

Developing Asset Management Tools in Alberta – Lessons learned



*Web Based Solutions to Infrastructure
and Asset Management*

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Presentation Overview



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- Infrastructure Asset Management overview
- The Alberta situation
- Lessons learned
- Additional information on Infrastructure Asset Management

What is Infrastructure Asset Management?



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- Combination of *processes*, *data* and *tools* applied to reduce risk and optimize the infrastructure investment

Source: International Infrastructure Management Manual – Version 1.0

- *“...provides a framework that helps us see the whole ... it delivers a compelling case, not just for renewal, but for sustainability”*

Source: Brown and Caldwell, 2004

- *“Our most important discovery has been that despite new and exciting technology ...the most crucial aspects to any asset management system is still its **data**”*

* Getting started in Public Works Asset Management – CarteGraph Systems Inc., 2000

Why Infrastructure Asset Management?



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- Because when this happens its too late!

Asset Management tools need to answer?

- How do you gauge your progress?
 1. What do you own?
 2. What is it worth?
 3. What is its condition?
 4. What is the deferred maintenance?
 5. What is the remaining service life?
 6. What do you fix first?

Types of Asset Management Systems



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- Infrastructure Asset Management systems
 - Track and manage data related to Infrastructure
 - Most have tools for inventory and work management
 - Marketed as ‘total solutions’ but lack tools for developing comprehensive infrastructure management plans
 - Do not address all six “What’s”
- Expert systems
 - Decision support tools for evaluation and analysis
 - Limited data storage and tracking capabilities
 - Work in-conjunction with Infrastructure Asset Management tools
 - Specific to a certain niches (water modeling, sewer modeling, etc)
 - Do not address all six “What’s”

Types of Asset Management Systems...



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- Enterprise Resource Planning systems
 - Many contain Infrastructure Asset Management modules
 - Tools generally focus on Accounting (people hour projections) rather than engineering principles (condition assessment)
 - Do not address all six “What’s
- Custom developed systems



The Alberta Landscape

- Challenges facing small to medium sized Municipalities
 - Limited staffing and time constraints
 - Limited budgets
 - Council / Administration perceptions
 - Most do not have formalized asset management processes
 - Most do not have well developed IT infrastructure
 - Most connect to the Internet via a dialup connection
 - Most do not have in house CAD or GIS capabilities

The Alberta Landscape...



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- Infrastructure information exists in several sources:
 - Paper based Drawings
 - Paper based Reports
 - Public Works employees knowledge base
 - Digital documents (Microsoft Excel or Access, CAD files)
 - Information dispersed between many locations
 - Public Works Garage, Town Office, Engineering consultants, etc
 - As-builds drawings are typically not accurate or current
- Municipalities rely heavily upon Engineering consultants

The Alberta Landscape...



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- Municipalities interact with Partners
 - Data collection
 - Data creation / entry
 - Condition assessments
 - Both parties entering data at the same time:
 - Caused problems – requires a set of processes to monitor and track

Data Standards



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- Data standards
 - Non-spatial - standardization – St versus Street
 - Spatial layer structure and attribution
- Ensures data quality and consistency
- Controls how partners / internal staff create / modify data
- Ensures economic value in the data created – do it right the first time!

The elements required for success

- Driven by business needs not technology
- Tools provide the framework to begin gathering / recording data in an structured and organized manner
- Tools need to help a Municipality answer the six “What’s”
- Requires a strong internal champion at the management level
- Effective management of people and processes
- Asset Management needs to be viewed as a long term initiative with measurable benefits
 - Implementation should be slow and methodical
 - With small quick win projects

Where are the gaps?

- Planning – Asset Management Plans
- Quality Assurance / Quality Control processes
 - Including data standards to help mitigate problems
- Internalization of Asset Management tools
- Sharing of data between partners
- Comprehension that asset management is an ongoing process
- Change management and process improvements are areas that need to be factored into implementations

Additional Asset Management Resources



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- International Infrastructure Management Manual
 - www.ingenium.org.nz/publications/iimm/
- Infraguide Program – National Guide to Sustainable Municipal Infrastructure
 - www.infrasguide.gc.ca
- National Research Council
 - irc.nrc-cnrc.gc.ca/uir/apwa/
 - irc.nrc-cnrc.gc.ca/uir/miip/
- Brown and Caldwell – Asset Management
 - www.bcwaternews.com/AssetMg
- The Institute of Asset Management
 - www.iam-uk.org/
- Federation of Canadian Municipalities
 - www.fcm.ca

Asset Management Vendors



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- Hansen - Hansen's Enterprise Solutions
 - www.hansen.com
- GBA Master Series
 - <http://www.gbamasterseries.com/>
- Azteca – CityWorks Suite
 - www.azteca.com
- CarteGraph
 - www.cartegraph.com
- UMA Engineering – Sewer Management, Road Management
 - www.umagroup.com
- And others...

Summary – the long road to success!

- Infrastructure Asset Management is a combination of *processes*, *data* and *tools*
- Key fundamental components for Infrastructure Asset Management:
 - Standards
 - Processes
 - Plans
- Asset Management should leverage spatial tools but not take over application
- *"Every moment spent planning saves three or four in execution."*
 - C. Greenwalt

Contact Information



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