



Asset Management Newsletter

SEVENTEENTH EDITION – SUMMER 2016 ISSUE



How I Personalized Asset Management

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I recently reached a milestone birthday and must admit, the speed of life has shocked me. I am sobered by the fact that I can no longer legitimately think of myself as young. In my head, I'm still somewhere around 35.

How is it that this asset has been self-oxygenating for 50 years? As I reflect on its current condition, it is getting a bit ratty and starting to depreciate. Maintenance costs are going up and it can be a challenge to sustain the existing level of service that I have come to enjoy. That being said, I have invested in a number of long-term strategies to extend the useful life of the asset. Although lifecycle analysis indicates that current performance may be unsustainable in the long term, I decided that a robust strategy may minimize the risks.

Part of my strategy involved downloading a free fitness app. According to current research, those who track their activity level and food intake have a better chance of reaching their health and fitness goals. In all honesty, tracking my eating has not stopped me from indulging but it has given me some great data. It is the truth serum I need.

It has forced me to face up to the reality that my 10 km runs do not justify the wine and chocolate that often follow.

With all this information, I have a choice. I can resent, ignore or argue with the facts, or I can use the data to help me make better, honest and deliberate decisions. That being said, current research **also** demonstrates that it is not that we don't know what to do, we don't DO what we already know. Because if facts equaled change then no one would smoke or drink or speed or text while driving.

So what is this self-indulgent reflection doing in an asset management newsletter? Life is all about managing assets whether it is your own health or municipal infrastructure. As a former politician, I am passionate about asset management and I have made it my mission to inspire elected officials to take their stewardship responsibilities seriously. Insert a yawn.

Despite the growing awareness of the infrastructure deficit, I continue to observe either resistance and/or ambivalence to the subject. Eyes roll and spirits drop. Let's face it.... It is hard to make asset management sexy or exciting. Although the long term sustainability of publicly owned assets ought to be the most critical strategic priority, it often gets buried under a number of other more visible initiatives, some being outside of the mandated authority and responsibility of local government.

Asset management is not a buzz word or a phase to endure or box to tick. It may feel like one more thing on the plate of local government like being forced to eat a burger with a double patty after a massive turkey dinner, but it really is formalizing what is already being done.

Asset management, in its simplest form, is a process that puts some structure and rigour around managing publicly owned infrastructure and the service it delivers. The asset management process provides the information for local government to develop a strategy that considers realistic life-cycle projections, replacement costs, and risk analysis to allow for long term organization-wide planning.

Our built environment is the foundation of our communities whether it is statutory services (transportation, water and wastewater systems) or non-statutory services (recreation facilities or cultural centers). Renewing and maintaining our existing infrastructure and services is key to our continued economic vitality as a country. It is imperative that local governments continue to designate financial and human resources into appropriate levels of data collection to inform their decision making. You need to know the truth or you have what is referred to as “decision-based evidence making instead of evidence-based decision making.”

It is no different than our health. Whether it is our bodies or our infrastructure, we may be tempted to resent, ignore or argue with the slow inexorable tide of aging but that is not leadership. Leadership is having the courage to face reality: we have exercised too little, eaten too much, and we have the empirical evidence to prove it! Asset management is the truth serum and since these assets are not getting any younger, what are we going to DO with what we KNOW?

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Northern Rockies Wins National Asset Management Award

By Lou-Ann Watson, Public Works Operations Administration Manager, NRRM; Catherine Simpson, Strategic Asset Management Project Lead, Kerr Wood Leidal, Consulting Engineers.



As the steward of over half a billion dollars in community assets, Northern Rockies Regional Municipality (NRRM)

is committed to managing municipal infrastructure in a way that is proactive and efficient, meeting the standards of service necessary for a vibrant and sustainable community.



Service delivery is a fundamental driver, with a current focus on rehabilitating existing infrastructure to ensure a solid foundation upon which the community can grow and prosper. NRRM has made significant achievements in asset management over the last three years, with a made-in-Northern-Rockies Asset Management System (AMS) now in its first year of implementation.

Establishment of the AMS was catalyzed by the signing of the Infrastructure Development Contribution Agreement (IDCA) with the Province in 2013, marking an important

milestone in committing to service-oriented, full life-cycle infrastructure management across the NRRM. The IDCA is an innovative program unique to NRRM that returns a portion of the gas development royalty revenue from operations within NRRM to the municipality, with strong accountability measures linked to growth and demonstrated need for reinvestment. The agreement mandates a hands-on, collaborative approach to capital planning between NRRM and the Ministry of Community, Sport and Cultural Development that has been fully integrated with NRRM's AMS and its internal budget approval process.



Robin Lattimer, KWL, NRRM Regional Councillor Todd Osbourne, NRRM Director of Finance Toni Thurbide, Colwyn Sunderland, KWL, and Liam Edwards, Executive Director of Local Government Infrastructure and Finance with the Province of British Columbia.

This year's recipient of the Canadian Network of Asset Managers' (CNAM) Tereo Award, NRRM is very pleased to be recognized for excellence in applying asset management, and the resulting significant improvements to business performance. "Forward-looking management of our Municipal infrastructure... [is] essential for good governance," stated Mayor Bill Streeper. "We are very proud that our innovative approach to asset management is receiving national attention."

Community Context

Located in the Northeast corner of British Columbia, NRRM has a land base comprising 10% of the Province with a small permanent population. NRRM's remote urban centre (Fort Nelson) and assortment of rural communities lends itself to distinctive responsibilities and challenges. NRRM is also the key service centre for three of the largest natural gas basins in Western Canada. Community infrastructure is critically linked to the

economy; it provides the capacity for regional growth and new jobs, and the regional economy provides support in funding this infrastructure. Being proactive and adaptive with respect to supporting future growth and development is also essential given fluctuating economic conditions.

Being BC's only Regional Municipality, NRRM has a broad jurisdiction which extends beyond that traditionally held by municipalities in BC. With respect to typical municipal infrastructure and service provision, NRRM has the added responsibility of providing services to rural remote locations at varying levels across its 85,015 km² land base. The level of diversity of the Municipality underscores the importance of having a flexible system for managing its assets.

Asset Management System

From the onset, NRRM Council, staff and the Kerr Wood Leidal Associates (KWL) team recognized that a typical "one-size-fits-all" approach would not work for NRRM's unique circumstances and together established a responsive and dynamic system that reflects best practices and community needs. KWL has worked with NRRM to develop and operate a corporate system grounded in practicality and adaptable to organizational change.

According to NRRM's City Manager, Randy McLean, "The [AMS] has proven to be an extremely beneficial tool... [it] provides us with the resiliency required in order to apply informed decisions relating to major capital investments, giving consideration to stakeholder interests, economic conditions, and existing asset conditions. It helps us intelligently answer, what do we want, what do we have, what do we need and when."

The AMS – a toolbox of resources to be used in concert for ensuring successful business performance – was developed over three phases, starting in 2013.

Phase 1 included the creation of an asset management policy and framework. These resources provided a holistic foundation for preparing Asset Management Plans for community water, wastewater, stormwater and road assets.

Phase 2 focused on the development of the AMS strategy and robust financial planning to align with the 20-year capital planning process. This phase also involved the scoping of an Asset Information System and the completion of Asset Management Plans for community building & facility assets.



Graphic: Structure and Elements of NRRM’s AMS

Phase 3 involved finalizing key tools and resources for implementing the AMS over the long term. These include an Asset Management Handbook, Asset Management Playbook, Asset Information System, and a Community Awareness Strategy. These tools are being tested throughout 2016, the first year of implementation, and are intricately linked to all aspects of NRRM’s corporate decision-making processes.

The AMS has been developed according to provincial, national and international best practices. These best practices emphasize that a successful asset management program encompasses many disciplines and is integrated across the entire organization.

NRRM’s Team



Established and led by a dedicated multi-disciplinary team of staff, NRRM is using the AMS to ensure consistent and systematic decision-making. This process, facilitated by KWL, has involved extensive

consultation and working sessions with staff and Council to support organizational change. Having an engaged and talented team right from the outset allowed everyone to share their expertise (from administration, public works, finance, planning and information technology) and work toward a common vision.

"[The Tereo Award] is a testament to the dedication of Council and the management team, which has worked hard to transcend traditional organizational barriers and create an innovative and highly collaborative, ‘can-do’ culture for infrastructure management," stated Colwyn Sunderland, project manager with KWL. To complement NRRM’s team, KWL has provided ongoing support with a diverse team of planners, engineers and technologists to translate plans into action.

NRRM has also taken a collaborative approach to bring regional stakeholders into partnership, supporting sustainable financing and practices. The IDCA program is one such example of a successful long term partnership.

For more information, visit NRRM’s Asset Management webpage at: <http://www.northernrockies.ca/EN/main/city/infrastructure/asset-management.html>

OP-ED: On Sharing a Vision for “Sustainable Watershed Systems, through Asset Management”

By Kim Stephens, M.Eng., P.Eng., Wally Wells, P.Eng.

Collaboration between Asset Management BC and the Partnership for Water Sustainability in British Columbia had its genesis in a workshop hosted by the Regional District of Nanaimo in September 2010. In the years since, we have aligned efforts to advance our shared vision for *Sustainable Service Delivery*. The journey is ongoing. Our shared mission is to champion standards of practice that will create a water-resilient future. The branding for this desired outcome is: **Sustainable Watershed Systems, through Asset Management.**

Pathway to a Water-Resilient Future: The Water Balance of watersheds in urban areas is out of balance. A legacy of past community planning and infrastructure servicing practices failed to protect the natural Water Balance. A watershed is an integrated system. Restoring hydrologic integrity, and thus the Water Balance, is the pathway to a water-resilient future. Achieving this will require a long-term commitment by the community at large, successive

Municipal Councils and Regional Boards, and generations of land AND water professionals

Asset Management for Sustainable Service Delivery: A Framework for BC is the lynch-pin for a water-resilient future (see graphic on page 6). The BC Framework makes the link between local government services, the infrastructure that supports the delivery of those services, and watershed health.

Cathedral Thinking: In embarking on this journey to a water-resilient future, we can learn from our ancestors. The grand creations of antiquity were not designed with a quarterly report or 4-year election term in mind. The builders of great cathedrals in medieval times thought in terms of multiple generations carrying out their work, to complete a dream that would not be realised until long after the originator's death.

When we think of a cathedral two aspects come to mind: a soaring aspiration; and a grounded structure firmly planted throughout time. Cathedral thinking aptly describes the vision for Sustainable Watershed Systems!



Kim Stephens - Executive Director, Partnership for Water Sustainability in BC

Wally Wells - Executive Director, Asset Management BC

In the beginning.....

When the Partnership organized, and the Regional District of Nanaimo hosted the **Worth Every Penny Workshop** in 2010, this provided the Province and Asset Management BC with a forum to float the vision for 'Sustainable Service Delivery'. This event also launched a national *Primer on Worth Every Penny Workshop Series*.

'**Worth Every Penny**' had an impact. Its legacy is that it set in motion a chain of outcomes that is rippling through time. It jump-started our conversation. It got us thinking and talking about how local governments could move beyond the engineering and finance perspectives in order to fully

integrate land use planning into asset management. It provided us with the inspiration to redefine and frame **unfunded infrastructure liability** in a way that would resonate with Councils and Boards.

On Starting a Conversation about a New Approach: The Comox Valley was our pilot region for exploring a new way of thinking about municipal infrastructure. In designing a seminar series in spring 2011 that was open to all local governments on Vancouver Island, the four Comox Valley local governments arrived at this consensus: *All those involved in land development have a role to play in achieving Sustainable Service Delivery. The players include land use and infrastructure professionals.*

We then showcased the Comox Valley learnings at the **2011 State of Vancouver Island Economic Summit**. Our "forum within the Summit" celebrated Comox Valley collaboration, started an Island-wide conversation about Sustainable Service Delivery, and painted the big picture for water sustainability. Today, it is no accident that asset management and water sustainability are both top priorities for local governments not only on Vancouver Island but across the Province and gaining traction in the rest of the country.

The challenge is 'integration' and getting every discipline to recognize each others' contribution plus get the organization working together on a common path.

The other challenge is communicating and understanding the message. The work environment is changing with time as are the methods of communicating and the form of the messages.

We will tackle that challenge between now and the September issue of this newsletter. What are your thoughts on communicating the message? Provide your thoughts, views and suggestions to help with what we hope will be a very stimulating article. Send your thoughts to: info@assetmanagementbc.ca

Get It Right at the Front-End

Choice of words can make or break one's ability to open minds to a new or different way of thinking. Commencing with the 2011 Comox Valley seminars, we changed HOW we communicate with our local government audiences. Emphasis on the 80-20 life-cycle rule for infrastructure costs proved very effective in capturing and focussing attention. It was a 'watershed moment' in our history.

We observed audience *Aha moments* when we would point out that the initial capital cost of infrastructure is about 20% of the life-cycle cost, the other 80% largely

represents a future liability, and each year the funding shortfall grows. If communities are struggling to finance replacement or renewal of core infrastructure for essential water and sewer services, we would add, why would any Council also knowingly take on an unfunded drainage liability (due to impacts on the Water Balance)?

AMBC and the Partnership connected the dots between asset management and water sustainability. Everyone should know that the time to shape future life-cycle costs is at the community planning front-end. Our message was explicit: *get it right at the front-end; avoid a liability.*

As early as 2011, it was becoming clear that protection of a community’s natural resources would emerge as a foundation piece for Sustainable Service Delivery. To promote a holistic approach to infrastructure asset management, the Partnership framed three objectives for Sustainable Service Delivery: 1) pay down the legacy cost of engineered infrastructure; 2) reduce the life-cycle cost of new infrastructure; and 3) *mimic the natural Water Balance to forestall life-cycle liabilities.*

Watershed Systems are Infrastructure Assets

Fast forward to 2016. Over the years, the BC approach to asset management has learned from and built upon Australian experience, and has now gone to another level with our evolution to **Sustainable Service Delivery**. BC’s ability to achieve this bold leap was made possible by the close collaboration between Asset Management BC and the Institute of Public Works Engineering Australasia.

Sustainable Service Delivery is the singular aim. Asset Management is the means to achieve the aim. Suffice to say, BC is at the dawn of a new era.

Asset Management for Sustainable Service Delivery: A Framework for BC is indeed a game-changer. Because it is strategically aligned with the province’s capital grants programs, the BC Framework is now transforming how local governments view asset management. This includes fostering an awareness at all levels of local government that **watershed systems are also infrastructure assets**, and therefore need to be protected and managed in the same way that engineered assets are managed.

Asset Management Continuum: The Partnership for Water Sustainability is the champion for Step Three as described in the graphic below. This illustrates the journey as understanding grows and local governments progress towards a **water-resilient future**. Making better decisions starts with an understanding of how to mimic the natural Water Balance through a blend of engineered assets and natural services. Yet, the nub of the educational challenge is this: **Practitioner standards of practice are lagging behind science-based understanding.**

Watershed Systems provide Water Balance Services

The water-resilient future shown as Step Three on the Asset Management Continuum would be, by definition, a “Sustainable Watershed System”. This phrase is the short-form descriptor for *integration of natural systems thinking AND adaptation to a changing climate into Sustainable Service Delivery*. This outcome drives the curriculum design for the Georgia Basin Inter-Regional Education Initiative (IREI).

Beyond the Guidebook 2015: Moving Towards “Sustainable Watershed Systems, through Asset Management”, an IREI deliverable, is third in a series that builds on *Stormwater Planning: A Guidebook for British*

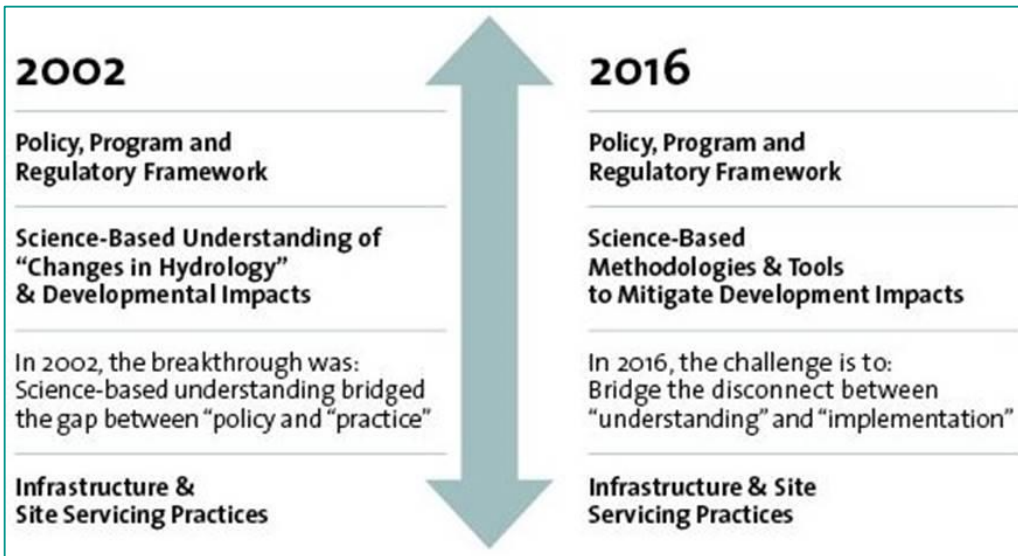


Columbia (2002). The Guidebook initiated a science-based approach to mimicking the natural Water Balance. Branding of *Sustainable Watershed Systems* commenced with Beyond the Guidebook 2015.

On Moving from “Understanding” to “Implementation”: Educating practitioners about Sustainable Watershed Systems is our starting point for bringing standards of practice into line with science-based understanding. We are going back to basics to teach these related concepts:

- a watershed is an **integrated system**, and therefore must be managed as such if urban development is to mimic the natural Water Balance;
- the three Water Balance pathways by which precipitation reaches streams are, by definition, **infrastructure assets**; and,
- the three pathways provide **water balance services** that must be protected to avoid incurring expensive fixes and/or an unfunded liability.

The graphic below conceptualizes the nature of the educational challenge in 2002 versus that in 2016.



Apply Science-based Understanding

In 2002, the breakthrough resulted from application of science-based **understanding** to develop the Water Balance Methodology. This allowed us to bridge what was then a yawning gap between POLICY and PRACTICE. This was a notable milestone in the process of creating a provincial policy, program and regulatory framework that makes possible Sustainable Watershed Systems.

Get It Right & Capitalize on Opportunities: As of 2016, BC is progressing. Yet, persistent challenges for practitioners to adopt, change or evolve standards of practice means there is still a substantive disconnect between UNDERSTANDING and IMPLEMENTATION. After a decade and a half, a pattern in the local government setting is one of missed opportunities to “get it right” at the time of planning and/or design. This perpetuates inadequate and/or uninformed practices by default.

Communities must capitalize on, not miss, opportunities. Think and act like a watershed. View each property through a watershed lens. Create cumulative benefits, not cumulative impacts! With this mind-set, communities can progress towards Sustainable Watershed Systems.

What It Means to be Enabled

The Province of BC enables local government. It does not prescribe solutions. The regulatory focus is on outcomes. This bottom-up approach relies on education, enabling tools and collaboration to turn ideas into action.

As the Asset Management Continuum illustrates, the requirements and conditions associated with **Asset Management for Sustainable Service Delivery: A Framework for BC** provide local governments with the financial incentive to re-focus, apply science-based **methodologies and tools**, and “get it right”.

The role of Asset Management BC is to ensure consistency of understanding and application of Sustainable Service Delivery methodologies and tools to meet the goals of the provincial policy and regulatory framework.

The BC Framework encourages an appropriate balance of regulation and education. Over time, the IREI program led by the Partnership for Water Sustainability would support implementation of fully integrated Sustainable Service Delivery by providing the technical foundation for Sustainable Watershed Systems.

Regional District of Nanaimo Tackles Asset Management

By Chris Midgley, Manager of Water Services and Asset Management, RDN



The purpose of this case study is to provide a regional district perspective on asset management, and to describe the process for implementing asset management that the Regional District of Nanaimo (RDN) has followed over the last two years.

Two key takeaways from this case study are that, perhaps surprisingly, regional districts are uniquely structured to establish and maintain a coordinated, collaborative, organization-wide asset management program; and that establishing strategic reserve funds can enable a regional district to initiate an organization-wide asset management program with minimal impact on taxpayers.

The Structural Advantage

Like all regional districts, the RDN has always practiced asset management. As a level of government, regional districts emerged out of the recognition that some services are best delivered collaboratively, at a large scale, across multiple jurisdictions. This often involves particularly capital-intensive services, which require partnerships to achieve the economies of scale necessary to finance such services. For the RDN, this includes water provision and wastewater treatment, solid waste management and transit services, operation and maintenance of recreational facilities and acquisition and management of regional parks. As the RDN approaches its fiftieth anniversary (in 2017), the net present value of all assets, as reported in 2015, was \$176.4 million dollars, with almost \$200 million in estimated capital expenditure over the next decade. It is impossible to reach this level of service delivery and financial capacity in the absence of some form of asset management.

Yet at the same time the RDN asset management has never been coordinated across the organization as a whole. It has generally been practiced at the departmental level, with each functional group responsible for delivering a service or set of services also being largely responsible for managing the assets owned

by that service. Wastewater services manage wastewater services assets. Solid waste services manage solid waste services assets, and so on through every regional service.

The rationale behind this structure is simple: if a taxpayer resides in a 'service area', that taxpayer pays for that service, and as a rule should receive something for that service, like curbside garbage collection, or connection to a wastewater treatment plant. If the taxpayer is not in a service area, they pay nothing and, as a rule receive nothing. Taxes raised to deliver a service can only be used for that service. Full stop.

This gets at the heart of what it means to be a regional district: essentially an amalgamation of semi-autonomous service providers housed under one roof. One potential negative effect of this structure is to institutionalize departments as silos, or 'functions' in regional district parlance, reinforcing a segregated approach to asset management instead of an organizational approach. However, this structure can also be used to the organization's advantage, and it is in this sense that the RDN's asset management program can offer an initial lesson.

The unlikely advantage of the 'legislated silo model' is that revenues also come in silos. This means that an unexpected cost in one department does not alter the budget in another department – a wastewater project cannot be impacted because of a problem with the solid waste budget. As a result, if a single department has the budget or staff to implement an asset management program, the practice will have a protected foundation within the organization. The benefit of this is that asset management practices present within a single department can serve as the basis on which to build an organizational approach to asset management.

Related to this, regional districts will typically have an Administration function, which includes services like Finance, IT, Human Resources, Communications, the CAOs office, etc. All departments contribute to the Administration function, and therefore, according to the



service provider model, all departments receive services back from the Administration function. This does not simply enable interdepartmental coordination, it can in fact require interdepartmental coordination for any activities funded through the Administration function. If used to one's advantage, this can have the effect of institutionalizing collaboration instead of institutionalizing silos.

Institutionalizing Collaboration

In the Regional District of Nanaimo, the Administration function evolved over time to include an Energy and Sustainability department tasked in part with implementing more sustainable practices within the RDN and finding opportunities for efficiency across the organization as a whole. This department included a Manager level position and a Sustainability Coordinator position, both of whom tended to work closely with other departments tracking and reporting energy use and identifying opportunities for capital investments in equipment, infrastructure and initiatives that demonstrate operational savings, and ultimately a positive return on the investment over time.

As a result of the organizational perspective of the Energy and Sustainability department; the close focus on machinery and equipment and the staff relationships that the work created, the RDN had built a department with a mandate to work across the organization involving staff with a skill set that merged longer-term financial planning and asset renewal, as well as a budget devoted to that purpose.

This group was well positioned to refocus the efforts of the Energy and Sustainability department from energy management specifically to asset management more broadly, and quickly turn attention toward comparing asset management practices across departments and coordinating activities to work toward a level organizational playing field with respect to asset management.

Strategic Reserve Funds

Within the context of asset management, a great deal of discussion focuses on establishing reserve funds for asset renewal, and contributing sufficiently to those reserve funds to ensure the financial capacity to undertake asset renewals when necessary. This is undoubtedly true, but not necessarily helpful in establishing a coordinated, organizational approach to asset management in a regional district. Achieving the coordinated response

requires a more strategic approach to establishing reserve funds. This is another way that the RDN experience can be helpful.

In 2008, the RDN signed on to the provincial Climate Action Charter. In return for signing on and following the commitments of the Charter, the RDN receives a *Climate Action Revenue Incentive Program* (CARIP) rebate. Each year, the rebate equals the amount the regional district spends on the provincial Carbon Tax, which for the RDN amounts to approximately \$100,000 per year. In keeping with the underlying intent of the Charter to reduce corporate emissions, the initial strategic direction the RDN took was to establish a reserve fund using this rebate that would make funding available to all departments to invest in efficient infrastructure and equipment, or other initiatives that could reduce energy use and generate operational savings across the organization.

It is important to stress that this need not be an enormous reserve fund. Its purpose was never to provide complete funding for new assets. That always was, and always will remain the responsibility of the department that owns the asset. This reserve fund was available to invest in the incremental additional cost of higher efficiency assets when compared to a more conventional alternative, and to implement initiatives that could result in savings.

In addition to supporting capital investment, that reserve fund is now also available to support asset management as an organization-wide initiative that improves the overall efficiency of the RDN, and generates long term savings over asset lifecycles.

Taken together, the structure of the regional district model, which can be used to institutionalize collaboration at least as effectively as it institutionalizes silos, and the establishment of strategic reserve funds to support organizational efficiency initiatives sets the stage for the actual process that the RDN followed since 2014.

The RDN Asset Management Process

The first step that the RDN took in developing an organizational approach to asset management was to issue a Request for Proposals for a Strategic Asset Management Plan and an Implementation Plan. The successful firm for that project was Opus, which followed a rigorous process of interviewing RDN staff, examining RDN budgets and level of service goals, and assessing the general state of asset management in the RDN. The goal of the project was to develop an implementation plan that would guide the RDN toward the basic level of asset

management, following the Asset Management BC (AMBC) Roadmap.

The AMBC Roadmap includes six modules, as shown in **Figure 1**.



Figure 1: Six Modules of the AMBC Roadmap, from Guide for Using the Asset Management BC Roadmap, 2011.

Based on interviews with staff, Opus established benchmarks for current level of asset management practices for all RDN departments, articulated desired asset management practices, then outlined the activities necessary to achieve a basic level of asset management, and the costs associated with those activities.

This work produced an enormous amount of valuable information for RDN staff to consider, but also considerable discomfort around the potential costs to implement, amounting to an estimated two million dollars over a four-year period. This led to very clear (and seemingly impossible) direction to staff: find a way to implement the first two years of the plan at no additional cost to the taxpayer.

In order to progress, the full range of actions proposed in the Implementation Plan were distilled down to only those high priority items recommended in Years 1 and 2. This cut the total number of actions almost in half to 34 actions. In addition to reducing the total number of actions, it was also very apparent that the recommended actions were clustering around a handful of key activities.

Year 1

For Year 1, recommended activities clustered around developing a basic asset inventory, ensuring staff support to understand and implement asset management, tracking operations and maintenance costs, and defining level of service. Tracing these activities back to the AMBC Roadmap, these actions fell into the modules of ‘Know Your Assets’, ‘Know Your Financial Position’ and ‘Understand Decision Making’ as shown in **Figure 2**.

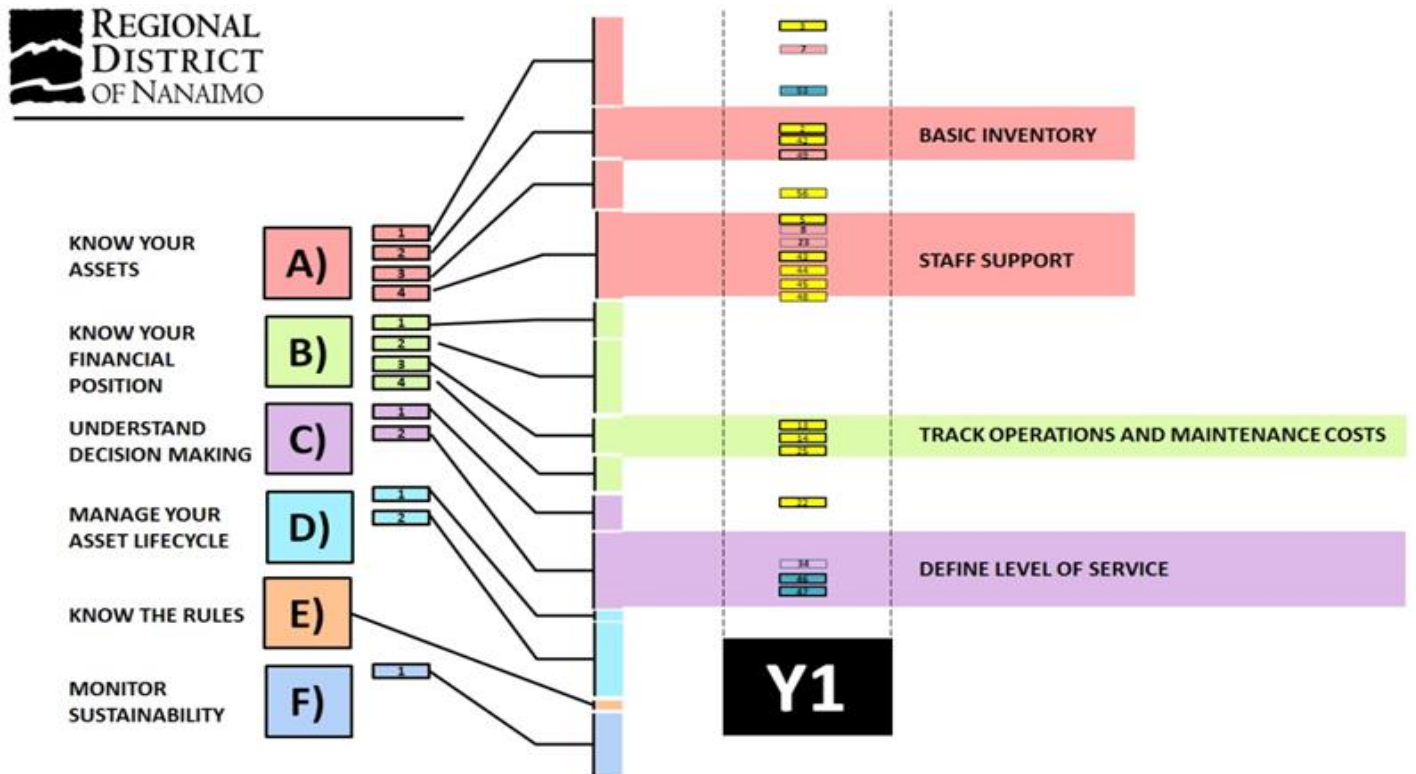


Figure 2: Year 1 Activities for Implementing Asset Management at the RDN, aligned to the AMBC Roadmap.

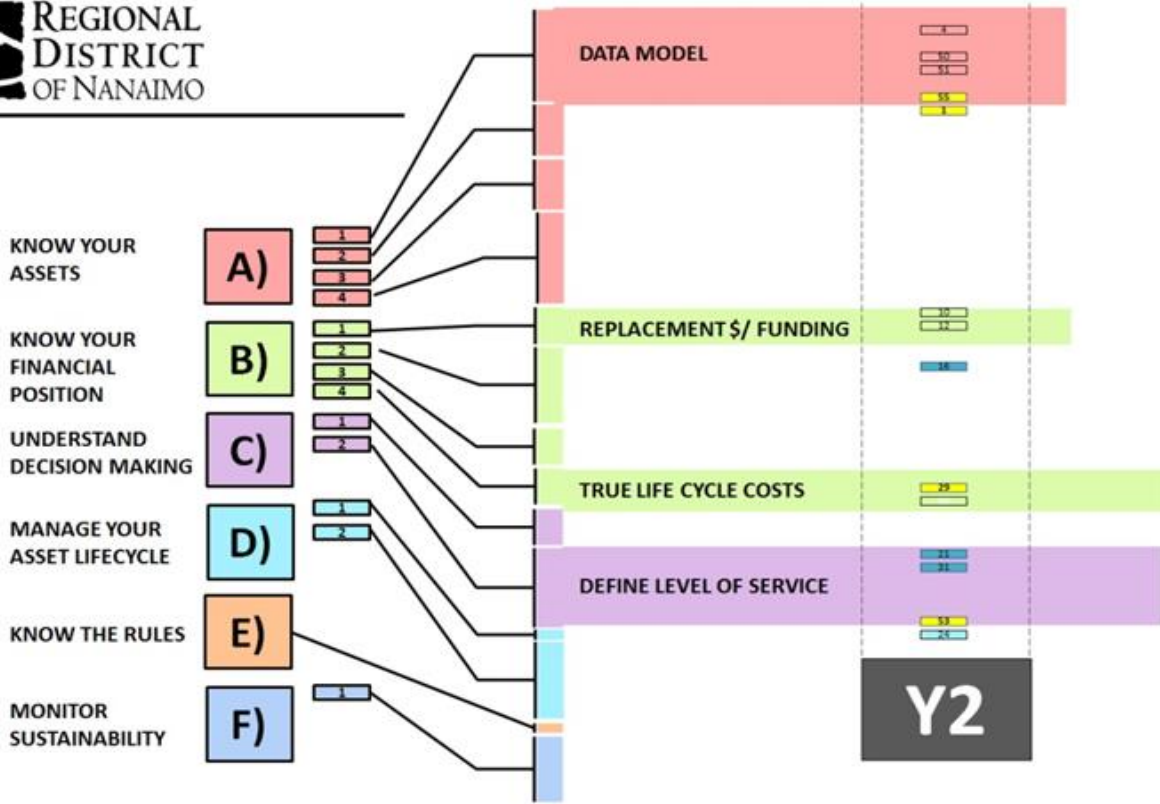


Figure 3: Year 2 Activities for Implementing Asset Management at the RDN, aligned to the AMBC Roadmap

Year 2

For Year 2, the recommended activities clustered around conducting a data audit and developing a data model, improving understanding of replacement costs and funding, identifying true life cycle costs, and further defining levels of service, orienting around the same AMBC modules, as shown in Figure 3.

Coordinated Approach

To achieve the zero tax impact imperative, it was necessary to piggy back initial work on activities already approved in the budget and underway. Fortunately, two corporate initiatives were already in process at the RDN that could be harnessed to move these Year 1 and 2 actions forward. These were preparation for a strategic planning session for the Board of Directors to be elected in November, 2014; and an Operational and Efficiency Review led by the CAO’s office in lieu of a third-party core services review.

What was most interesting about this process of distillation is how closely the recommendations from the asset management program aligned with staff comments and suggestions coming out of the Operational and

Efficiency Review. In particular, many of the recommendations to achieve a basic level of asset management stressed the importance of establishing processes and procedures to adequately capture asset information; ensuring that the organization invests in the tools and the capacity building to ensure a smooth transition toward a new set of organizational practices; and generally effectively communicating the importance of asset management to the organization as a whole.

Similarly, the Operational and Efficiency Review revealed that staff at the RDN saw a significant opportunity to improve the overall efficiency of the organization by ensuring that procedures and processes were formally documented, that staff have access to the necessary tools and investment in staff training to do their job effectively, and the overall need to improve lines of communication between departments, as well as between hierarchical layers in the organization.

The Asset Management Implementation Plan also made strong recommendations relating to defining service levels with specificity, documenting goals and objectives for asset management, and aligning those goals to corporate organizational goals in general. This class of

recommendations aligned almost perfectly with the activities planned for Board Strategic Planning session.

After linking recommendations within the Asset Management Implementation Plan to the RDNs internal Operational and Efficiency Review and planning for the Board Strategic Planning Sessions, only a very few high priority items remained, making it relatively easy to include all the recommended actions for Year 1 and 2 into planned activities for RDN staff over the ensuing year and a half.

Most of this initial work was completed over the course of 2014 and 2015, and certainly not at the pace envisioned in the original Implementation Plan. The RDN has preferred to hit the ground marching rather than running. In contrast to running, which is fast, but potentially in the wrong direction, uncomfortable if feet are stomped on and dangerous if toward a cliff, marching is slower, orderly and in unison. Now, with a growing group of committed staff across departments, and others dedicated more specifically to asset management, including a two-year Asset Management Coordinator position (funded out of strategic reserves), the RDN is marching along, slowly but surely, quarterly report by quarterly report toward a cohesive and collaborative approach to asset management.

Changing the Titanic Course: Integrating Asset Management and Land Use Planning

By: Kim Fowler, M.Sc., MCIP, RPP.

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The weak linkage between land use planning and asset management is a main cause of local government's mounting infrastructure deficit. Titanic-like

outcomes will cause local governments to significantly reduce services to their communities, significantly increase property taxes or

both. Integrating land use planning and asset management is needed to change the set course of local governments to a more sustainable future.

The current Titanic course is evidenced in three related and disturbing reports:

1. The Canadian Infrastructure Report Card for 2016
2. The international NATCat Service reporting on the damage to infrastructure by climate change
3. A comprehensive study of growth in major Canadian metropolitan areas using 2006-2011 Census data by David Gordon and Isaac Shirokoff of the School of Urban and Regional Planning, Queen's University

The Canadian Infrastructure Report Card for 2016 showed 35% of infrastructure is in poor condition, which is a further decline from the 2011 report card. The international NATCat Service shows climate change is already damaging that infrastructure 3 times more than 30 years ago, increasing exponentially.

The Gordon-Shirokoff study of metropolitan growth found:

- 66% of the population in Canada lives in some form of suburb.
- 90% of the Census Metropolitan Area population growth was in auto suburbs and exurbs leaving only 10% in more sustainable active cores and transit suburbs.
- Almost half or 16 of the 33 Census Metropolitan Area had decreases in their core area populations.
- In comparison with their original research of 1996-2001 Census data, Canada became even more suburban.

The \$200 billion infrastructure deficit at the local government level in Canada continues to rise at \$5 billion per year. Core public infrastructure are local roads, buildings, potable water, wastewater, stormwater, bridges, transit systems, and emergency & recreation facilities. Asset management plans manage the life cycle of operating, maintaining and replacing our core public infrastructure, which is the economic backbone of our communities. Infrastructure comprises usually over 90% of the corporate value of a local government, who are failing to address significant community risks and liabilities for our most basic services. Perhaps then, we may understand why most local governments do not report on their infrastructure deficits or prepare asset management plans.

In land use planning, concepts of Smart Growth, Complete Communities, New Urbanism and Sustainable

Development have been around for decades. While many local governments incorporated and directed higher density, more mixed use, alternative transportation and user friendly design, recent research and review indicates substantive failure to successfully implement these concepts. The predominant land development form in Canadian metropolitan areas is still lower density, greenfield, single use-dominated, suburban sprawl.

How did local governments get onto this Titanic boat outcome?

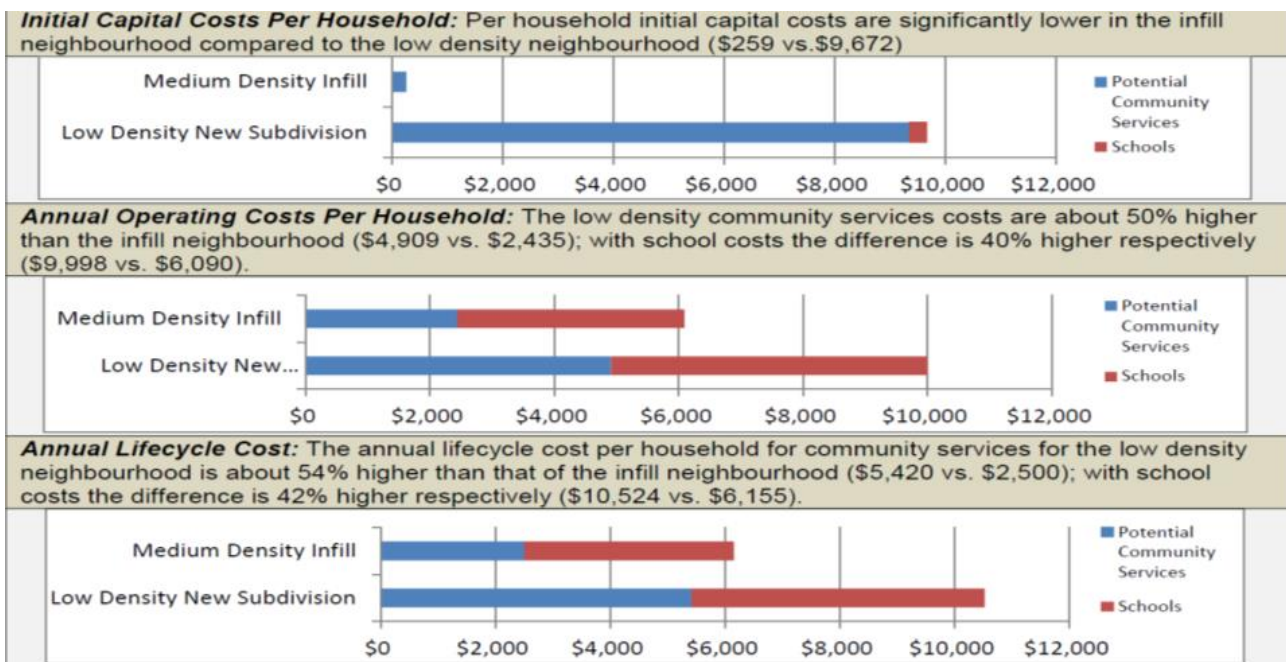
- **Reactive instead of proactive asset management** – Local governments have not set aside adequate funding for general maintenance of assets overtime leading to faster degradation. Asset improvement has been addressed when problems arise, costing local governments more in the long term. When added to the fund shortage for asset replacement, there are both short and long term funding shortfalls.
- **Not integrating asset management** - Most of the asset management work has been the responsibility of engineers. Financial officers, responsible for annual budgets, have not participated in discussions related to the ongoing maintenance and operation of assets. Planners, whose land-use proposals will influence the costs of maintenance and operation overtime, have not been connected to the asset management process.
- **Supporting land use decisions that do not consider comparative or lifecycle infrastructure costs** - Financial frameworks do not account for the long-term operations, maintenance, and replacement costs of development. This is incenting low density and sprawl over higher density development and infill and costing local governments more than if more compact development was supported and encouraged.
- **Revenues from development fees and charges do not fully recover costs to the local government of providing services generated by growth** - This means general revenues must be used to subsidize new development. The cost of lower density development is much higher per household unit, so the subsidy per unit is higher. Mayor Nenshi of the City of Calgary called this the “sprawl subsidy”.

How can local governments change the Titanic course?

- **Effective Asset Management** that is pro-active, long-term and integrated by:
 - Identifying an ongoing management and decision-making process to fund priorities based on asset inventory and condition.
 - Recognizing the importance of asset maintenance and properly supporting an asset replacement reserve fund.
 - Valuing natural assets for the community services they provide, such as improving water quality.
 - Coordinating infrastructure works to improve efficiency and set priorities across departments.
 - Engaging the community and regulators to discuss levels of service, the costs of providing services at current levels, how to pay for them and determine expectations and trade-offs.
 - Evaluating the risks threatening our assets – both natural risks such as climate change and human risks, such as delaying maintenance.
 - Understanding land use and growth decisions dictate servicing requirements and costs.
- **Growing Where We Can Afford** - More compact, mixed-use development is a more cost-efficient and environmentally, socially and financially sustainable form of development compared to low-density sprawling development.

Local governments can now model and compare their development scenarios with a free-sourced tool called Community Lifecycle Infrastructure Costing (CLIC) developed by the Ministry of Community, Sport and Cultural Development. The CLIC tool estimates planning level lifecycle cost and revenues associated with different types of residential developments over 100 years. ‘Lifecycle costs’ include initial capital, annual operating and maintenance, and replacement costs. The comparative results of a medium density infill development versus a low density new suburban subdivision from the City of Prince George are shown below.

Municipal Revenue Comparison		
	Low Density	Medium Density
Prop taxes	\$97k/ha	\$113k/ha
User charges	\$33k/ha	\$61k/ha
Tot rev	\$135k/ha	\$182k/ha



The results show the municipality will save hundreds of \$millions in infrastructure servicing costs in both the short and long term if medium density infill is pursued over suburban sprawl. The initial capital costs are 97 times less expensive; the annual operating cost are 50% lower, and; the municipal revenues for property taxes and user charges are significantly higher for the medium density infill development option.

Developing in a centralized location close to amenities is financially, environmentally and socially more sustainable. A “user pay” system where developments using more services will have to pay more for them, will provide clear market signals to achieve sustainability goals in growth management, and reduce mounting infrastructure deficits.

Another significant incentive to change the Titanic course is Provincial and Federal governments are requiring asset management plans as a condition of infrastructure funding grants. Further, one third of the new Federal infrastructure grants are being given to green infrastructure. And with Canada signing on to the COP21 Agreement in Paris last year, committing to significant reductions in greenhouse gas emissions, local governments will best position their chances of competitive grant awards by undertaking asset management planning and implementing their sustainable land use and energy & emissions plans. Communities served by these local governments will be more attractive to both private and public business and investment.

NAMS Training for Asset Management – 2016 Schedule

The 3-day NAMS training program for municipal staff will be offered through Asset Management BC in September and October at locations listed below. At least 20 people are needed per session. Registration fee is \$1,650 per person. Subsidy of 50% of that fee is available providing two or more people attend representing different disciplines as well as for communities who have previously participated now sending new or additional staff.

Locations of the workshops are expected to be:

- Vancouver Island - mid September
- Lower Mainland – mid September
- South Okanagan - October
- Cranbrook- October
- Prince George – October

The NAMS training program gives you the tools and knowledge to develop your asset management plan. IT is not in itself an asset management system nor a specific asset management software package. It does not replace any software packages you current or intend to use. Register early so we can finalize the location of the workshop base on attendance.

For more details, see www.assetmanagementbc.ca or contact **Asset Management BC** at info@assetmanagementbc.ca Locations and dates will be finalized based on registration.

Asset Management BC and Partners Sponsor Major Conference



Mark your Calendar for November, 2017. The date is November 3rd and 4th at the Hilton Airport Hotel, Vancouver, (Richmond). Watch for more details.

After introduction of the **'Asset Management for Sustainable Service**

Delivery: A BC Framework', as the core driver for asset management programs in BC, the Union of British Columbia Municipalities (UBCM) recently launched a detailed survey of all communities in BC with the deadline for submission of July 15, 2017. The survey results will provide an comprehensive overview of the state of asset management in BC, both qualitatively and quantitatively. Most important for Asset Management BC, the cumulative results will tell us what you need, what tools are still needed, and the strategies you need help with.

The theme for our fall Conference is therefore, **"Filling the Gaps."** The information from the survey will identify some of those gaps and the conference will focus on subjects to resolve gaps and funding programs for asset management.

Stay tuned for details or contact Asset Management BC at info@assetmanagementbc.ca

CNAM 10th Anniversary Conference in Halifax

By Kate Cheney, Administer for CNAM



"The 2016 Annual CNAM Conference was an emphatic success on all levels" was the feedback from attendees. This year saw record attendance with over 300 people

flocking to the 4-day event in Halifax, Nova Scotia. The Asset Management Industry was represented from coast to coast from governments, private sector, utilities, corporate and stakeholders at this year's event. The conference kicked off with an evening at Pier 21, the hub of harbour front district, a guided tour of the city and wind farm, the city garden and Peggy's Cove were also highlights. Highlighted this year were the high quality program created for attendees which spanned all aspects of asset management for all levels. First time events included the Late Night AM Show and a partnership with CH2M to deliver Asset Management Training. The conference closed with an excellent address by Jeff Moore, Assistant Deputy Minister of Infrastructure Canada

Congratulations to the 2016 Tereo Award recipient, **The Northern Rockies Regional Municipality, British Columbia, (NRRM) and their consultant, Kerr Wood Leidal Associates (KWL)** for their far reaching community Asset Management System. This system, included developing an Asset Management System tool (handbook) for Staff, Council and Stakeholders, creating traction all round with a Project Team that included Council and Staff and the roll-out of the Community Awareness Strategy & Asset Information System. This Award is sponsored by KMPG.

Plan to be at the 11th annual CNAM Conference in May 15-18, 2017 in Calgary, Alberta.



Join us in Calgary next May as we continue "Harnessing the Power of Asset Management". Now in its 11th year, the CNAM Conference and Tradeshow will deliver leading edge professional development, idea sharing and networking opportunities with your peers and government leaders to help municipalities of all sizes extend the framework, vision and implementation of their asset management programs.

Tips and Tactics: Measuring Tangible Benefits of Asset Management

by Bernadette O'Connor,
of Opus International Consultants (Canada) Ltd

Many politicians and executives across the globe are persuaded that Asset Management is good for business based on conceptual promises and reasoned logic.

- If we make informed decisions (i.e. evidence-based decisions), they will be better decisions and better decisions should generate benefit.
- If we have more knowledge and structured procedures, we can be more efficient and this will produce benefit.
- If we understand the cost-risk-level of service relationship, we can provide our services more effectively and surely this will return benefit.

Believing it is a good idea has taken Asset Management a long way in a lot of organizations. But is this enough to sustain momentum? And is this sufficient for good governance? I think not.

What have we been doing to define actual benefits and proving them?

Every organization implementing Asset Management, regardless of what phase you are in, should be actively tracking and reporting realized benefits. If you have not been asked the question yet – regarding proof of the benefits Asset Management is providing – you may well be asked it in the future. It is a question that needs preparation to give a credible answer.

Most organizations will have statements of expected benefits, some may have quantified the expected benefits, few will have measured results.

Benefit studies and a review of various Asset Management projects across the globe where benefit was measured, have reported benefits in the range of 5% to 40% (primarily in cost terms). The variance in outcome reinforces that benefit realization is personal to the organization.

We may one day have access to a sufficiently large dataset of benchmarked results to accurately give a 'rule-of-thumb' expectation for specific benefits. In the meantime, (and regardless of what others are doing), we should define and measure asset management benefits within our own organization.

Measuring tangible benefit provides evidence that:

- Asset Management is good for business
- The decisions and strategies implemented are working (or not working)

Benefits can be financial, social, environmental, or political (good governance/public confidence). However, for most organizations the initial emphasis is on return on investment or the financial benefits of Asset Management. These could be cash savings, opportunities to invest, or cost avoidance.

Benefits can be generated from:

- Better decision-making that reduces risk or consequence and therefore avoids costs that would be incurred if asset management practices were not in place.
- Having a more focused strategic view that reduces the whole-of-life cost of assets by considering operations, maintenance, renewal cost, and lifespan in decisions about capital works, project options, and construction methods.
- Implementing timely and cost-effective interventions that extend the lifespan of assets, thereby reducing the whole-of-life cost and deferring major capital expenditure.
- Achieving organizational efficiencies from structured processes and having a well communicated common vision; and many more examples.

The key is to think about:

What are the most important outcomes you want Asset Management to achieve for your organization?

Once you understand this, define appropriate metric(s) then start measuring and tracking what is happening.

You should want to satisfy yourself that you are still on track to deliver on the conceptual promises and reasoned logic that started you on this journey, or to know when results aren't happening so that you can change your approach to get back on track. Proving the real tangible benefits of Asset Management to others after you have proved it to yourself will become the easy part.



Upcoming Events

Local Government Management Association

June 21 - 23, 2016

Annual Conference

Convention Centre Nanaimo BC

www.lgma.ca

Government Financial Officers Association of BC

August 21-25, 2016

Municipal Finance Officers Boot Camp

University of Victoria, Victoria BC

www.gfoabc.ca

Public Works Association of BC

September 18-21, 2016

Annual Conference and Trade Show

Sun Peaks Grand Hotel & Conference Centre

www.pwabc.ca

Union of British Columbia Municipalities (UBCM)

September 26-30, 2016

Annual Conference

Victoria Conference Centre

Victoria, BC

www.ubcm.ca

Canadian Network of Asset Managers

May 15 – 18, 2017

11th Annual Networking Conference and Workshops

Hyatt Regency

Calgary AB

www.cnam.ca

Planning Institute of BC

May 30 – June 03, 2017

Annual Conference

Prince George, BC

www.pibc.bc.ca

BC Water and Waste Association

May 27 – 30, 2017

45rd Annual Conference and Trade Show

Victoria, BC

www.bcwwa.org

Federation of Canadian Municipalities

June 1-4, 2017

Annual Conference and Trade Show

Ottawa Convention Centre

www.fcm.ca

Questions & Answers

We strongly encourage you to raise questions and make comments as this newsletter is provided for the advancement of Asset Management. Email questions or comments to the editor and note if you wish to be anonymous or not to have comment published.

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