

Calgary's Asset Management Strategy



Introduction

A city's health can be measured by the quality of its infrastructure.

Municipal infrastructure is the foundation for a healthy and vibrant city. This includes our roads, parks, transit, water and wastewater systems. Despite proactive past investment programs, the City of Calgary is facing a critical challenge that is common to municipalities around the world.

The City of Calgary has experienced record growth in the past decade. This trend is expected to continue into the foreseeable future. The need to construct new, growth-related infrastructure has made it more difficult to maintain and upgrade our existing, aging infrastructure. While the condition of our municipal assets is rated as being good, on average they are quickly approaching the mid-point of their expected life. Unfortunately, this is the point where maintenance costs quickly accelerate. Further exacerbating the situation is the limited availability of infrastructure funds, cost inflation, increased environmental and safety regulation and increased public service expectations.

All of these issues have resulted in an infrastructure gap – the funding shortfall required to meet Calgary's infrastructure needs. The infrastructure gap over the next ten years is estimated to be \$5.3 Billion. This number only includes the corporate infrastructure needs identified within the upcoming ten-year envelope.

The City of Calgary has risen to the challenge by develop a proactive strategy to effectively manage its asset inventory. This Asset Management Strategy is the foundation for infrastructure best practices that will allow us to provide effective municipal service while balancing smart growth with a sustainable quality of life.



What is Asset Management?

Asset management is not a new concept. The private sector has been optimizing the use of limited resources to balance growth and asset maintenance for some time now. In general, the return on investment for business assets are easily calculated and related to their bottom line. The public sector, though, has struggled to quantify and relate both the tangible and intangible benefits of municipal infrastructure and as such concentrated new spending on the expansion of new infrastructure while neglecting ageing assets. Notwithstanding, asset management best practices can be adopted by municipal governments.

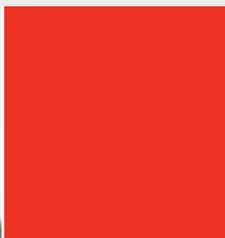
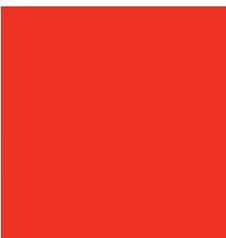
The City of Calgary defines assets to include all physical infrastructure that is necessary to support the social, economic and environmental services provided by the corporation. As such, asset management best practices will include a set of engineering, financial and business tools to Council and senior administration (asset stewards) to balance limited financial resources for the corporation's infrastructure investment based on risk and life-cycle need.

A successful asset management program combines technical practice with sound business acumen and economic theory to facilitate an efficient and justified approach to systemic infrastructure decision-making.

“Asset management is a business process and decision-making framework that covers an extended time horizon, draws from economics as well as engineering and covers a broad range of assets. The asset management approach incorporates the economic assessment of trade-offs among alternative investment options and uses this information to help make cost-effective investment decisions.”

*Vanier, D.J., NRC-CNRC,
Asset Management: “A” to “Z”*

Ultimately, asset management best practices will provide asset stewards the right information to make the right infrastructure decisions at the right time.



Understanding Our Assets

In order to be able to balance asset maintenance and growth, it is fundamental for municipalities to be able to understand the performance of its existing infrastructure. As such, asset stewards must be able to have the answers to five key questions in order to understand what they own and make informed infrastructure decisions:

1. What do we own?
2. What is it worth?
3. What condition is it in and what is its remaining service life?
4. What is the level of service expectation and what needs to be done?
5. What is the gap?

The City of Calgary has identified that the current replacement value (CRV) of its existing assets is approximately \$28 Billion. It has also been estimated that the City's total infrastructure needs, funded and unfunded, over the next ten years is approximately \$13 Billion. As the City has plans to fund approximately \$7.7 Billion in this time, it has been identified that the total ten-year infrastructure gap is approximately \$5.3 Billion. Of that, approximately \$2.8 Billion is attributable to maintenance, whereas the remaining \$2.5 Billion is unfunded infrastructure upgrades or new construction due to growth.

Currently, the City of Calgary spends \$0.5 Billion per year to maintain and upgrade its assets. The various operating areas have identified we should be spending an additional \$0.5 Billion per year on infrastructure maintenance. The National Research Council estimates that municipalities may spend between 2% to 4% of its infrastructure asset value on maintenance each year. Based on the CRV of our existing assets of our infrastructure, Calgary should be spending between \$0.5 Billion and \$1 Billion for annual infrastructure maintenance. The City of Calgary's lower expenditures on infrastructure maintenance can be attributed to its lower relative age. As our infrastructure ages, we can expect that the City's maintenance expenditures will increase significantly.

It is imperative to understand that these estimates are for a high-level illustration of the problem at hand. Calgary's Asset Management strategy is working with the various business units and operating areas to obtain a better understanding of the replacement value of the City's various assets.



Why Adopt a Corporate Asset Management Strategy?

Calgary's municipal infrastructure is the basis for economic, environmental and social activities and thus provides a foundation for economic growth and quality of life. A comprehensive asset management strategy is fundamental in ensuring the maintenance and sustainability of municipal infrastructure which affects all aspects of our lives, including quality of life, health, the environment and public safety. As such, there are many reasons why municipal governments should adopt an integrated, corporate-level asset management strategy.

1. *Municipal infrastructure supports our competitive advantage and sustainable growth.*

Respondents to the 2002 Public Infrastructure in Canada survey noted: "If cities are not able to have adequate infrastructure to provide a superior quality of life for their residents, they will no longer be able to compete in the global economy." Ultimately, an effective asset management strategy will support competitive advantage through the efficient and effective allocation of infrastructure investment and by assisting with a sustainable growth strategy.

2. *The growing infrastructure maintenance gap.* Calgary's physical assets are approaching the 35 year mark in their lifecycle, the inflection point where typically operational and maintenance costs skyrocket. This issue is further exasperated by the maintenance backlog that has been deferred to date. A comprehensive asset management strategy ensures the functionality of assets through time and while planning for the eventual replacement of existing assets.

3. *The link between municipal infrastructure and quality of life.* Many of the resources that Calgarians take for granted, including clean water, sewers and transportation, depend on a well functioning municipal infrastructure. Calgary's reputation as a world-class municipality is being threatened by stringent regulations and increasing public service expectations. An asset management strategy will help asset managers effectively allocate limited budget resources so that Calgarians can continue to enjoy their enviable quality of life.

4. *Asset management supports transparent, rational and accountable infrastructure decision-making.* There is increasing public demand for accountability in the public sector. Many cities, including the City of Calgary, are adopting accountability systems, including long term financial planning and corporate benchmarking programs. By rigorously adhering to asset management best practices, asset stewards will further demonstrate public accountability through effective infrastructure management.

Municipal infrastructure debt weakens Alberta's competitive advantage by constraining economic productivity and quality of life.

(Canada West Foundation, Foundations for Prosperity, Sept 2004).



The City of Calgary's
Asset Management
Guiding Principle:

To optimize infrastructure investment in order to ensure that the City's infrastructure is in a good state of repair and that rehabilitation and development programs are adequately funded.

Asset Management Supporting Principles:

- Strive to be the “best practice provider” by maximizing return on municipal infrastructure investment.
- Ensure an alignment between Council's priorities, infrastructure investment and asset management best practices.
- Continually measure the performance of infrastructure in terms of the effectiveness of meeting the broader social, economic and environmental needs of the city as a whole.
- Approach infrastructure as a long-term investment rather than a short-term expenditure.
- Ensure that infrastructure investment is sustainable and establish a balance between new and existing infrastructure.
- Work towards aligning fiscal responsibility with the private sector and other levels of government.
- Engage the public regarding the importance of municipal infrastructure and level of service standards.
- Advocate the efficient use of our municipal infrastructure through innovation and new technologies.
- Continually evaluate service delivery and infrastructure performance. This would include the benchmarking all aspects of infrastructure service and return in time and with other municipalities to measure continual improvement.



The Essential Elements of an Effective Asset Management Strategy:

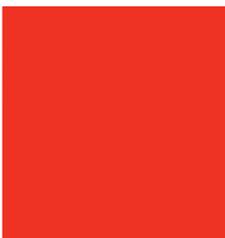
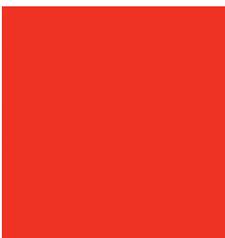
An integrated asset management program relies on the development and continual use of financial, business and technical tools by asset managers and stewards.

Building from the five key questions and the Municipal Infrastructure Investment Planning (MIIP) process (as being developed by the City of Calgary and the National Research Council), the City of Calgary's Corporate Asset Management Strategy will include the following essential elements:

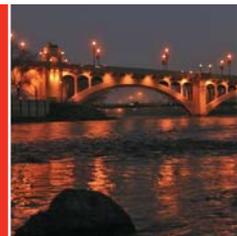
- Establishment of a governance framework. This would include a strategic asset stewardship function within the City of Calgary and formalization of partnerships with the private sector and other government organizations regarding infrastructure investment. Private sector partnerships, in the form of technical advisory committees, have been formed in other municipalities with much success.
- Dedication to asset stewardship best practices and the development of asset management supportive policies. This would include the support other infrastructure initiatives, including the development of national asset management best practices through the Municipal Infrastructure Investment Planning (MIIP) consortium.
- Assist the various operating areas with the establishment of a standardized infrastructure inspection, evaluation and upgrade programs. This will ensure that the City of Calgary maintains an accurate and consistent inventory for all municipal infrastructure and that the information gathered is relevant and renewed.
- Continual infrastructure status reporting and improvement of the accuracy of the replacement values of our assets from a bronze to a gold level. The asset stewardship function will use the information provided by each operating area for the development of annual budgets and infrastructure investment.
- Integrated infrastructure risk assessment framework for all levels of infrastructure decision-making. Asset stewards should understand the acceptable risk tolerance when making infrastructure investment decisions. Risk management can quantify the risk reduction and the resulting benefits and can be included in a cost-benefit analysis during the capital budget process.
- The implementation of asset life cycle costing, including the potential integration of capital and operating budgets for infrastructure investment decision-making.

One of City of Calgary's Asset Management Supporting Principles:

“Approach infrastructure as a long-term investment rather than a short-term expenditure.”



- Strategic financial investment planning, including the development of other financial levers or sources for infrastructure investment. There is opportunity to leverage the work already completed by the corporate Financing Growth team in this respect.
- Linkages to other internal strategic projects, including the three-year budget redesign, the business planning process, integrated risk management framework and accountability (performance measurement).
- Supporting information systems. Many operating areas are developing information technology systems for tactical asset management – is there a need for an overarching system? Furthermore, is there an opportunity to link existing enterprise software programs and tactical asset management programs?
- Development of a public/industry engagement program. It is important to realize that public or industry expectation may dictate service levels.
- Benchmarking to measure infrastructure performance. This benchmarking will provide the standard to which we will measure our infrastructure's performance over time or against other municipalities.



Work Plan:

As the corporate lead for the City of Calgary's Corporate Asset Management Program the Asset Management and Capital Works Department (AMCW), will work with Council and all affected business units towards the establishment of corporate-wide asset management best practices and policies.

The Corporate Asset Management Program will provide the following deliverables to meet the timelines of the corporate business planning and three-year budget project (2005):

- Governance framework (including an industry advisory committee) and asset stewardship best practices (June, 2005)
- Integrated infrastructure risk assessment framework and capital budgeting process (April, 2005)
- Impact assessment of life-cycle costing of infrastructure (June, 2005)
- Infrastructure Reporting Standards (June, 2005)
- Infrastructure Status Report update (November, 2005)
- Recommendations for life cycle costing processes and policy (November, 2005)
- Risk assessment on the existing infrastructure gap (November, 2005)
- Work with various operating areas, other municipalities and other levels of government to develop best practices (ongoing).

The Corporate Asset Management Program will report to Council, through the Land and Asset Strategy Committee, with a program status update in June, 2005. This update will include the proposed governance and risk assessment frameworks and project next steps.

AMCW recognizes that there are many separate asset management initiatives underway in the operating areas. The focus of the Corporate Asset Management Program will be to work at a strategic level to provide asset stewards the processes and tools that they need to make consistent, effective and informed infrastructure decisions given the input from the various operating areas. The program will also provide support to each operating area, as needed, for the development of their individual best practices.

Corporate Engineering will also work to align the Corporate Asset Management Program with the ongoing corporate strategic projects, including the three-year budget and business planning, integrated risk management, financing growth, triple bottom line and accountability initiatives.

