



Paul D. Holmes

Mr. Holmes is a Project Manager/Water Resources Engineer with over 17 years extensive experience in the fields of water resources engineering, environmental planning and resource protection. He has completed a number of water management, subwatershed, master drainage and storm water management plans, as well as, flood plain mapping, urban drainage and sewer infrastructure assessment studies throughout Ontario. Mr. Holmes has direct experience in the assessment of surface water related impacts gained from his involvement with environmental assessments of dams, landfills, highways and municipal infrastructure projects.

Education

- University of Guelph, Ontario
- Honours B.Sc. (Eng.), 1985
 - Selected Post-Graduated Courses, 1986

Professional Associations

Professional Engineers of Ontario—Member
Canadian Water Resources Association
Ontario Association for Impact Assessment

Experience

Project Manager, Environmental Assessment Division Acres International—2003 to Present

1999–2003

Project Manager, Environmental Assessment Acres & Associated Environmental Limited, Toronto, Ontario

Environmental Assessment and Impact Studies

Project Manager/Coordinator for Environmental Assessment (EA), Class Environmental Assessment (Class EA) and Environmental Impact Studies (EIS), including

- Peace Bridge capacity expansion EA, Buffalo and Fort Erie
- Pickering Lands runway screening study for Greater Toronto Airports Authority (GTAA)
- Knoepfli Dam Class EA for SC Region Ministry of Natural Resources (MNR)
- St. Ola Lake Dam Class EA for SC Region MNR
- Distress and Finlayson dams Class EAs for SC Region MNR
- Montieth, Larder Lake and Raven dams Class EAs for NE Region MNR
- peer review of Osler Bluff Ski Club and Osler Brook Golf Club water balance assessment for Town of Blue Mountains
- Kettle Creek sediment contamination investigation for Kettle Creek Conservation Authority, Port Stanley
- Enterprise Industrial Subdivision EIS for City of Welland
- Etobicoke Creek sanitary trunk sewer twinning Class EA, Regional Municipality of Peel
- South System water supply reservoir Class EA for City of Thunder Bay
- hydrology peer reviewer, Pickering A nuclear power generating station - return to service environmental screening for Town of Ajax
- boat slip sedimentation and dredging study for the City of Burlington
- sewage treatment lagoons Class EA for the Village of Zurich.

Water Management Plans

Project Manager/Coordinator for complex water management plans that examined the operational effects of flows and water levels on the environment and the development of a preferred operational strategy for the management of the water control structures and waterpower facilities on the river system. Typically, the studies involved public, agency and First Nations consultation, river system computer modeling of dams and reservoirs, and the participation of biologists, engineers and environmental scientists.

- Abitibi River water management plan: 22 000 km², seven water control structures and six hydropower facilities for Abitibi Consolidated Company of Canada in association with Algonquin Power, Ontario Power Generation and MNR
- Magnetawan River water management plan: 2850 km², 17 water control structures for Parry Sound District MNR.

Storm Water Management Plans

Project Manager/Engineer for storm water management (SWM) plans, including computer modeling, hydraulic design of SWM facilities and drainage systems, and procurement of regulatory approvals

- Harry Diffin Industrial Park: 26 ha, eight lot industrial, Welland, Ontario
- East Humber River digital flood line mapping updates: 50 km, 50 bridges and culverts for Toronto Region Conservation Authority
- Enterprise Industrial Subdivision: 19.3 ha, eight lot industrial, Welland, Ontario
- Fort Erie Truck and Travel Plaza: 9.3 ha, highway commercial, Fort Erie, Ontario
- Calaguiro Estates Subdivision: 24 ha, 86 lot residential, Niagara Falls, Ontario
- Bedard Subdivision: 14.2 ha, 11 lot estate residential, Welland, Ontario
- Willow Landing Subdivision: 3.7 ha, 16 lot residential, Welland, Ontario
- Sunshine Estates: 2.7 ha, 29 lot residential, Town of Pelham, Ontario
- John Deere Welland Works Industrial Plant, 18.2 ha, Welland, Ontario
- City of Kenora storm water management policy guidelines
- Quarry Road landfill drainage improvement works, Municipality of Niagara
- River Road landfill drainage improvements for Atlas Specialty Steels.

1986–1999

Project Manager/Project Engineer

Dillon Consulting Limited, Toronto, Ontario

Watershed, Subwatershed and Master Drainage Studies

Project Manager/Coordinator of ecosystem-based, land use planning studies that examined the environmental effects of storm water runoff from land development, natural heritage protection and policy development, including

- Shirley's Brook & Watts Creek subwatershed: 41 km², Kanata, Ontario
- Pringle Creek master drainage plan: 25 km², Whitby, Ontario
- Mill Creek south block area subwatershed: 35 km², St. Thomas, Ontario
- Kettle Creek tributary development area: 5 km², Belmont, Ontario
- Lynhurst area subwatershed: 18 km², St. Thomas, Ontario

- Spring Valley/Shaver neighborhoods subwatershed, Ancaster
- Block 1 subwatershed master drainage plan, St. Thomas, Ontario
- Georgian Drive planning area master drainage plan, Barrie, Ontario.

Storm Water Management Plans

Project Engineer for storm water management (SWM) plans, including computer modeling, hydraulic design of SWM facilities and drainage systems, and procurement of regulatory approvals

- Edgewood Subdivision: 19.3 ha, 170 lot residential, Mount Brydges
- Magna automotive parts plant: 5 ha, two lot industrial, St. Thomas, Ontario
- Ontario Realty Corporation site: 2.5 ha, 49 lot residential, City of Vaughan, Ontario
- Lapad Incorporated: 9.5 ha, 93 lot residential, Oakville, Ontario
- Block 3 Lands: 50 ha residential, St. Thomas, Ontario
- Dalewood Subdivision: 77 ha residential subdivision, St. Thomas, Ontario
- Sydenham Estates: 10.6 ha, 28 lot residential, Middlesex County
- Humberview Hills Subdivision: 40 ha, 200 lot residential, Town of Caledon
- Mannheim Water Treatment Plant storm water drainage plan, Waterloo, Ontario
- IBM Administration Building, 3600 Steeles Avenue, North York, Ontario
- Stan Vine Subdivision: 22 ha, 125 lot residential/commercial, Oakville, Ontario.

Flood and Fill Line Mapping Studies

Project Engineer including hydrologic and hydraulic computer modeling and the preparation of flood and fill line maps for

- Lyon's Creek tributary flood plain mapping: 1.5 km, three culverts, Welland, Ontario
- Pringle Creek flood plain mapping: 19 km, 25 bridges/culverts, Whitby, Ontario
- Mill Creek flood plain mapping: 16.8 km, 17 bridges/culverts, St. Thomas, Ontario
- Assisted with the update of the MNR's "Flood Plain Management in Ontario Technical Guidelines"
- Kettle Creek Tributary 2 flood plain mapping: 5 km, three culverts, St. Thomas, Ontario
- Rideau River flood plain mapping: 30 km, 18 bridges/dams, Ottawa, Ontario
- Stokeley Creek flood plain mapping, Sault Ste. Marie, Ontario
- Lake Ontario/Bay of Quinte shoreline mapping, Sophiasburg, Ontario
- Sixteen Mile Creek flood damage reduction study, Milton, Ontario
- Hamilton Beach harbor flood damage reduction study, Hamilton, Ontario
- Appleby Creek channelization study, Burlington, Ontario
- Mattagami River flood plain mapping update: 22 km, Timmins, Ontario.

Bridge and Culvert Hydraulic Design Assessments

Project Engineer for the hydraulic design assessment of bridges, culverts, open channels and storm sewers

- Wellington Street Bridge, proposed pedestrian walkway: 67-m twin span crossing Thames River, London, Ontario

- Courtneypark Drive bridge extension into Pearson Airport: 3-span 107-m crossing Etobicoke Creek, Mississauga, Ontario
- Springbank Park Bridge: 90-m span crossing the Thames River, London, Ontario
- Municipal Drain relocation 1100-m long trapezoidal channel, St. Thomas, Ontario
- Hamilton Road Bridge erosion control works Pottersburg Creek, London, Ontario
- Highway 401/CPR bridges crossing Carruthers Creek, Pickering, Ontario
- Highway 403/6N Interchange: Twin 74 m long 1800-mm dia concrete culverts and two 2-m x 4-m concrete box culverts (74 m and 135 m), MTO
- Wonderland Road Bridge: 18.3 m span crossing Dingman Creek, London, Ontario
- Kenogamisis/Kenogami bridges hydraulic review for MTO, Thunder Bay, Ontario
- Shoal Lake Aqueduct hydraulic assessment, Winnipeg
- Eastgate Parkway extension: hydraulic design of 1800 to 3000-mm dia storm sewer trunk, 1800 m in length, Mississauga, Ontario.

Sewer Infrastructure Assessment Studies

Project Engineer for sewer infrastructure assessment studies, including the installation of sewer flow monitoring equipment, CCTV inspections, computer modeling analyses and preparation of remedial action plans

Pottersburg Area sanitary sewerage system improvement study, London, Ontario

- Molson's Breweries flow monitoring study, Toronto, Ontario
- Streetsville area storm sewer drainage study, Mississauga, Ontario
- Riverside area Phase III rehabilitation needs study, Windsor, Ontario
- Riverside area Phase IV rehabilitation needs study, Windsor, Ontario
- Leslie-Finch development sanitary sewer capacity analysis, Toronto
- Danesbury area sanitary sewer needs study, North York, Ontario
- Storm sewer system modeling and analyses, City of Regina
- Hamilton Airport storm drainage system improvements, Transport Canada
- Windsor Airport storm drainage system improvements, Transport Canada.

Environmental and Transportation Studies

Project Engineer for the surface water impact assessment component of several environmental, road and highway studies, including field surveys, hydrologic and hydraulic computer modeling and hydraulic design of bridges, culverts and SWM facilities

- Courtneypark Drive extension to Pearson Airport Class EA, Mississauga, Ontario
- Trafalgar Road widening Class EA for Region of Halton
- Municipal drain relocation Class EA for City of St. Thomas, Ontario
- Mississauga Road/QEW Interchange reconstruction Class EA for MTO
- Grenadier Pond sedimentation control study Class EA for City of Toronto
- Highway 403/Highway 6N Interchange Class EA for MTO
- Eglinton West rapid transit line EA Study for City of Toronto

- Port Area Business Park EIS for Toronto Harbour Commissioners
- Esso-Shell petrochemical complex surface water impact study, Sarnia, Ontario.

Waste Management Studies

Project Engineer for the surface water impact assessment component of several waste management studies for existing and proposed landfill sites, including streamflow data collection, hydrologic and hydraulic computer modeling and hydraulic design of SWM facilities

- BFI Ridge landfill expansion for Browning-Ferris Industries, Chatham, Ontario
- screening evaluation of candidate landfill sites, Town of Hawkesbury, Leeds and Grenville Counties
- Durham Region Candidate landfill siting EA for Interim Waste Authority
- Sarnia landfill expansion, Lambton County
- P1 landfill site surface water impact assessment, Durham Region
- Essex County landfill expansion drainage analysis, Sarnia, Ontario
- developed surface water standards for MOEE's, "Standards for New and Expanded Landfilling Sites - Nonhazardous Waste".

Hydrologic/Hydraulic Computer Modeling

Utilization of the following state-of-the-art hydrologic and hydraulic computer modeling programs to analyze a variety of engineering problems

- FLDAM—flood damage cost estimates for different building types
- HEC-2/HEC-RAS—1D water surface profiles in watercourses
- INTERHYMO—rainfall-runoff from rural and urban drainage basins
- SWMHYMO—rainfall-runoff from rural and urban drainage basins
- OTTSWMM—major/minor drainage systems in urban catchments
- QUALHYMO—rainfall/snowmelt-runoff from rural and urbanized basins
- SSARR—rainfall/snowmelt-runoff process in rural watersheds
- XPSWMM—rainfall/snowmelt-runoff and dynamic sewer flow routing.

1986

Project Engineer, Municipal Infrastructure

Frances-Nicholas Limited, Kitchener, Ontario

Project Engineer for the preparation of storm water management (SWM) plans for over 10 residential subdivisions, including computer modeling, hydraulic design of SWM facilities and drainage systems, and procurement of regulatory approvals. Projects were located in Kitchener, Waterloo and Cambridge.

1985–1986

Project Engineer, Water Management

Grand River Conservation Authority, Cambridge, Ontario

Project Engineer for the review permit applications pursuant to GRCA's *"Fill Construction and Alteration to Waterways Regulations"*. Conducted field surveys and developed hydrologic and hydraulic computer model to assess changes to river flows and levels. Participated with several in-house flood damage reduction studies and flood line mapping projects.

Technical Publications

The Process of Decommissioning Dams in Ontario
Proceedings of the Canadian Dam Association 2002 Conference, Victoria,
British Columbia, October 2002. (Coauthor)