



Stephen Brickman, P. Eng.

President, Project Manager/Project Engineer
Kitchener, Ontario

EXECUTIVE SUMMARY

Regarded as a leading expert in Drainage Act engineering in Ontario, I bring unparalleled expertise to urban and rural drainage projects. With a robust foundation in civil engineering and specialized training in the intricacies of the Drainage Act, my professional journey is marked by a series of successful, high-impact projects that span the spectrum of drainage engineering. At the helm of Headway

Engineering, I am not just at the forefront of engineering design and implementation but also a driving force in elevating the standards of practice within the province.

My commitment extends beyond project execution to shaping the future of Drainage Act engineering through comprehensive public education, policy advocacy, and technological advancement. With a portfolio of educational content and active participation in policy development, I am dedicated to advancing understanding and application of the Drainage Act, ensuring sustainable and compliant development. My mission is to innovate, educate, and lead in the evolution of drainage engineering in Ontario.

EDUCATION

Bachelor's Degree, Civil Engineering, Lakehead University 2012

Advanced Diploma of Civil Engineering Technology, Conestoga College, 2009

Drainage Superintendent's Course, Municipal Drainage, Ontario Ministry of Agriculture, Food and Rural Affairs 2009

MEMBERSHIPS

Professional Engineers Ontario (PEO)

Ontario Society of Professional Engineers (OSPE)

OSPE Land Drainage Committee (LDC) – *Former Board Member*

Drainage Superintendents Association of Ontario (DSAO)

Program Development Advisory (PDAC) with Conestoga College (Environmental Engineering Degree Program)

PROFESSIONAL EXPERIENCE

President, Headway Engineering, 2020 – Present

Project Manager, Dietrich Engineering Limited, 2012 – 2021

Professor, Conestoga College, 2016

Engineering Support, Gamsby and Mannerow (Now GEI), 2011

KNOWLEDGE BASE CONTRIBUTIONS

Headway Engineering Education Centre

Founded and contributed to the production of educational media aimed at demystifying the Drainage Act for the public and professionals.

“50 Years in the Making – Rehabilitation of the Royal Oak Municipal Drain”

2023: Proceedings from the 2023 Source to Stream Conference

“What Everyone Ought to Know about Ditch Enclosures”

2018: Proceedings from the 2018 Drainage Engineers Conference



RELEVANT PROJECT EXPERIENCE

2024 <u>Harriston Flood Mitigation Project (HFMP)</u>	
Client	Town of Minto
Key Points	<ul style="list-style-type: none">• Project Initiation:<ul style="list-style-type: none">○ The Town hired Headway Engineering to evaluate if the Drainage Act is suitable for large-scale construction works in the Maitland River, leading to their engagement for design work rather than appointment under the Drainage Act.• Hydrologic and hydraulic modelling• Design including:<ul style="list-style-type: none">○ Conceptual Options○ Determining Preferred Option○ Detailed Design• Cost Estimating including:<ul style="list-style-type: none">○ Right-of-Way Allowances○ Damage Allowances○ Construction○ Engineering○ Environmental Permitting○ Tendering, Construction Supervision, Contract Administration○ Administration• Develop Cost Distributions Scenarios• Public and Stakeholder Consultations and presentations• Design Reporting• Funding Applications and Reporting• Recommendations on Next Steps, specifically regarding the use of the Drainage Act as a vehicle to implement flood mitigation works.
Brief Description	Stephen is the Project Manager and Engineer for the Harriston Flood Mitigation Project in Minto. Stephen is working closely with Conservation Authority Staff and other engineering consultants. The Maitland River passes through the centre of Harriston and is not equipped with adequate capacity to safely convey extreme weather events through the town. Stephen developed complicated hydrologic and hydraulic models to accurately predict the response of the 27,000 acre watershed which includes a significant network of wetlands.
2023 <u>Bishop Municipal Drain</u>	
Client	Township of Norwich
Key Points	<ul style="list-style-type: none">• Appointed under the Drainage Act to Prepare an Engineer's Report• Project Initiation: Section 4 Petition• Design• Project Cost Estimating• Develop Cost Distributions• Public and Stakeholder Consultations and presentations• Drainage Report Preparation• Drainage Act Administration• Supervision of Construction Inspection and Contract Administration
Brief Description	Landowners upstream of an existing municipal drain, in need of legal outlets, initiated this project. As the project progressed, it became clear that the existing municipal drainage system was inadequate, necessitating a comprehensive upgrade.



2022 <u>Regional Road 21 Municipal Drain</u>	
Client	Norfolk County
Key Points	<ul style="list-style-type: none"> • Appointed under the Drainage Act to Prepare an Engineer's Report • Project Initiation: Section 4 Petition • Hydrologic and hydraulic modelling • Design • Project Cost Estimating • Develop Cost Distributions • Public and Stakeholder Consultations and presentations • Drainage Report Preparation • Drainage Act Administration • Supervision of Construction Inspection and Contract Administration
Brief Description	A developer initiated the need for an improved outlet at the upper end of an existing municipal drain. Additionally, the project offers legal outlets to roads owned by the County. The project included the complete reconstruction of over 500m of regional road, and the rehabilitation of a ravine in sensitive habitat.

2021 <u>Bruce Beach Municipal Drain – Phase I</u>	
Client	Township of Huron-Kinloss
Key Points	<ul style="list-style-type: none"> • Appointed under the Drainage Act to Prepare an Engineer's Report • Project Initiation: Section 4 Petition • Hydrologic and hydraulic modelling • Design • Project Cost Estimating • Develop Cost Distributions • Extensive Public and Stakeholder Consultations and presentations • Drainage Report Preparation • Funding Applications • Drainage Act Administration • Expert Witness at Tribunal Hearing • Supervision of Construction Inspection and Contract Administration
Brief Description	Lands along the lakefront, primarily used for cottages, were experiencing frequent flooding, causing hundreds of thousands of dollars in damage per event. The frequency of these floods was escalating due to runoff from a large watershed area being funneled into a ravine and then into a relatively flat area, leading to flooding. The project, aimed at addressing this issue, involved improvements to a large ravine and encompassed approximately 150 properties. These properties ranged from seasonal and permanent cottage use to permanent residential, roads, and agricultural lands. Since its construction, the project has withstood several significant rainfall events, including one that surpassed a 1:100 year event, ensuring everyone's safety and demonstrating its effectiveness.



ADDITIONAL PROJECT EXPERIENCE

Completed Drainage Reports Prepared for Petition Drains (Section 4)

Year	Municipality	Drain Name
2024	Norfolk County	Mills-South Norwich Municipal Drain
2024	Municipality of Morris-Turnberry	Grant Municipal Drain
2023	Township of Norwich	Branch 'B' & 'C' of the Springford Municipal Drain
2023	Township of South-West Oxford	Greenworld Municipal Drain
2023	Township of Norwich	Bishop Municipal Drain
2023	Municipality of Central Huron	Gross Municipal Drain
2023	Township of Wilmot	Bamberg Creek, Jananna and Koch-Leis Municipal Drains
2022	Norfolk County	Regional Road 21 Municipal Drain
2022	Township of Wilmot	Queen Street Municipal Drain
2022	Municipality of Bluewater	Centennial Municipal Drain
2022	Municipality of Bluewater	Love Municipal Drain
2021	Township of Huron-Kinloss	Bruce Beach Municipal Drain - Phase 1
2020	Municipality of Brockton	Koelen Municipal Drain
2020	Municipality of Thames Centre	Ankor & Helder Municipal Drains
2019	Municipality of Brockton	Van Nes Municipal Drain
2019	Township of Howick	Berlett-Gibson Municipal Drain
2019	Town of Minto	Municipal Drains No. 20 & 117
2018	Municipality of Bluewater	Troyer-Jacobs Municipal Drain
2018	Township of Huron-Kinloss	Martin Municipal Drain
2018	Township of Huron-Kinloss	MacIntyre Municipal Drain
2018	Township of Perth East	Zehr Municipal Drain
2018	Township of Perth East	Claassen Municipal Drain
2017	Township of Perth East	Branch 'E' of the McNamara Municipal Drain
2017	Township of Wilmot	Cressman & Don Myers Municipal Drains
2016	Township of Huron-Kinloss	Royal Oak Municipal Drain*
2016	Township of Wilmot	Lichti Municipal Drain
2016	Township of Norwich	Griswold & Losee-Veld Municipal Drains*
2016	Township of Norwich	Easton-Foster Municipal Drain*
2015	Township of Wilmot	Trussler Road Municipal Drain*
2014	Township of Ashfield-Colborne-Wawanosh	Curran Municipal Drain*
2014	Municipality of Thames Centre	Bailey Municipal Drain*
2014	Township of Norwich	Swance, Kellett & W.E. Russell Municipal Drains*

* Denotes report prepared but not sealed by Stephen Brickman.



Completed Drainage Reports Prepared for Improvement Drains (Section 78)

Year	Municipality	Drain Name
2024	Municipality of Morris-Turnberry	McArthur Municipal Drain
2023	Municipality of Huron East	Clark & McTaggart Municipal Drains
2023	Township of Howick	Municipal Drain No. 10
2023	Township of Huron-Kinloss	Van Diepenbeek Municipal Drain
2023	Municipality of Central Huron	Gross Municipal Drain **
2023	Municipality of Central Huron	Harding Municipal Drain
2023	Municipality of Morris-Turnberry	Schwartzentruber Municipal Drain
2022	Municipality of Bluewater	Love Municipal Drain **
2022	Township of Perth South	Van Ness Municipal Drain
2021	Township of Norwich	Petersen Municipal Drain
2021	Township of Huron-Kinloss	Sutton Municipal Drain
2021	Norfolk County	Fourth Concession Municipal Drain
2020	Township of Wainfleet	Indian Creek Municipal Drain
2020	Township of Huron-Kinloss	Emerson Municipal Drain
2020	Town of Minto and Municipality of West Grey	Shannon Municipal Drain & Municipal Drains No. 30 & 52
2020	Township of Ashfield-Colborne-Wawanosh	Warren Zinn Municipal Drain
2020	Municipality of Thames Centre	Ankor & Helder Municipal Drains**
2020	Municipality of Thames Centre	Switzer Municipal Drain
2020 (and 2018)	Municipality of South Bruce	Filsinger Municipal Drain
2019	Township of Perth East	Thiel Municipal Drain
2019	Township of Perth East	Cossey Municipal Drain
2019	Township of Huron-Kinloss	MacIntyre Municipal Drain
2019	Township of Perth East	Signer & Bakery Municipal Drain
2019	Town of Minto	Municipal Drain No. 23
2019	Township of Howick	Berlett-Gibson Municipal Drain**
2019	Township of Ashfield-Colborne-Wawanosh	Wilkins Municipal Drain
2018	Township of Perth East	Harbey-Nauta Municipal Drain
2018	Township of Perth South	Armstrong Municipal Drain
2018	Township of Huron-Kinloss	McDougall Municipal Drain
2017	Township of Wilmot	Cressman & Don Myers Municipal Drains**
2017	Township of Perth East	Shakespeare Municipal Drain
2017	Municipality of Bluewater	Brenner Municipal Drain
2017	Township of Ashfield-Colborne-Wawanosh	Van Beets Municipal Drain
2017	Norfolk County	Fourth Concession Municipal Drain
2016	Township of Ashfield-Colborne-Wawanosh	Fitzgerald Municipal Drain*
2016	Township of Perth East	Ryter-Pugh Municipal Drain*
2016	Township of Norwich	Easton-Foster Drain**
2016	Township of Perth East	Bauman Municipal Drain*
2016	Township of Perth East	South Branch of the Rose Municipal Drain*
2015	Norfolk County	Boc Municipal Drain*
2014	Municipality of Thames Centre	Bailey Municipal Drain**
2014	Township of Norwich	Swance, Kellett & W.E. Russell Municipal Drains**
2014	Municipality of South Huron	Simmons Municipal Drain*
2014	Township of Perth East	Stock Municipal Drain*

* Denotes report prepared but not sealed by Stephen Brickman.

** Denotes report authorized under Section 4, as well as Section 78.



Completed Drainage Reports Prepared under Other Sections of the Drainage Act

Year	Municipality	Drain Name	Drainage Act Section
2023	Township of Woolwich	Municipal Drain No. 11	Section 76
2021	Township of Ashfield-Colborne-Wawanosh	Gully Project	Section 4 & Section 40
2020	Township of Ashfield-Colborne-Wawanosh	Amberley Beach Road	Section 4 & Section 40
2019	Township of Ashfield-Colborne-Wawanosh	Branch 'A' of the Huron Sands Municipal Drain	Section 76
2017	Township of Wilmot	Cressman & Don Myers Municipal Drains	Section 4, 78, and 40
2017	Norfolk County	Cooper Municipal Drain	Section 76
2015	Municipality of Bluewater	East and West Branches of the Black Creek Drain*	Section 76
2015	Township of Perth East	Avon Municipal Drain*	Section 76

* Denotes reports prepared but not sealed by Stephen Brickman.

Expert Witness Experience

Year	Municipality	Drain Name	Appeal Body
2022	Township of Huron-Kinloss	Bruce Beach Municipal Drain - Phase 1	Tribunal
2021	Township of South Bruce	Filsinger Municipal Drain	Referee
2020	Township of South Bruce	Filsinger Municipal Drain	Tribunal
2016	Township of Huron-Kinloss	Royal Oak Municipal Drain	Tribunal
2008	Norfolk County	Gamble Municipal Drain Note: Witness (not Expert Witness)	Tribunal

