

# SUSTAINABLE ASSET MANAGEMENT



R.V. Anderson Associates Limited has been a strong advocate of implementing sustainable asset management in the municipal infrastructure industry.

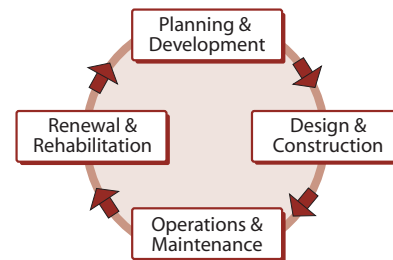
It is clear the challenges facing municipalities in addressing aging infrastructure today are, in many cases, only the start of a significant area of management to be addressed in the immediate future.

Our focus has been on developing a process that encourages municipalities to begin the process of introducing and ultimately integrating the principles of sustainability into their everyday work. **Let us guide you out of the maze!**

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## Introduce New Principles For Sustainability

### LIFECYCLE OF AN ASSET



Consider infrastructure as assets – they have value

Consider full life expectancy of assets

Integrate financial and technical assessments and management between asset groups



*asset management*  
for municipal infrastructure

## Asset Management Scale

1	2	3	4	5	6	7	8	9	10
Current Management			Change Management				Sustainable Management		
<b>EDUCATION</b> Decision-makers and infrastructure managers			<b>DEVELOP AM STRATEGIC PLAN</b>				<b>IMPLEMENT TOOLS &amp; TECHNIQUES</b>		
<ul style="list-style-type: none"> <li>Organization Review</li> <li>Compliance Review</li> <li>Technology Planning</li> <li>Cost of Sustainable Service</li> <li>Awareness Session</li> <li>Report Card</li> <li>Renewal Plans</li> </ul>			<ol style="list-style-type: none"> <li>1. Planning - scope, life cycle, funding requirements, performance measures</li> <li>2. Design and build the framework – practices, standards, processes, tools</li> <li>3. Implementation – manage infrastructure through capital and O&amp;M activities</li> </ol>				<ul style="list-style-type: none"> <li>Asset Inventory / Valuation</li> <li>Asset Descriptions / Condition</li> <li>Future Demand</li> <li>Life-Cycle Plan(s)</li> <li>Levels of Service / Standards</li> <li>AM Practices – Best Practices</li> <li>Technology / Software</li> <li>AM Organization</li> <li>AM Funding Strategy and Budget</li> </ul>		

Where is your municipality on the AM scale?





### capabilities

Many Canadian municipalities now recognize the importance of managing their municipal infrastructure (e.g. roads, sewers, water mains) as assets that require ongoing investment in order to sustain them. Asset management plans address the integration of technical and financial plans by applying principles such as asset valuation, life cycle management, risk assessment and performance measurement.

More recently, RVA has developed skills to assist municipalities in meeting the requirement from the Public Sector Accounting Board (PSAB) to report on their tangible capital assets by 2009. In response to the Ontario Municipal Benchmarking Initiative (OMBI), we have created tools to complete a comprehensive valuation process for municipal infrastructure assets when the amount of historical financial information is available.

Asset management plans are required to address aging infrastructure; public demands for a high level of service and accountability; more stringent regulations; and limited financial resources.

R.V. Anderson Associates Limited (RVA) assists municipalities with long-term strategic planning of policies and programs as well as short-term capital planning of projects. We are actively involved with municipal, provincial and federal initiatives across Canada, such as the InfraGuide and the Technology Road Map. We have also participated in the development of a web-based tools for asset management planning (e.g. RIVA).

### marquee projects

#### cost of sustainable service studies

- Water and Wastewater Systems, former Region of Hamilton-Wentworth
- Water and Wastewater Systems, Regional Municipality of Durham
- Water, Wastewater and Stormwater Systems, City of Guelph
- Water and Wastewater Systems, City of Saint John
- Water and Wastewater Systems, City of Thunder Bay
- Roads, Town of Whitby
- Water Rates Study, City of Greater Sudbury
- Water and Wastewater Systems, Town of Marathon

### specialized services

- Inventory and mapping
- Asset valuation
- Asset condition audits
- Condition rating systems
- Performance benchmarking
- Best practices
- Risk assessment
- Renewal plans
- Cost of sustainable service studies
- Water and sewer rates studies
- Implementation plans
- Business plans
- Information technology (IT) plans
- Geographic information systems (GIS)
- Hydraulic modelling
- Decision support systems
- Trenchless technologies
- Maintenance management systems
- Value engineering
- PSAB 3150

#### asset management strategy

**Asset Management Strategic Plan for Water and Wastewater:** Development of an asset management framework for the City of Hamilton integrating capacity and expansion demands with sustainable infrastructure management and legislative requirements, including PSAB 3150. A key element is the inclusion of risk assessments and their impact on project priorities. Implementation recommendations include prioritized risk assessments of all major processes with to establish priorities for future capital expenditures.

**Asset Management Master Plan:** RVA is developing an infrastructure management “master plan” for the City of Greater Sudbury, completing an initial assessment of the City’s current activities in managing its water and wastewater systems. RVA prepared a “report card” of the City’s current processes with respect to AM best practices, identifying strategic recommendations for further AM development.

#### asset valuation

**Ontario Municipal Benchmarking Initiative Asset Valuation Study:** Strategic advice and preparation of an OMBI pilot study report for the detailed analysis and valuation of the Regional Municipality of Niagara’s water and wastewater infrastructure. The project also included a series of deliverables to satisfy the requirements of PSAB 3150. Historic ENR Cost Record data was used to backdate the value of each asset, with depreciation based on infrastructure life expectancies. The financial model included the ability to identify the book value for any chosen year, while calibrated to Regional costs.

#### best practice reports for the national guide to sustainable municipal infrastructure (InfraGuide)

- Municipal Infrastructure Asset Management
- An Integrated Approach to Assessment and Evaluation of Municipal Road, Sewer and Water Networks
- Deterioration and Inspection of Water Distribution Systems
- Developing a Water Distribution System Renewal Plan
- Water Quality in Distribution Systems
- Operation and Maintenance of Small Water Systems
- Sidewalk Design, Construction and Maintenance
- Wastewater Treatment Plant Optimization
- Biosolids Management Programs
- Water and Sewer Rates – Full Cost Recovery

#### condition audits

**Water and Wastewater Outstations:** Inspection and asset management plan for over 120 water and wastewater pumping stations, in the City of Hamilton.

**Wastewater Pumping Stations:** Inspection of 15 sewage pumping stations in the City of Toronto.

**Toronto School Board:** Inspection of over 200 schools to provide input to asset management software (RECAPP) in the City of Toronto.

#### renewal programs

**Water Distribution System Needs Study:** The City of London has over 1400 km of water main. RVA conducted a review of London’s water distribution system to assess its condition in terms of water main breaks, hydraulic capacity, water quality and leakage. A 10-year renewal program was proposed. Recommendations were also provided for the City’s maintenance program, water quality improvement program and inspection program.

**Water Main Break Reduction Study:** The City of Toronto has over 5900 km of water main. In recent years, the City has repaired over 1300 breaks per year. RVA conducted a review of the City’s water main inventory, break records, as well as pipe coupon and soil samples in order to identify the primary causes of breaks. In order to reduce the number of breaks, it was recommended that the City continue with their cathodic protection and main replacement programs.

**Water Distribution System Renewal Strategy:** RVA was retained to develop a strategy to renew the City of Moncton’s water distribution system. This strategy included recommendations for cleaning and lining, cathodic protection, flushing and swabbing, leak detection as well as replacement of water mains.

**Infrastructure Needs Study:** This study included identification and analysis of infrastructure needs over the next 20 years for the water supply and wastewater disposal systems. This study was completed in conjunction with a review of the Official Plan for the City of Greater Sudbury.

**Guidelines for Condition Assessment and Rehabilitation of Large Sewers:** RVA was a member of a consortium that assisted the National Research Council with the development of guidelines for the condition assessment and rehabilitation of large sewers.