obtain water quality and flow measurement quantities: St. Lawrence River, Ingleside; Ottawa River, Moussette Beach-Hull; Jock River, Goulbourn Township, Ontario
- Coordinated and participated in various sewer flow and water quality measurements: Amberwood sub-division, Nepean; Bravard subdivision, Manotick; Pineglen subdivision, Nepean; Heart's Desire subdivision, Nepean; Landfill site, Casselman, Ontario..
- Coordinated and participated in infiltration capacities and groundwater monitoring: Pineglen subdivision, Nepean; Heart's Desire subdivision, Nepean.
- Coordinated and participated in a GPS survey of approximately 2 km of a creek to be modelled with HEC-RAS, Ruisseau Moore, Hull, Québec.
- Coordinated and oversaw the gathering of ADCP flow and continuous water level monitoring on: Poole Creek (2008-2009) at the Amberwood Golf Course in Stittsville, Ontario; Dickinson Creek (2009) at the Nation Golf Club, in Curran, Ontario; and Greens Creek (2008), in Ottawa, Ontario.
- Coordinated and oversaw the gathering of ADCP flow measurements on: Pinecrest Creek (2009), in Ottawa, Ontario.; Carp River (2008-2009) at the Kinburn Gauge, in Ottawa, Ontario; Cardinal Creek (2012-2013) in Ottawa, Ontario; Jock River (2017), in Ottawa, Ontario.
- Coordinated and oversaw the gathering of continuous rainfall, storm sewer flow and pond water level data in and around the Kanata Lakes subdivision and Kanata Lakes Golf Course. The data was used to calibrate and validate hydrologic models (2018-19).
- Coordinated and oversaw the undertaking of surface infiltration tests at various locations; Amberwood Village (Ottawa, Ontario), Westport (Ontario), Barrhaven (Ottawa, Ontario), Stittsville wetland (Ottawa, Ontario), 2018-21.

EXPERT OPINION, REVIEW and OMB HEARINGS

Mr. Sabourin has conducted several reviews, analyses and acted as an expert witness to several damage causing storm and flooding event.

- July 1987 storm and flooding in the City of Montréal, Québec (analysis of rainfall and modelling

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analysis)

- April 1994 flooding on the Lapèche River, Québec (analysis of rainfall and modelling analysis)
- August 1996 storm and flooding in the Ottawa region, Ontario (analysis of rainfall and radar data, and modelling)
- August 1996 storm and flooding in the City of Gatineau, Québec (analysis of rainfall and radar data, and modelling)
- June 1997 flooding in the Village of l'Original, Ontario (modelling analysis)
- July 1997 storm and flooding in the City of St-Hubert, Québec (analysis of rainfall and radar data)
- July 1997 storm and flooding in the City of Chambly, Québec (analysis of rainfall and radar data)
- June 1998 storm and flooding in the City of Gatineau, Québec (sewer modelling analysis)
- January 1999 flooding on the Salmon River, New York (interpretation of data)
- June 2000 storm and flooding in the City of Gatineau, Québec (analysis of rainfall and radar data, and sewer modelling analysis)
- June 2001 storm in the City of St-Hubert, Québec (analysis of rainfall and radar data)
- 2001 to 2003 rainfall events in St. Lucia, UK (analysis of rainfall data)
- January 2003 flooding event at the Hull Casino, Québec (analysis and interpretation of event)
- December 2003; served as expert witness in drainage related matters in an OMB hearing for FrancoScenie.
- July 2004 storm and flooding in the City of Saint-Hyacinthe, Québec (analysis of rainfall and radar data)
- July 2004 storm in the City of Gatineau - Buckingham, Québec (interpretation of rainfall intensities and radar data).
- April 2005 of well contamination in the Town of l'Original, Ontario (analysis and interpretation of event)
- June 2005 storm and flooding event in the City of Shawinigan, Québec (analysis and interpretation of rainfall event using radar data).
- September 2005 storm and flooding event in the City of Québec, Québec (analysis and interpretation of rainfall event).
- August 2006 storm and flooding event in the Cities of Saint-Eustache and des Deux Montagnes, Québec (analysis and interpretation of rainfall event using radar data).
- August 2006 storm and flooding event in the Town of Saintes-Annes-des-Plaines, Québec (analysis and interpretation of rainfall event using radar data).
- June and July 2007 storm and flooding event in the City of Levis, Québec (analysis and interpretation of rainfall event using radar data).
- August 2, 2008, storm and flooding event in City of Montréal, Québec (analysis and interpretation of rainfall event using radar data, liaison with insurance companies and legal representatives). November 2009 onward,
- Progressive flooding of lands in the City of Terrebonne, Québec, following the construction of Highway 640 (continuous hydrologic and hydraulic simulations to determine if changes in drainage patterns caused by the construction of the 640 can explain the increase flooding frequency and duration of subject lands). Court appearance in the fall of 2014.
- September 2010 storm event in the Cities of Saint-Eustache and Rosemère, Québec (analysis and interpretation of rainfall event using radar data).
- June 23-24, 2012 storm and flooding event in City of Gatineau, Québec (analysis and interpretation of rainfall event using radar data - in progress).
- October 2014, expert witness report for the August 22, 2013 storm event in the City of Drummondville, Québec (analysis and interpretation of rainfall event using radar data).
- April 2015, served as expert witness in drainage related matters in an OMB hearing for the development of the Chenier Lands, in Ottawa.

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- October 2015, served as expert witness in drainage related matters in an OMB hearing for the development of the Bronte Green Lands, in Oakville, Ontario. Summer of 2016 acted as key hydrologic and hydraulic engineer in dealings to settle the case.
- February 2017, retained by both City of Ottawa and homeowner to assess and resolve a perceived drainage problem with the Emerald Estate subdivision, in Ottawa.
- December 2019, second trial (previous one was in 2014) on the impacts of improper design and maintenance of highway drainage which created wetlands on adjacent private properties in Terrebonne (Qc).

USE OF APPLIED HYDRAULIC AND HYDROLOGIC MODELS

- **OTTHYMO**: An improved version of HYMO (HYdrologic MOdel) which generates runoff from not only large non-urban basins, but also from urban basins.
- **INTERHYMO/OTTHYMO-89**: The newly expanded version of OTTHYMO.
- **SWMHYMO**: A single event and continuous model based on the principles of HYMO and OTTHYMO. Latest version of model also incorporates the Infiltration / Inflow capabilities of SEWHYMO.
- **QUALHYMO**: Is a unit hydrograph based hydrologic model used to predict the long-term quantity and quality of runoff from rural and urban watersheds. The model can also produce exceedance curves for overflows and pollutants in ponds.
- **SEWHYMO**: A single event and continuous model for the analysis of Infiltration / Inflow and combined sewer overflows
- **HEC-2 / HEC-RAS**: A mathematical river model used to determine water surface profiles for sub-critical and super-critical flow conditions.
- **IMPRAM**: A program for the Improved Rational Method used for sizing storm sewers.
- **CFA_3.1**: Is the Consolidated Frequency Analysis Package from Environment Canada used to generate flood frequency curves fitted to a series of annual floods or levels.
- **STORM**: Is the Storage Treatment Overflow Runoff Model used to predict the long-term quantity and quality of runoff from urban basins.
- **STORMS 2000 and STORM 2010**: A program used for the frequency of observed rainfall events
- **OTTSWMM and DDSWMM**: Is the University of Ottawa's improved version of SWMM (Storm Water Management Model from EPA) which generates runoff from urban basins by analysing both minor (pipes) and major (street) flows.
- **EXTRAN**: Us the EXtended TRANsport model distributed by EPA and used to dynamically analyse flow routing and surcharges in complex sewer systems.
- **HYSTEM/EXTRAN**: is the German version of EXTRAN.
- **SWMM / PC-SWMM / XP-SWMM / XP-STORM**: EPA's Stormwater Management Model.
- **MIDUSS**: Microcomputer Interactive Design of Urban Stormwater Systems, developed by A. Smith et al.

SOFTWARE DEVELOPMENT

Mr. Sabourin has over 30 years of programming experience including the development of numerous in-house programs to improve the company's and client's efficiency. Those programs and/or applications include:

- **IMPRAM**: The Improved Rational Method.
- **TRAINHYD**: A training hydrologic software.
- **FASTHYMO, MINI-OTTHYMO, LUMPHYD, ULTRA**: User friendly versions of the hydrograph commands from OTTHYMO
- **SEWHYMO**: A single event and continuous model for the analysis of Infiltration / Inflow and combined sewer overflows
- **OTTHYMO-89**: An improved version of the original OTTHYMO hydrologic model
- **SWMHYMO**: A single event and continuous model based on the principles of HYMO, OTTHYMO and

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QUALHYMO. Latest version of model also incorporates the Infiltration / Inflow capabilities of SEWHYMO.

- **STORMS, STORMS 2000 and STORMS 2010:** Programs to generate design storms, plot hyetographs, generate IDF curves and analyse the return period of an observed rainfall event.
- **PLOTHYD:** A program used to plot hydrographs generated by OTTHYMO-89 or SWMHYMO
- **DVMS for SEWER VIDEOS:** A digital video management system to accelerate the review and improve the use of sewer videos
- **DIG-VT:** Digital-Virtual Tour; a system that integrates the use of digital photos and GPS to allow users to conduct a virtual tour of, for instance a creek, from their computer.
- **Drainage System Selection Tool:** Designed the concept and directed the development of an EXCEL spreadsheet program that allows user to identify drainage system components that are compatible with specific site characteristics, development characteristics and SWM objectives. Based on user selected components, the tool provides approximate capital and operational costs for the drainage system.
- **GSPP:** Directed the development of a software integrated within an EXCEL spreadsheet that allows users to design grass swale and perforated pipe drainage systems.

RESEARCH CONTRIBUTIONS

- Was research associate of the IMPSWM program at the University of Ottawa.
- Developed several user friendly micro-computer programs: IMPRAM (Improved Rational Method), TRAINHYD (used to learn hydrologic principles), FASTHYMO, MINI-OTTHYMO, LUMPHYD, ULTRA.
- Contributed to the calibration of OTTHYMO on several watersheds using observed rainfall and runoff measurements.
- Tested, debugged and improved the QUALHYMO model.
- Tested and debugged the EXTRAN model.
- Developed and was main author of the INTERHYMO/OTTHYMO-89 hydrologic model.
- Analysed of real storms and determination of new design storms for the Town of Markham, Ontario.
- Compared of real storms with design storms for the City of Laval, Québec.
- Project manager of an MOE funded research study on the potential use of grass swales and perforated pipe storm drainage systems to control and reduce urban stormwater pollutant loadings, (1991-92).
- Developed and main author of the SEWHYMO infiltration/inflow model for sanitary sewers, (1993-94).
- Conducted a detailed analysis to determine the use of design storms in infiltration/inflow modeling. (M.Eng. Thesis) Developed and main author of the SWMHYMO model, an improved version of the popular OTTHYMO-89 hydrologic model, (1995-99). Project manager and main researcher for a study entitled
- "Evaluation of Roadside Ditches and Other Related Stormwater Management Practices" (1997) conducted for Toronto and Region Conservation Authority, Toronto, Ontario.
- Project manager and principle investigator for a demonstration project, Keep the Rain Out of the Drain, using alternative drainage methods for the City of Toronto, Moore-Park & Rosedale areas (1997-98), Toronto, Ontario.
- Project manager of an investigative study to measure the drying time of several types of surfaces / materials such as asphalt, concrete, roof singles, pavers, etc. (2017).
- Developed a methodology and managed the continuous monitoring of rainfall precipitation in a forest setting to determine / observe the process of wetting losses caused by trees and their leaves (2018 and 2019).
- Developed a methodology and managed the continuous monitoring of rainfall precipitation, wetting losses, retention, and evaporation of various soils, materials, and plants (2020).

LECTURES, PUBLICATIONS AND PAPERS

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Mr. Sabourin has lectured at several Urban Hydrology short courses in Markham, Ontario; Mississauga, Ontario; London, Ontario; Edmonton, Alberta; Calgary, Alberta; Laval, Québec; Vancouver, British Columbia; Toronto, Ontario. He is also the author/co-author of several published papers which were presented at conferences across Canada and abroad:

1. *"Comparison of the IMPRAM Model (Improved Rational Method) with other Hydrologic Models."*
2. *"Rule of Simplified Micro-Computer Models as Parts of Multi-level Hydrological Packages,"* Stormwater and Water Quality Management Modelling and SWM Users Group Meeting, Toronto, Sept. 17-18, 1986.
3. *"Teaching Models for Simulation and Real Time Control Operation of Urban Drainage Systems."*
4. *"Use of Physical and Mathematical Modelling for Bridge Hydraulics,"* XXII Congress IAHR, Lausanne, Switzerland, 1987.
5. *"Development of a Multi-Level Package of Stormwater Management Models."*
6. *"Design of Windpower Pumped Water Storage Reservoirs by Microcomputers,"* Microcomputers and Civil Engineering, Orlando, Florida, November, 1987.
7. *"Joint Use of the HEC-2 Model and a Physical Model for Floodline Delineation Upstream of a Bridge,"* Can. J. Civ. Eng., Vol 16 No 1, 1989.
8. *"The Use of Grass Swales and Perforated Pipes as a Stormwater Quality Control Alternative,"* Good Roads Conference, Penticton, B.C. (1991) and Toronto, Ont. (1993).
9. *"Mechanics of Scour in the Vicinity of Bridge Piers", Working paper, University of Ottawa, December, 1987.*
10. *"Performance Review of Grass Swale Perforated Storm Sewer Systems",* Annual Conference - Water Environment Association of Ontario, Windsor, Ontario, April 1994.
11. *"SEWHYMO-4, A Model for the Analysis of Infiltration / Inflow in Sanitary Sewer Systems",* unpublished.
12. *"Mathematical Simulation of Wet Weather Processes in a Sewerage System",* WEFTEC '94, Water Environment Federation 67th Annual Conference & Exposition, Chicago, Illinois, October 15-16, 1994.
13. *"Developing and Using a Dry Weather Flow Model for Sewerage Systems Analysis",* 1995 Annual Conference of the Canadian Society for Civil Engineering, June 1-3, 1995, Ottawa, Ontario.
14. *"The use of Design Storms for Infiltration / Inflow Modelling",* 1995 Annual Conference of the Canadian Society for Civil Engineering, June 1-3, 1995, Ottawa, Ontario.
15. *"Evaluation of Roadside Ditches and Other Related Stormwater Management Practices",* Controlling Stormwater: 2001 and Beyond, October 16-17, 1996, Burlington, Ontario.
16. *"Selection of an Optimum Road Drainage System",* SWAMP, Stormwater/CSO Technology Transfer Conference, February 23-24, 1998, Toronto, Ontario.
17. Taught the 4th university course CVG 45114 *"Hydraulics of Water Supply and Sewer Systems"* at the University of Ottawa, 2005.
18. *"Grass Swale and Perforated Pipe Drainage Systems a 20 year Performance Evaluation";* Credit Valley Conservation Workshop on "Lessons Learned from Impacting LID in Northern U.S. and Canada", Oct. 7th 2008.
19. *"Grass Swale and Perforated Pipe Drainage Systems a 20 year Performance Evaluation";* Water2010 International Conference, Québec City, July 2010.
20. *"Grass Swale and Perforated Pipe Drainage Systems a 20 year Performance Evaluation";* WEFTEC 2011. 84th Annual Water Environment Federation Technical Exhibition and Conference, Los Angeles, USA, October 2011.
21. *"Measurement of rainfall interception of tree canopies – how we had it wrong, all these years",* Unpublished, June 2020.

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**THIS IS EXHIBIT "B" REFERRED TO IN THE AFFIDAVIT
OF JEAN-FRANCOIS SABOURIN SWORN BEFORE ME THIS
12th DAY OF JANUARY, 2022.**



A Commissioner, etc.



Ontario

Ontario Land Tribunal

Tribunal ontarien de l'aménagement du territoire

Acknowledgment Of Expert's Duty

OLT Case Number	Municipality
PL200195	City of Ottawa

1. My name is.....Jean-Francois Sabourin
I live at the 124 Kimpton Drive
in the city ofOttawa
in the province ofOntario
2. I have been engaged by or on behalf of ClubLink Corporation ULC to provide evidence in relation to the above-noted Ontario Land Tribunal ('Tribunal') proceeding.
3. I acknowledge that it is my duty to provide evidence in relation to this proceeding as follows:
 - a. to provide opinion evidence that is fair, objective and non-partisan;
 - b. to provide opinion evidence that is related only to matters that are within my area of expertise;
 - c. to provide such additional assistance as the Tribunal may reasonably require, to determine a matter in issue; and
 - d. not to seek or receive assistance or communication, except technical support, while under cross examination, through any means including any electronic means, from any third party, including but not limited to legal counsel or client.
4. I acknowledge that the duty referred to above prevails over any obligation which I may owe to any party by whom or on whose behalf I am engaged.

Date.....

Nov 12 /21

Signature