



# A Holistic Approach to Asset Management

BY RUSSELL CROOK, SR/WA AND NORAH PRIOR

As more and more cities face shrinking budgets and urgent growth-related projects, the importance of managing asset funding, risk and condition has never been more critical.

In 2006, the City of Red Deer, a mid-sized municipality in Western Canada, recognized that the upcoming legislation from the Public Sector Accounting Board (PSAB) presented a unique opportunity for the City to tackle one of its emerging priorities - asset management.

Canada's PSAB directive 3150 is similar to the U.S. Government Accounting Standards Board statement 34, in that both require local governments to report on the value of their infrastructure assets.

## An Emerging Priority

From the Red Deer perspective, instituting an asset management program would provide the opportunity to scrutinize and improve current processes and practices. In addition, the City knew that a program could reduce barriers between departments and help management and staff to gain a better appreciation of each other's issues around assets.

The City identified three major components needed for asset management. The first included data collection, reporting and asset registry, which would facilitate the ability to collect data, develop and operationalize the data collection process. The second was work management, which would provide the ability to track assets, improve processes, manage workflow and improve tactical decision-making. The third was development of the asset management plan. It would be designed to set standards and practices, measure progress, manage risks, plan for future operating and capital budgets, support tactical and strategic decision-making, and institutionalize processes, practices, policies and procedures to address gaps in the system.

Red Deer set out to establish an asset management initiative modeled on international practices. In 2006, the City decided to retain a consulting firm to assist in defining and implementing an asset management strategy. A fund of approximately \$2.9 million was established to support the estimated project budget. The City then established a corporate steering committee comprised of senior representatives from each asset intensive division, including finance and information technology.

The project charter established the objectives and mapped out the three major components of the Enterprise Asset Management Project (EAM). These included the PSAB, the work management system, and asset management plans.

### 1) PSAB

- Create an accurate registry and valuation of all City-owned assets

### 2) Work Management

- Review existing business processes related to asset acquisition and maintenance
- Establish corporate standards to ensure consistency in identifying, measuring and tracking assets
- Modify current processes to ensure adherence to corporate standards
- Adapt existing processes to improve operational effectiveness and efficiency
- Standardize and integrate asset datasets

### 3) Asset Management

- Deploy analysis tools, including GIS integration, to permit short and long term asset planning

## The Strategy Unfolds

In 2007, several PSAB workshops were held while a gap analysis was completed. As the City was focusing its attention on developing the overall asset management program, the PSAB initiative took precedence throughout 2008. By early 2009, the functional specifications for work management and decision support were developed, before the remaining elements of the asset management program could be addressed. The next step included the task of implementing the gap analysis roadmap and long-term asset management plans and forecasts, followed by developing emerging policies and organizational awareness of asset management.

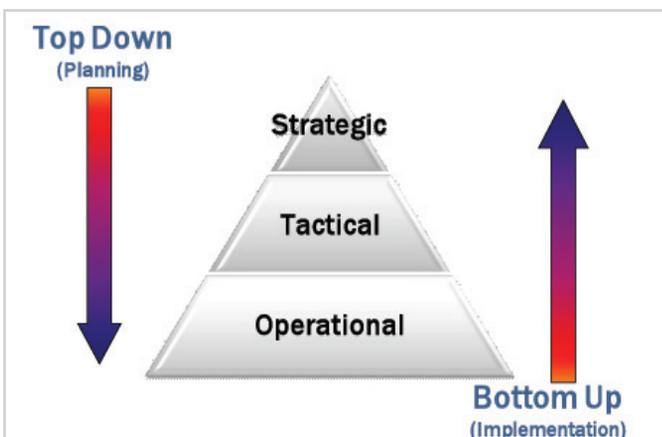
Comprised of two major components, the strategic plan included a gap analysis and a long-term asset management plan with financial forecasts. The gap analysis employed a series of workshops to develop the business drivers, and a methodical assessment of the City's competencies was conducted for each major asset type, including pavement, bridges, sidewalks, streetlights, linear water, sanitary and storm, water and wastewater treatment plants, reservoirs, lift stations, booster stations, piping, recreational and civic facilities, and electric light and power.

The asset management plan and 100-year financial forecast focus on best management practices and related costs for each asset type based on maximum effective life, condition and risk. The plan profiles the asset from the perspective of asset register, levels of service, lifecycle analysis and demand for new infrastructure.

A top-down strategic approach was implemented, where executives led the initiative with strong support from senior management at all levels. Figure 1 illustrates the three levels of planning required for an asset management strategy. The EAM Project addresses all three phases from both a planning and implementation perspective:

- Strategic (50+ years)
- Tactical (2-10 year timeline)
- Operational (Annual day-to-day)

Figure 1 – Strategic Planning Framework



## The Gap Analysis

The goal of a gap analysis is to determine how well an organization is performing against best practices and identify gaps where practices and other elements can be improved, which in turn will improve the quality of the plans. The gap analysis examined the competencies of the City's practices for the six key elements outlined in Figure 2, which contribute toward developing the long-term asset management strategic plan.

Figure 2 - Gap Analysis Elements



## Corporate Improvement Projects

The gap analysis roadmap identified improvement projects at both the corporate and departmental level in Red Deer. At the corporate level, improvements were identified that would impact every division/asset, and a policy, standard or guideline was implemented to facilitate a consistent approach.

One of the foundation projects was to establish a customer/stakeholder survey methodology to more effectively determine and measure levels of service. Another recommendation was to implement a corporate work management solution, while a third focused on the recruitment of a full-time Asset Management Program Coordinator, a position that was activated in Red Deer in 2008. The departmental and asset specific recommendations focused on developing a capital improvement program justification process and asset lifecycle analysis/decision-making process. Altogether, the gap analysis identified 30 to 40 areas of improvement, including some that were overarching and others that were specific to one or more asset types.

In addition to the foundation projects cited, the recommendations also included the appointment of asset stewards, which was accomplished through the PSAB initiative. A corporate awareness and communications program, now overseen by the Asset Management Program Coordinator, focuses on education and awareness sessions through presentations to the senior management committee and at divisional management meetings. Corporate communications has also supported the need to promote the program by developing new brochures and publishing articles in various publications.

## Departmental Improvement Projects

At the departmental level, Red Deer identified six projects, some applying to specific assets, but generally requiring improvements to all asset types:

- Document current levels of service and demand
- Enhance asset registers (broaden attributes) to provide a single source of comprehensive information about the asset
- Complete historical and replacement cost asset valuations
- Implement risk, strategic lifecycle planning and capital improvement program practices
- Implement work management practices and software
- Where appropriate, align rate models to the long term forecast and plans

Of the six departmental projects, two are already well underway - asset registers and work management. Through the PSAB initiative, new asset registers have been compiled, and while not yet considered databases, the City now has complete inventories for civic and recreational facilities. The opening inventory of assets

is completed, and the work management solution will go live in April 2010 with linear water, wastewater and storm.

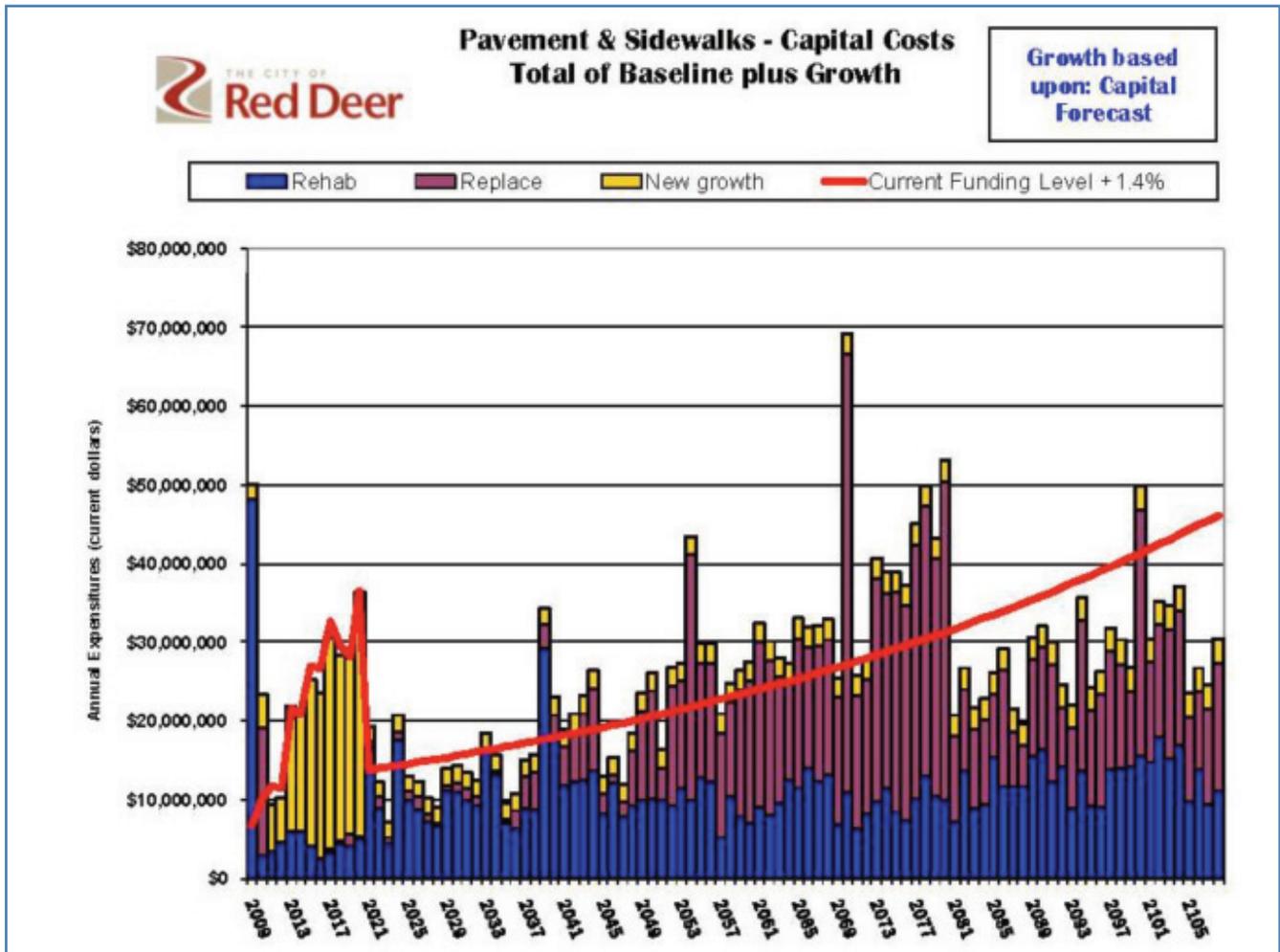
## Asset Management Plans

The gap analysis addressed the six elements of asset management leading to the development of longer term asset management plans. Red Deer is in the process of developing each of five strategic asset management plans. The first four are in different stages of development and are due to be completed by spring 2010. All five plans are slated to be completed by May 2010, leaving the City with a full rollup on their infrastructure requirements in 2009 replacement dollars.

The five plans are asset specific and organized as follows:

- 1) Right of way transportation assets (pavement, sidewalks, bridges/culverts, traffic signals, streetlights, signs and markings)
- 2) Linear water, sanitary and storm
- 3) Water and wastewater treatment plants
- 4) Civic and recreational facilities
- 5) Electric light and power

Figure 3 – 100 year Forecast



## Project Funding

For the funding process, the City used 100 years as the baseline. The plans show funding required for:

- Rehabilitation and replacement of current inventory
- Growth of infrastructure inventory at rate of 2.3% to 2019, 1.4 % from 2020 to 2059, and 1.0% to 2109
- Rehabilitation and replacement of current inventory plus growth over 100 years (Figure 3)
- Impact on condition using percentage increase over existing budget versus staying at the current level
- Risk profiles based on the probability/consequences of failure and redundancy where relevant

## A Wake-Up Call

From the outset, the Asset Management Steering Committee has been the most significant factor in the success of the asset management initiative. Comprised of senior managers from across the City, the committee meets biweekly to review progress, prioritize work activity, allocate resources, coordinate responses to each of the three major components, discuss challenges, and generally maintain the momentum of the overall program. It is through the steering committee that cross-organizational teams have been created for asset accounting, work management and asset management.

The asset management planning activities act as a wake-up call to asset managers and finance staff alike regarding asset funding, risk and condition. Out of the storm management workshop for example, it suddenly became a high priority to assess and replace the old clay storm water pipes in the downtown before inevitable collapse. Red Deer is one of a handful of jurisdictions who now monitor their storm water infrastructure. It has a new cleaning and inspection program based on levels of service, which was initiated in 2009 and is currently underway.

In the short term, the asset management program has reduced barriers between departments and helped management and staff to gain a better appreciation of each other's issues around assets. Looking at asset management from a corporate point of view has resulted in considerable synergy. Through the efforts of the Asset Management Program Coordinator and the communications plan, education and awareness is on the upswing. People are now talking about assets and asset management in the context of their day-to-day activities.

There is a growing realization that the City must plan to properly manage its assets despite the increased urgency and profile of growth related activities, as well as shrinking budgets. In the long term, the program will provide the vast range of information to support effective decision-making about asset management.

## Lessons Learned

The City and consulting team both believe that the success of the asset management program stems from the fact that was a top down, executive-sponsored initiative, with strong support from senior management at all levels. The program also benefitted from a high corporate profile, as it was one of the City's five priority initiatives identified since 2007.

To date, the City has completed the PSAB strategy and initial valuation, a gap analysis of asset processes, practices, data and systems for all eight major asset categories, the development of specifications for work management and decision support systems, and the subsequent selection and project initiation. The City has initiated the development of all five long-range forecasts and asset management plans scheduled for completion by May of 2010. Right of way components of the plan include pavement, bridges, signals and sidewalks, linear water, sanitary, storm, water and wastewater treatment plants, civic and recreational facilities, and electric light and power.

On the organization side, the project was initially managed by the asset management steering committee, who instituted regular meetings to keep the program on track. Asset stewards were identified for major asset portfolios, and cross-divisional teams were established for the work management selection and implementation. Today, the Asset Management Program Coordinator is managing the overall program.

Municipalities are now intimately familiar with the requirements of the PSAB legislation, and to a large extent with the need for work management solutions. The demand for policies, procedures and business analysis in these areas was the primary focus of local government in 2008-2009, as municipalities worked to achieve PSAB compliance, at the same time offering their operations management incentives to stay with the program.

There is widespread demand for work management solutions for those who lack them, and an emerging interest in the longer term strategic aspects of asset management planning. It is in this area that Red Deer has moved ahead of most of its peers.



### Russell Crook, SR/WA

*Russell has a diverse background in municipal operations and is focused on demonstrating value to taxpayers from enterprise asset management programs. Working for the City of Red Deer, Alberta in Land and Economic Development, he oversees the Enterprise Asset Management Program.*



### Norah Prior

*Norah is President and a principal of Prior & Prior Associates Ltd., founded in 1980 to provide technology consulting services. With expertise in the provincial and municipal sectors, she oversees project teams, municipal assignments and IT/GIS Strategic Plans.*