



corporate profile

R.V. Anderson Associates Limited



our company

R.V. Anderson Associates Limited (RVA) has been engaged in the provision of professional engineering, operations, and management services since 1948. The organization is comprised of environmental and infrastructure specialists for water, wastewater, transportation, and urban development.

The company is wholly owned by its principals and associates, providing services to the public and private sectors in Canada and internationally.

The firm's operating philosophy is based on a "culture of ownership"—ownership of projects, ownership of quality delivery, and ownership of the company. This culture of ownership commits the firm's employees to executing a corporate strategy that achieves a vision of service excellence, good workplace, continuing growth and development, and financial stability.

our business

water supply, wastewater, municipal infrastructure, transportation, structures and tunnels, urban development, architecture and building services, environmental management, electrical, SCADA, and telecommunications

integrated services

planning + management

sustainable planning, master plans, environment planning and assessment, infrastructure asset management, alternative project delivery, strategies and policies, competitiveness and best practices, audits and investigations

design + construction

project management, sustainable design, design and specifications, approvals and permits, tendering and procurement, contract administration, construction inspection

operations + optimization

commissioning and training, manuals and guidelines, plant operations and troubleshooting, contracting out, operational audits

www.rvanderson.com

principals

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K.W. Campbell, P.Eng., Vice President
V.L. Nazareth, P.Eng., Vice President
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ENVIRONMENTAL MANAGEMENT



capabilities + projects

risk and criticality assessments

Newcastle Risk and Criticality Assessment: Risk and criticality assessment of Newcastle's wastewater collection and treatment system, including 33 km of sanitary sewers, three sewage pumping stations, and the Newcastle water pollution control plant, for Durham Region.

Winnipeg Risk and Criticality Assessment: Risk and criticality assessment of three water pollution control plants, assessing the risks to core values from potential failures associated with the critical assets.

environmental compliance

Environmental Policy and Procedures Manual: Procedures and guidelines for sewer discharges, waste management, hazardous materials, spill control, and records for a Toronto-based refined petroleum products manufacturer.

database systems

NPRI and O. Reg. 127 Reporting: Preparation of federal and provincial reporting documents describing emissions from a rubber manufacturing facility, through the use of a database information management system.

approvals + permits

Certificate of Approval Applications: Technical services, document preparation, and regulatory agency liaison for C of A submission process changes and additions for a Welland area heavy equipment manufacturer.

Negotiation of Sewer Discharge Agreements: Wastewater sampling, analysis and reporting, and assistance with negotiation of municipal sewer discharge agreements for automotive parts manufacturing facilities.

employee training

Environmental Management: Environmental legislation awareness training for key operating staff at a heavy equipment manufacturing facility in Southern Ontario.

site remediation

Manufacturing Site Remediation: Investigation and management of the decommissioning and remediation of a former can-making facility contaminated with lead for Ball Packaging Products Canada Inc.

Toronto Stockyards Land Development Board Site Remediation: Environmental site assessments and remediation of a former public stockyards property in advance of commercial redevelopment.

ELECTRICAL, SCADA + TELECOMMUNICATIONS



capabilities + projects

electrical power transmission + distribution

Garth and Stone Church Pumping Station: New electric motors on four pumps, new outdoor 13.8 kV switchgear and indoor 4 kV switchgear, new mezzanine to house the new variable-frequency drive, new PLC and control system, and new 1500 kW diesel generator.

Sudbury Lift Station: Two new 3000 KVA, 4160/600 V medium voltage dry type transformers; two 525 HP dry pit type submersible raw sewage pumps; 3000 A MCC lineup including 525 HP VFD drives with line / load side filters; 3000 A 600 V cable bus system; and underground feeder services and cable tray systems.

SCADA

Niagara Falls Water Treatment Plant Upgrade: Replacement of 2400 V switchgear, associated control wiring, upgrade of SCADA system and a standby power system with a 1500 kW generator.

Georgetown Water Pollution Control Plant: Digester upgrades, including a new SCADA system to control a new secondary digester and gas waste burner system.

automation

Ilderton Water Pumping Station: Upgrade to automate the chemical system, water quality analysis system, and SCADA system design for the pumping station to obtain MOE approval.

Holmedale Water Treatment Plant: Upgrade to automate operations of a residue management and sludge disposal system and upgrade of a standby power supply system in the City of Brantford.

condition assessment

•McGillivray Booster Pumping Station: Condition assessment of the electrical equipment, including retrieval of equipment's name plate information; assessment of equipment service life, compliance with regulations, and ability to meet capacity requirements; and assessment of risk of failure.

energy audit

Sudbury Wastewater Treatment Plant: Energy audit and protection coordination study and design of a 2 MW emergency power generator for a raw sewage pumping station.

telecommunications

Fibre-Optic Transmission System: Engineering and construction review of a 17 000 km cable route system and telecommunication shelters for Leduc Industries and 360 networks across Canada and the northern USA.

URBAN DEVELOPMENT

ARCHITECTURE + BUILDING SERVICES



capabilities + projects

brownfield redevelopment

West Don Lands Redevelopment: Planning, design, and implementation of municipal services (water mains, sanitary sewers, and storm sewers), roads, streetlighting and signalized intersections, and coordination of telecom facilities, utilities, and District Energy for a major brownfield redevelopment in Toronto.

stormwater management

West Don Lands Stormwater Quality Facility and Outfall: New stormwater treatment facility with UV disinfection and ballasted flocculation to meet City of Toronto's Wet Weather Flow Guidelines, and new tunnel conveyance system outletting into Keating Channel.

residential development

Trafalgar Phase 2: 480-lot subdivision, including stormwater ponds, watercourse relocation and box culvert for a fishery, railway bridge, railway pedestrian underpass, pumping station, and reconstruction of an arterial road in Halton Hills.

Moonglo Subdivision: Since the 1970s, provided engineering services for the development of a 400-lot subdivision in Sudbury.

institutional development

York University: Since 1962, provided engineering services for master servicing, stormwater management plans, and site development projects for the 162 ha. main campus in the City of Toronto.

Bridgepoint Health Centre: Compliance reviews for the civil site works proposed by the design-build-finance consortium for the new \$655 million hospital redevelopment.

estate lots

Cachet Developments: 115-lot estate development on the Oak Ridges Moraine, with services for stormwater quantity and quality and floodplain mapping, in the Town of Richmond Hill.

recreational

BMO Field: Site services, grading and stormwater management for the 12,000 seat soccer stadium located at Exhibition Place.

Hershey Centre Expansion: Site services, grading and stormwater management for the Hershey Centre expansion in the City of Mississauga.

site development

Fly Residential High-Rise Development: Feasibility study, site services, grading, and stormwater management, and the design and construction of an external trunk sewer by high-rise residential redevelopment located at 352 Front Street West in the City of Toronto.

capabilities + projects

transit

Oakville GO Station Parking Garage: New design-build parking garage, including a unique landscape and architectural design to meet Town of Oakville site plan requirements.

commercial

Glen Ashton Plaza: Architectural and engineering services for planning, design, and construction review of a 1200 m² neighbourhood plaza and daycare centre in Oakville.

environmental

Woodward Avenue Water Treatment Plant: Complete structural and architectural rehabilitation of the 909 ML/d Woodward Avenue Water Treatment Plant for the City of Hamilton. Won the Environmental Project of the Year Award from Ontario Public Works Association.

Neyagawa Zone 4 Booster Pumping Station: New booster pumping station specifically designed to blend into the local residential neighbourhood through a distinctly residential-inspired architectural treatment, for Halton Region.

industrial

Deluxe Laboratories: Multidisciplinary architectural and engineering services for design and construction review of a 9000 m² film production plant, including film screening rooms, client reception area, and administrative offices, in the City of Toronto.

amusement parks

Canada's Wonderland: Architectural and engineering services for amusement ride structures, including roller coasters, water park slide rides, and a music performance facility and associated support buildings, in the City of Vaughan.

residential

Kingsmill on the Credit: Architectural and engineering services, including integrated neighbourhood planning and approvals for 350 stacked row houses, in the Town of Halton Hills.

mechanical

Energy-Efficient Building: Design of an energy-efficient heating and cooling system for the Sudbury Wastewater Treatment Plant's chlorine storage and handling facility, by using the plant effluent water as a heating and cooling source.

WATER SUPPLY



capabilities + projects

water master plans

25-Year Plan: Creation of a master plan for water supply, treatment, storage, and distribution improvements for the City of Moncton.

hydrology

Tower Road Dam: New dam, spillway, and intake tunnel for new municipal headpond reservoir, including a new earthwork dam 20 m tall that extends 1.2 km along the roadway to allow for storage of 16 500 ML of water, for the City of Moncton.

surface water treatment

Niagara Falls Water Treatment Plant: Major upgrades to a 145 ML/d plant, including UV disinfection, 14 ML reservoir, 1.5 MW generator, 2300 V switchgear replacement, and new administration wing to harmonize with the building's 1930s architecture.

groundwater treatment

Walkerton Interim Water Treatment Plant: Membrane filtration plant, commissioned seven weeks after design began, in response to a "boil water" advisory, followed by a Class EA for the Ontario town's long-term treatment needs.

water intakes

Burloak Water Intake and Marine Pipeline: Design consultant for design-build of a 240 ML/d water intake with a lakebed pipeline and tunnel for Halton Region. Won an Ontario Public Works Association Project of the Year Award.

optimization

Ontario Water Treatment Plants' Optimization: Prime consultant for optimization studies at 40 medium and large water treatment plants.

water storage

Ottawa Zone 2C Elevated Tank: Class EA and engineering for design and construction of a new 9 ML composite steel and concrete tank.

pumping stations

John Street Pumping Station: Relocation of the 990 ML/d station, including eight 1500 horsepower pumps and one 700 horsepower pump. Won a Canadian Consulting Engineering Award of Merit.

residue management

Holmedale Water Treatment Plant: Residue management facility, including a backwash equalization tank, 0.65 ML sludge storage tank, gravity thickeners, belt filter presses, and cake loading conveyor system, for a 100 ML/d plant for the City of Brantford.

operations and training

Township of Pickle Lake, Ontario: Provision of a senior operator to assume operation responsibility for water and wastewater facilities, with certification training for the municipality's operations staff.

WASTEWATER

capabilities + projects

wastewater master plans

25-Year Plan: Expansion of wastewater collection, treatment, and effluent disposal infrastructure for the Municipal Corporation of Greater Mumbai, India, serving a population of 16.5 million, in association with Mott MacDonald.

environmental assessments

Sudbury Biosolids Management Master Plan Class EA: Class EA for the management of solids produced by the Sudbury Wastewater Treatment Plant and eleven other treatment plants.

municipal wastewater treatment

Mumbai Stage II Priority Sewage Disposal Works: \$1 billion worth of priority upgrades to Mumbai's wastewater treatment and collection system, including upgrades to 7 wastewater treatment plants and 17 sewage pumping stations, new and rehabilitated sewers, new sewage tunnels, and a new ocean outfall, with Mott MacDonald.

Corbett Creek Wastewater Treatment Plant: Capacity increase to 84 ML/d, including significant aeration upgrades to achieve nitrification.

CSO control and treatment

Welland CSO Study: Class EA, flow monitoring, field surveys, and modelling of combined sewers, regulators, and pumping stations.

wastewater pumping + transmission

Moncton Main Sewage Pumping Station: Design of a 267 ML/d station with dual-level wet well, SCADA system, and standby power. Won a Canada Award for Excellence in Environmental Engineering.

biosolids management

Biosolids Beneficial Use Program: Management of three projects valued at \$90 million using a design-build procurement approach at Toronto's 818 ML/d Ashbridges Bay treatment plant.

outfalls

Courtice Water Pollution Control Plant: Design, approvals, and construction of a 408 ML/d outfall. Project won an Ontario Public Works Association Project of the Year Award.

optimization

Simcoe Wastewater Treatment Plant: Stress testing and dynamic modelling for Norfolk County to show that a 20% capacity increase could be completed without capital upgrades.

training

Robert O. Pickard Environmental Centre: Two-year training program for operation certification in conjunction with an upgrade to secondary treatment and expansion to 545 ML/d for Ottawa-Carleton Region.

MUNICIPAL INFRASTRUCTURE ENGINEERING

MUNICIPAL INFRASTRUCTURE MANAGEMENT



capabilities + projects

environmental assessments

Interconnecting Water Mains: Class EA for route of two trunk water mains to connect Burlington and Oakville, including crossings of Bronte Creek, CN Railway, QEW, and major pipelines.

sanitary sewers

Etobicoke Creek Trunk Sewer: Class EA, design, and construction services for the replacement of a 500 m section of 2100 mm dia. sewer, including odour control measures, for Peel Region.

Western Sanitary Sewer Interceptor: Condition assessment, design, and construction services for rehabilitation of a 1525 mm dia. sewer interceptor. Won an OACETT Technical Achievement Award.

water mains

Stand Alone Water Main Replacement Program: Program management, design, and construction services for \$130 million worth of water main replacement for the City of Toronto.

Zone 3 Water Main: Class EA, design and construction services for a new 900 mm diameter trunk water main, including an unique crossing of the Bronte Creek Valley using a retrofitted utility bridge.

Cyrville Road Water Main Rehabilitation: Design and inspection of a water main rehabilitation project using 200 mm dia. HDPE pipe (slip lining) for the City of Ottawa.

combined sewer overflow

Main/King CSO Tank: Design and inspection of a 75 ML tank for Hamilton-Wentworth Region. Won a Canadian Consulting Engineer Award of Merit.

stormwater management

Garrison Creek Stormwater: Review of the feasibility and public acceptance of source control measures in a mature neighbourhood.

directional drilling

Rideau Canal Crossing: New 406 mm diameter, 100 m HDPE pipe installed under Rideau Canal. Named *Trenchless Technology* magazine's Trenchless Project of the Year.

infrastructure renewal

Etobicoke-York Capital Transportation and Water Projects: Over 38 separate infrastructure renewal projects, including 4 km of water mains, 7 km of sanitary sewers, and 6 km of storm sewers, as well as the reconstruction of 10 km of local roads.

flood + erosion control

Western Creek Flood Mitigation: 520 m of 1950 mm diameter storm sewer, 200 m of channel naturalization, and modifications to two stormwater management ponds for the Town of Newmarket.

capabilities + projects

asset management

State of the Infrastructure Report: High-level strategic analysis of current practices and recommendations for advancing the City of Hamilton's asset management processes.

asset condition audits

Pumping Station Condition Assessments: Condition assessments for 59 wastewater pumping stations for Halton Region. Information gathered was used to develop a Master Plan rationalizing each station's existence in the overall strategic framework.

design-build owner's agent

Mumbai, India, Wastewater Treatment Plant Upgrades: Management of design-build processes for capacity increases and treatment upgrades of eight wastewater treatment plants, ranging in size from 32 ML/d to 849 ML/d, with Mott MacDonald.

organizational reviews

Halton Environmental Services Organizational Review: Competitive assessment, process and metric benchmarking, organization structure, customer service delivery, optimization initiatives, preventive maintenance, skill-based training, and automation.

competitive assessments

Niagara Region Water and Wastewater Competition Strategy and Competitive Assessment: Assessment of existing outsourcing practices, process benchmarking for best practices, metric benchmarking, and an organizational review.

operations audits

Halifax Regional Water Commission Operations Audit: Review of plants, distribution and support functions, and financial rates for a long-term program of operational improvements.

managed competition

Peel Region Public Works Operations Managed Competition System: Development of a competition strategy and a system for competition between municipal employees and private contractors for the delivery of public works services.

contracting out

Wastewater Biosolids Contract Operations: Preparation of proposal documents and evaluation of proposals for a five-year, \$60-million operation and maintenance contract for the biosolids facilities at the Robert O. Pickard Environmental Centre.

public-private partnerships

Halifax Wastewater System Development: Initial feasibility assessment and subsequent provision of technical services for RFQ and RFP process to develop the Halifax Harbour Solutions as a public-private partnership for Halifax Region.

TRANSPORTATION



capabilities + projects

highways

Highway 69 Reconstruction: Expansion to a four-lane expressway, including two interchanges and three major bridges over watercourses, in Northern Ontario for the Ministry of Transportation.

urban roads

Appleby Line/Dundas Street: Design and construction services for the widening to six lanes, including dual left-turn lanes, creek relocation, bike lanes, pedestrian bridge, and enhanced landscaping design, for Halton Region.

St. John's Sideroad: Design of reconstruction and widening of a 2 km urban roadway from Yonge Street to Bayview Avenue through the environmentally sensitive McKenzie Marsh area for York Region in the Town of Aurora. Won an Ontario Public Works Association Project of the Year Award.

bridges

Victoria Road and Eramosa River Bridge: New three-span, four-lane bridge with bike lanes, constructed in stages to maintain traffic, for the City of Guelph. Won an Ontario Public Works Association Project of the Year Award.

bridge rehabilitation

Paris Street Bridge: Rehabilitation of a 235 m four-lane twin box bridge, including complete curb removal, joint replacement, and deck repairs, for the City of Greater Sudbury.

transit

Denison Road Rail Grade Separation: Detailed design for a railway grade separation to support 7 rail tracks (including 3 CPR tracks and 4 Metrolinx tracks) for Metrolinx/GO Transit.

Appleby GO Station: Accessibility upgrades, including a new pedestrian tunnel installed under an active railway, stairs and elevators, as well as new platform extensions and electrical and mechanical upgrades. Won the 2011 Project of the Year Award from Ontario Public Works Association.

traffic study

Rossland Road: Traffic study for potential roundabout constructed along an urban roadway in Town of Ajax.

bike + pedestrian trails

Martin Goodman Trail: Civil design, contract administration, and inspection for 1.2 km of multiuse trail adjacent to Ontario Place in Toronto, including extensive coordination with public-realm consultants, for Waterfront Toronto.

STRUCTURES + TUNNELS



capabilities + projects

retaining wall structures

St. John's Sideroad: Sheet-pile retaining wall to support the road platform within the McKenzie Marsh wetland area for York Region in the Town of Aurora.

shafts

Centennial Parkway Trunk Sewer Tunnel: Design and construction services for a new 75 m drop shaft with vortex flow chambers and de-aeration chambers, connecting a 5.3 km long and 2.1 km long tunnel through the Niagara Escarpment, for the City of Hamilton.

tunnel linings

St. Clair River Railway Tunnel: Precast concrete segment manufacturing quality assurance program for the St. Clair River railway tunnel, including reinforcing steel, epoxy coating, and segment casting in Sarnia and Woodstock, Ontario, for the St. Clair Tunnel Construction Company, a subsidiary of CN North America.

tunnels

Sudbury South End Sewage Rock Tunnel: Class EA, design, and construction services for a new 6.5 km sewage rock tunnel system blasted through bedrock 25 m beneath the surface. Won American Public Works Association and Ontario Public Works Association Project of the Year Awards.

Clarkson Outfall Tunnel: Design and construction services for a new 3 m dia. effluent outfall, tunnelled 2.2 km under Lake Ontario, for Peel Region.

value engineering

West Trunk Sewer: Value engineering sessions for the new West Trunk Sewer tunnel, for Peel Region.

tunnel route studies

Feasibility Study: Twinning of the Humber sanitary trunk sewer route study for future extension to the proposed Keele trunk relief sewer to the Humber water pollution control plant in the City of Toronto.

drop caissons

Raw Water Pump House: A 4.88 m by 20.4 m deep precast reinforced concrete, bolted caisson dropped through permafrost, gravel, and till formations on the north bank of the Mackenzie River in Fort Simpson, Northwest Territories.

foundations

Canada's Wonderland "Drop Zone": Gravity base tower foundation for a vertical steel tower offering passengers the experience of a real (69 m) free fall in the City of Vaughan.

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