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

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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".

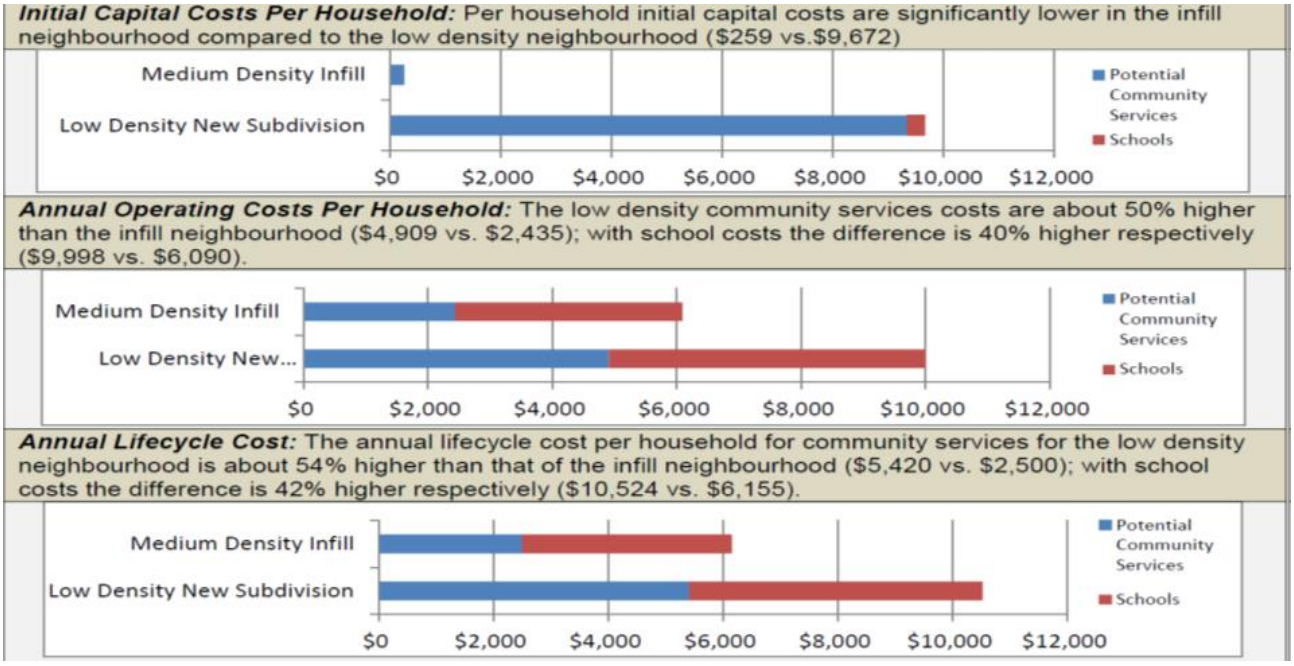
How can local governments change the Titanic course?

- **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.