



Asset Management Newsletter

EIGHTH EDITION – SPRING 2013 ISSUE



Feature Article: Government of Canada to Make Record Infrastructure Investment

Infrastructure Canada

The Government of Canada's Economic Action Plan 2013 delivers a New Building Canada Plan, with a commitment of \$53 billion, including over \$47 billion in new funding, over the next 10 years.

The New Building Canada Plan has three main components:

- **Community Improvement Fund** - \$32.2 billion consisting of an indexed Gas Tax Fund and the increased GST Rebate for Municipalities to build roads, public transit, recreational facilities and other community infrastructure across Canada that will improve the quality of life of Canadian families.
- **New Building Canada Fund** - \$14 billion in support of major economic infrastructure projects of national, regional and local significance.
- **Renewed P3 Canada Fund** - \$1.25 billion to continue finding innovative ways to build infrastructure projects faster and provide better value for Canadian taxpayers through public-private partnerships.

The indexed Gas Tax Fund means an additional \$1.8 billion over 10 years for municipalities, for a total of



\$21.8 billion in stable, predictable funding for local infrastructure priorities. Currently \$2 billion per year, these payments will be indexed at 2 per cent per year, starting in 2014-15, with increases to be applied in \$100-million increments.

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The Government of Canada also announced that it would provide municipalities with additional flexibility around what kinds of projects could be funded by the Gas Tax Fund under the new plan. It will provide funding for infrastructure projects crucial to communities such as drinking water, wastewater management, public transit, roads, broadband communication systems, highways and projects supporting culture, tourism, sport, and recreation.



In British Columbia alone, the Gas Tax Fund has supported close to 2,000 projects! These investments have improved the quality of life in communities across the province by contributing to cleaner air, cleaner water and reductions in greenhouse gas emissions.

For more information on the Gas Tax Fund and the New Building Canada Plan, please visit www.infrastructure.gc.ca.

One of the local examples of this is in the City of Victoria where 10.7km of brick storm sewers built in the 1860s are at risk of emergency repair. An asset management approach is being taken whereby the existing system is being assessed, inventoried and the areas that have the greatest risk are being replaced. The project uses a trenchless liner system that builds new secure sewers within the existing lines, which reduces the impact on the local community resulting from construction. The completed project promises to reduce the risk of service loss, property damage and environmental harm due to aging infrastructure.

Glen Brown Wins Award from BCWWA



The Award of Excellence – Individual, in the Water & Waste community, was given to Glen Brown, Executive Director, Local Government Infrastructure and Finance, Ministry of Community, Sport and Cultural Development by

BC Water and Waste Association. The Award was presented at the annual conference in April in Kelowna.

Glen has made major contribution to sustainable management of water and wastewater infrastructure. His leadership has had substantial impact on the improvement of community water services across the Province.

Besides recognition of BCWWA, Glen is a driving force behind **Asset Management BC** and the partnerships built to address the aging infrastructure in our communities. From all participants and partnerships in our practice area of **Asset Management BC**, congratulations on a job well done to a very deserving award recipient.

What is our Infrastructure worth?

As of 2009, our communities were required to report their asset value of municipally owned infrastructure on their financial balance sheet. This information was generated via the Public Sector Accounting Board accounting standard PSAB 3150. Local governments, some for the first time, gained a comprehensive inventory of their assets by category, some indication of condition and, in accordance with the accounting standard, the historical cost value of those assets.

Each year, local governments must submit their financial statements to the Province. So, starting with the 2009 financial statements, we have access to aggregated historical costs based on asset information from all our municipalities and regional districts across the Province. Few local governments know their total replacement value or the condition of their assets, and stemming from that their infrastructure gap.

Here is what we know based on the published information. The net historical reported value of assets for all municipalities in BC is \$37.2 billion, if we include regional districts the results is \$46.0 billion. To date, we have two communities who have provided 2012 replacement values based on PSAB 3150 inventories and referenced that value as a factor to asset net book value. Those factors average 4.4 times for those municipalities of current net book value. Applied province-wide that would suggest a replacement value just short of \$175 Billion. Clearly this is insufficient data to produce meaningful results but what if all

municipalities had a current replacement value for existing assets?

Our challenge is threefold:

- Learn to understand what this information means and how to use it to our best advantagewatch for future articles
- Land value is not just land but includes depreciable assets such as golf courses, parks infrastructure and this poses a problem if we are focusing on infrastructure sustainment.
- Predict what replacement value is for depreciable assets and, again, learn to understand the value and limitation of this information.

Have you calculated an estimate of your built infrastructure replacement value? Can you add to this dialogue to help us all understand the usefulness and interpretation of the data?

So the challenge to you is to help us all with your thoughts and comments. Let us know what you did, how you did it and what the results are. Send information to info@assetmanagementbc.ca and we can continue the discussion.

Update on AMBC

Asset Management BC is a “Community of Practice”. The Working Group comprises a group of partners through Associations, all forms of local governments in BC, the province, Aboriginal Affairs and Northern Development Canada, and First Nations.

The Associations partners represent all our political, administrative, technical, and financial skill sets required to integrate all activities and disciplines related to our built environment and community assets. Most recently we are pleased the Municipal Insurance Association of BC has become a partner as their interest is also risk assessment and criticality of infrastructure.

With the retirement of Tom MacDonald from the Local Government Management Association, Nancy Taylor, Executive Director, is now part of the working group. Joining the group shortly is Tanja McQueen, Chief Executive Officer of BC Water and Waste Association. Tanja assumed this role with the retirement of Daisy Foster. Our co-chair David Allen is now the CAO of the City of Courtenay. A complete list of AM BC partners is on our website at www.assetmanagementbc.ca

Asset Management BC is busy redoing our website to bring you improved resources, reviewing and updating the sample asset management policy, organizing a fall workshop in the Vancouver area and continuing to publish this newsletter. New projects include understanding the financial data from balance sheets and using the information, barriers to asset management in our communities, how do we deal with levels of service, and the language of asset management. These are aimed at giving our communities the resources to move forward with their asset management programs and to effectively communicate the results at all levels.

We continue to make presentations at conferences and this year and this has included a presence at Government Financial Officers Association of BC, Canadian Urban Institute, Union of British Columbia Municipalities, Public Works Association of BC, BC Water and Waste Association and Canadian Network for Asset Managers.

Fall Workshop – October 2013

Asset Management BC will be hosting a fall workshop in mid-October, in the Vancouver area. Marie Lemay, Associate Deputy Minister of Infrastructure Canada has committed to be our keynote speaker. With the renewal of the Building Canada Fund and the need for sustainable funding, new agreements with the Provinces are in the works. Gas Tax funding has been renewed and is now enshrined in legislation. It will be timely to have Marie Lemay address where the federal role is going and what our communities can expect.

Asset Management BC is working on a number of issues including approaches to levels of service, risk and criticality of infrastructure, barriers to asset management and communicating the message in clear simple terms. The program will focus around integration of asset management skills and activities in our communities, how to approach levels of service, long range financial planning and to bring it all together, ‘communicating the message’. We hope we will see you there.

Watch for further announcements.

www.assetmanagementbc.ca

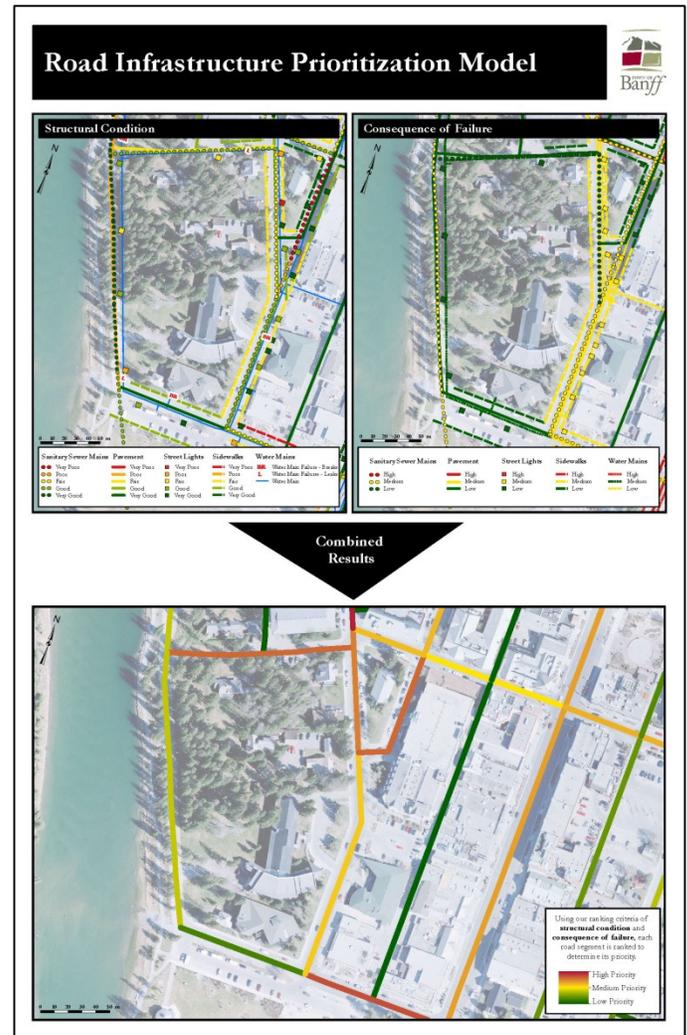
Case Study: Size Doesn't Matter: The Town of Banff's Award Winning Approach to Asset Management

Banff National Park, a UNESCO World Heritage Site, is recognized around the world for its spectacular Canadian Rocky Mountain scenery, pristine wilderness, wildlife management and outdoor adventure opportunity. The Town of Banff (pop. 8,244), one of only two incorporated municipalities within a Canadian national park, has served as the park's visitor centre for 128 years. Banff may be internationally famous, but it is still a small Canadian town. The National Park Act and the Town of Banff's 1990 incorporation agreement limit the physical boundaries of the community, along with the amount of commercial development permitted and the maximum population. These growth management principles are entrenched in Banff's Community Plan which outlines the goals of environmental stewardship, growth management and economic sustainability. Thus, maximizing infrastructure effectiveness while minimizing environmental impact is paramount to the Town of Banff.

The Town of Banff recognized the value of asset management to achieve these goals and has been thoroughly gathering records and data on infrastructure and inputting it in a GIS format, so that a complete picture could be formed of the Town's significant built assets – its pavement, sewers, watermains, streetlights and sidewalks. In the next step, the Town developed, in-house, an innovative, yet low-cost model, to identify and prioritize infrastructure rehabilitation and replacement.

The GIS-based prioritization model calculates a score per road segment using structural condition and consequence of failure of the five built assets. It ranks the five assets against each other within each road segment and then ranks each road segment against one another to provide a comprehensive and complete understanding of the current state of Banff's built

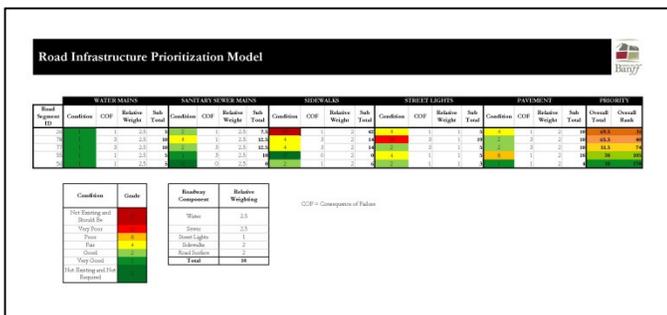
assets. Infrastructure replacement projects were then established using the total score. This approach is being applied to every segment of road infrastructure and utilities in Banff, making it an indispensable decision-making tool for management and elected officials. The attached table and map shows a sample of the model.



To further improve results obtained from the prioritization model, an approximate cost to replace the existing infrastructure for each road segment was also determined using a specialized cost estimating system that was also created in-house. The integrated system uses precise quantities obtained from a preliminary design, current unit rates, contingencies and it takes into account inflation to ensure the long-term budget is allocated appropriately. In turn, it increases confidence in the budgetary process between administration and the elected officials.

The prioritization model maximizes the lifespan of infrastructure by determining the best time to schedule replacement, while minimizing the capital expenditure. It enables the Town to coordinate projects, improve record keeping and simplify long-term financial planning. In fact, the model in conjunction with the cost estimating system has already reduced expenditure by 5 percent over its 10-year capital budget.

The model is flexible, and the Town of Banff is currently implementing modifications and improvements. These include the addition of new criteria, such as a weight value to represent the implication of different land use districts and design guidelines. Storm sewer mains will be incorporated in the model as another infrastructure type. Performance predictions, based on age and condition, as well as an infrastructure risk assessment, are also being incorporated as data is collected.



The prioritization model can be adopted by other local governments and customized to reflect different extents of infrastructure asset data. It can be implemented with little resources, and at low cost, as the Town of Banff has proven. Whatever the footprint, population, capital and operational resources, the benefits of asset management can be maximized through our prioritization model. And just as the Town of Banff shares its beautiful little town with over three million visitors annually, they are happy to share their asset management experience with other Canadian municipalities, small or large.

Pierre-Hugues Gagnon,
 Asset Management Co-ordinator, Town of Banff
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Asset Management in Northern Communities, NWT

In 2012 Municipal and Community Affairs (MACA) North Slave Region put strong focus on the importance of asset management and worked with the community governments within the region to build the asset management plan and process. Community Government of Gameti took a lead role in this project. Their initiatives led to collaborative efforts with Lutsel’ke Dene Frist Nation and Community Government of WhaTi and Wekweeti. These communities are all now working on developing asset management plan.

Gemeti: Gameti is located at [64°06’44’N 117°21’13’W](#), 177 air km northwest of Yellowknife. Rae Lake, also name as Gameti .It originated from a hunting camp established by Dogrib people to pursue a traditional lifestyle. It became permanent after the construction of Community Hall, Store and Air strip in early 1970. [Population: 320, Transportation: winter road and by air.](#)

Wekweeti: Wekweeti (formerly called Snare Lake) is located at [64°11’N, 114°11’W](#), 195 air km north of Yellowknife. Wekweeti was an outpost hunting camp until 1962. [Population: 141, Transportation: winter road and by air.](#)

Lutsel’ke: Lutsel’ke is located on the East Arm of Great Slave Lake at [62°24’N and 110°44’W](#), 201 air km east of Yellowknife. [Population: 292, Transportation: By air and barge.](#)

WhaTi: Whati is located on Lac La Martre at [63°08’N, 117°06’W](#), 164 air km northwest of Yellowknife. Although the Northwest Company established a permanent post at the site in 1793, trade continued to centre on the larger and more established posts at Rae and Wrigley. A federal school was built in 1955. [Population: 519, Transportation: winter road and by air.](#)

This project is a perfect example of innovations & creativity, exceptional performance, Leadership & partnership with MACA and communities. The implementation of asset management in the participating communities is supported by a maturity framework based on national and international best practices along with innovative decision support software that allows each of the communities the flexibility to create their own best practices to support

community infrastructure asset management. At the introductory workshop each participant completed an asset management capability self-assessment based on the maturity framework. This assessment measured existing and future asset management capacity on 5 point scale ranging from Awareness to Development, Implementation, Integration and Excellence. This establishes both 'where we are now' and 'where we would like to be' with respect to asset management for each community. In the future, participants can continue to use the assessment to measure their progress toward achieving excellence in asset management. The workshop format brought together community representatives from council, administration, finance and operations each of whom has a role in service delivery and asset management in their respective community. Through implementing organizational strategies and business processes based on the asset management maturity framework best practices, project participants are continuing to demonstrate their commitment to organizational and leadership excellence in delivery of services for each of their communities. The initial project partnership saw the overall costs shared among the participating communities thus lowering the overall costs to participants.



In 2013, Senior Administrative officers of Gameti, WhaTi, Wekweeti, Lutsel K'e and MACA met together in Yellowknife on May 17th to discuss about training plan. Training for these communities will be ongoing.

New addition to Asset Management team, Deattah, NWT community also expressed their interest in asset management for community infrastructure. Community council approved the asset management project in this year capital plan.

This year, we also had opportunity to do a presentation during the CNAM (Canadian Network Asset Managers) Conference in Edmonton to show our communities progress in the area of asset management.

For more information please contact Sudhir Kumar Jha, Manager, Community Infrastructure Planning, Yellowknife, MACA-GNWT at 867-920-8082.

The Birth of CNAMpedia

CNAM has unveiled the user Knowledge Base called **CNAMpedia**. This powerful web resource is hosted on CNAM.ca and was developed as a member-only benefit to give members access to hundreds of documents related to asset management for facilities, parks & forestry, roads & transportation, solid waste, storm water, transit, water systems and other asset classes. In addition to shared municipal / provincial documents and reports. Members have access to a library of asset management articles and editorial features from Public Sector Digest and ReNew Canada magazine.

The **CNAM** Board of Directors worked with Riva Modeling Systems and the City of Hamilton to build this Canadian asset management encyclopedia. Ian Woodbury, CEO of Riva said *"We are pleased to be contributing the software and hosting for this important step in transforming **CNAM** into an interactive knowledge community."* **CNAMpedia** is free to CNAM members and contains specialized website links, international best practices, technical manuals, analytical reports and more. – all easily referenced, scanned and retrieved.

CNAMpedia addresses a key priority, *"to contribute to the development of the Asset Management Body of Knowledge (AMBOK)"*. The Board of Directors is proud to provide this service to our members and hope you will log on, view the library and then upload your own plans and documents to the database so all members can share, learn and enhance the practice of asset management in Canada. For membership and log-on information contact **CNAM** through www.cnam.ca

Successful CNAM Annual Conference Held in Edmonton

Over 200 delegates from across the country gathered in Edmonton on May 5 – 8 for the 7th annual Canadian Network of Asset Management Conference. Hosted this year by the City of Edmonton, delegates were treated to a full agenda that included numerous site tours such as to the Commonwealth Recreation Centre and the Waste Management Facility. The other, less asset management related tours included a ride through the river valley on Segways and a trip to the West Edmonton Mall - which was the most popular by far.

The feedback from sponsors, exhibitors and participants this year has been very encouraging and will help CNAM build the event in future years. Post event surveys showed 100% of delegates felt that the conference either met or exceeded their expectations and 80% felt that it provided value for money.

“A lot of great topics and presenters. A notch above previous conferences. The panel discussion was great and offers great potential for future conferences.” – CNAM member

The conference success can also be measured by the level of volunteer engagement. “We were astounded by the number of City employees offering to volunteer at the conference,” says Bradley Leeman, Acting Director of the Office of Infrastructure and Funding Strategy and Vice-Chair of CNAM. “With their enthusiastic participation, we were able to showcase the City professionally and make the delegates feel welcome and engaged. I would like to thank all volunteers and their supervisors for their generous donation of time and for their efforts throughout the conference.”

Asset Management BC was well represented at the conference with Andy Wardell, Co-chair as our official representative and speaking on a panel with the AM BC update plus networking with other like groups. Representation from other BC communities including our CNAM Director from Prince George Frank Blues helped our communities progress their asset management program.

The 2014 CNAM 8th annual conference will be in Toronto in May 2014. A ‘Call for Papers’ has been issued closing September 30, 2013. See list of events for details.

MMCDA Announces Data Register

The Asset Management Data Register (AMDR) is designed to assist local governments in BC to adopt a standard approach for asset management including as-builts.

What does it do? It will:

- Identify attributes required for financial management, condition assessment, performance monitoring, risk management and demand management, as well as replacement and renewal decision support
- Define a data model for a standardized asset management relational database, so that it can be utilized by a variety of software vendors and local governments in implementing product development and strategic information plans
- Identify best practices for the collection of infrastructure data
- Conduct a risk assessment for local government assets using BC Emergency Planning templates
- Recommend standards and processes for post construction record submissions
- Produce standardized reports, aggregated at the local, regional and provincial level, based on agencies subscribing to a standard asset management register

The MMCDA Asset Management Data Register Project downloads, documents, instruction videos and presentations are available in the MMCDA AMDR rGuide.

The primary deliverables for the MMCDA AMDR include:

1. Infrastructure Data Schema for MMCDA infrastructure data
2. Infrastructure Data Management Utility

You can register for the MMCDA AMDR rGuide using the following link. You do not need to register again if you have already registered with a valid government or company email address.

Please note that you must use a valid company or government email address in order to register for the MMCDA AMDR rGuide.

<http://apwcts.rguidelibrary.com/UserRegistrationForm.spr?groupid=4575> Registration code = **MMCDAAMDR**



1. From a purely operational perspective one pump was sufficient to push the required volume of water up to the treatment plant therefore the second pump was viewed as 'desirable' but 'not critical'.
2. The recorded risk rating for the pump(s) was low, and no indication was given that this low rating depended on there being two operational pumps at that station. There was no measure of the importance of the second pump or what the risk rating would increase to if the second pump failed.

The operator had noted in his regular report about the malfunctioning pump, but the matter was not treated with the appropriate urgency. There was no sense of urgency and the matter was not brought to the attention of someone who could authorize the funds for the repair work.

Had both 'potential' and 'residual' risk been recorded and communicated to the operations staff, they would have known how important it was to have both pumps in operational order. The increase risk to the townships water supply in this case was very significant. The town did not have sufficient treated water storage so the continuity of supply for both typical water usage and reserves for firefighting, was heavily reliant on the pump(s) at the station.

When you know how important or unimportant various mitigation measures are, you can put in place appropriate management procedures. This is an essential component sometimes overlooked in 'risk management'.

There are several ways that an organization can use to determine 'potential' and 'residual' risk values and in doing so, identify the amount of change in risk attributable to the mitigation measure. This degree of change is a measure of how important the mitigation measure is.

If your organization already has a risk rating system you would simply rate the asset assuming not mitigation measures are in place and then rate it with the mitigation measures.

However, if you do not have a risk rating system, or haven't formally considered risk rating as yet, you can still do a quick analysis to identify the types of mitigation measures that should be actively managed.

Using your engineering judgement, practical experience and knowledge of your assets, you can establish some 'rule-of-thumb' values for typical mitigation measures. The following table was developed by collaboration between operational staff and engineering design staff for the water, sewer, and stormwater networks of a municipality.

The 'coefficient' values in the table represent their assessment of the percentage by which risk is reduced when these mitigation measures are in place. A value of 0.4 therefore represents a 40% reduction in risk.

Tips and Tactics: Risk Mitigation

By Bernadette O'Connor

In the assessment of risk, it is quite common for current mitigation measures to be included in the evaluation of 'current risk'.

If this is done, then the resulting score or rating should more correctly be reported as 'Current Residual Risk'. In these cases, the 'potential risk' that occurs if the mitigation measure be removed or fails, is often hidden from view. This can result in the mitigation measure not being monitored or managed in an appropriate way.

Take for example a pump station that has been rated as a low risk because it has two pumps that typically operate with one in 'duty' mode and the other on 'stand-by'. We can be lulled into a false sense of security if the only risk rating we have record is the 'residual (mitigated) risk'. For this reason it is important to record both:

- the 'potential (unmitigated) risk'
- the 'residual (mitigated) risk'

The value or importance of the mitigation measure is then visible and appropriate management procedures put in place depending on how reliant the service is on that mitigation measure.

The need to do this was highlighted to me when I was doing a public health risk assessment on a number of small water supplies. I was inspecting a water intake pump station and checking the pump log book, discovered that the stand-by pump had not been operated for 6 months. When I made enquiries I learned that the pump had started 'making noises' and so the operator had stopped the usual rotation of 'duty' and was using just the one pump.

There seemed to be no real urgency on the repair or replacement of the other pump because of two key factors;

Type Description of Generic Mitigation Measures

	Mitigation	Coeff
1	Standby equipment provision - e.g. standby pumps	0.4
2	Power Supply back up via generators, back up batteries (UPS) for alarms	0.4
3	Bypass Capability within WWTP	0.35
4	Standby/alternate service route - e.g. loop based water supply capability through multiple routes	0.35
5	3 Monthly Preventative Maintenance program	0.35
6	Spare equipment on-site	0.3
7	6 Monthly Preventative Maintenance program	0.3
8	Material of construction - higher than the requirement	0.3
9	Provision of emergency storage	0.3
10	Equipment replacement schedules implementation	0.3
11	Installation of diversion systems - e.g. storm diversion	0.3
12	Annual Preventative Maintenance program	0.25
13	Additional operating capacity available	0.25
14	Regular reporting of equipment condition	0.25
15	Real time equipment/process monitoring	0.2
16	Equipment selection with less moving parts	0.2
17	Weather protection	0.2
18	Administration measures - use of Quality control procedures to operate facilities	0.2
19	Implementation of Best Industry Practices	0.2
20	Implementation of source control measures - e.g use of screens to reduce blockages	0.2
21	Installation of electrical power surge protection	0.2
22	Regular training to Operators on equipment operation and failure modes	0.2
23	2 yearly Preventative Maintenance program	0.15
24	Process automation	0.15
25	Use of appropriate sensor indicators that may eliminate failures	0.15
26	Self-cleaning systems in place	0.1
27	Availability of on-site maintenance staff	0.1
28	Availability of operations and maintenance manual on-site	0.1

This table allowed the organization to put in place appropriate procedures to manage their existing mitigation measures even though they had not done any formal risk rating of their assets.

In addition to this, the collaboration exercise itself was of tremendous value. It highlighted for the participants, the importance of mitigation measures and increased their awareness of risk issues.

It was not a difficult task and it served as a proactive interim measure while they awaited the funding and time availability to do formal risk rating. All it took was two half day workshops and some time for review and feedback.

Upcoming Events

Public Works Association of BC

September 16 – 18, 2013

Annual conference and Trade Show

Conference Centre - Nanaimo BC

Training Course – PWABC

INFR 1120 April 25 – March 1, 2013

INFR 1110 April 8 – 12, 2013

INFR 1130 May 6 – 10, 2013

www.pwabc.cpwa.net

Union of British Columbia Municipalities

September 16 – 20, 2013

Annual Convention and Trade Show

Convention and Exhibition Centre, Vancouver BC

www.ubcm.ca

Asset Management BC

October, 2013

Fall Workshop, Vancouver BC

www.assetmanagementbc.ca

Details to follow



Asset Management Newsletter

EIGHTH EDITION – SPRING 2013 ISSUE



Asset Management: Questions and Answers

Responses provided by Editorial Panel

Note to Readers: You are invited to email questions or comments to Asset Management BC or to the editor – see final page - and you can note in your email whether you wish your comment or question to be published.

Raising questions and making comment are strongly encouraged as this newsletter is provided for the greater good of all types of Local Governments and Agencies managing infrastructure and for the advancement of Asset Management within the Province.

It is usual that the answer to one person's question will be of use to many. Therefore publication of these will not only be helpful but can also generate productive discussion on a topic and sharing of different perspectives that may otherwise have not been identified.

Coming in the Next Edition:

- What does PSAB data tell us and how to use it?
- Where will the money come from – a look at programs and sources
- Level of Service - What it means
- Asset Management progress

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