MANAGING CAPITAL ASSETS
A NEW EMPHASIS ON A TRADITIONAL ROLE

BY PUBLIC SECTOR DIGEST RESEARCH AND SHAYNE KAVANAGH
Capital asset management has become a topic of increasing interest for local governments, given high-profile infrastructure failures, a focus in the popular media on infrastructure deficiencies, and the promulgation of new accounting standards. Of course, asset management has been a traditional role of local governments, but many public officials and managers are revisiting the way this role is carried out.

This article looks at the key policies and best practices related to managing capital assets and presents examples of policies and practice from the City of Edmonton, Alberta, and the City of Hamilton, Ontario — both municipal leaders in asset management.

**KEY POLICIES FOR ASSET MANAGEMENT**

The budget for capital asset management competes with other potential uses for funds — many of which have a higher public profile and bring more visible, immediate (if perhaps also more temporary) benefit to the public. The organization’s governing board can adopt a policy that establishes a strategic intent to commit to asset maintenance and a shared understanding of how the local government creates value for the public through capital asset management. The GFOA best practice, *Capital Asset Assessment, Maintenance and Replacement Policy*, outlines the major elements of a policy:

- Require a complete inventory and periodic measurement of the physical condition of the organization’s capital assets.
- Establish condition and functional standards by asset class.
- Evaluate infrastructure and other assets, and then set priorities.
- Develop financing policies to maintain a condition assessment system and promote sufficient funding for capital repair and maintenance.
- Monitor and communicate progress.
- Prepare plain language status reports on the condition of the organization’s capital assets.

**Define Needs.** The City of Edmonton, Alberta, established strategic intent by adopting a series of three policy goals and related goals. The first goal was to define needs by evaluating and reporting on the state of infrastructure assets. This involved maintaining an asset inventory, valuations, and a condition rating system for infrastructure. The city’s policy goals directed the use of tools such as life-cycle costing, risk assessment, and return on investment to evaluate its asset portfolio fully. It is also important to determine the current and projected use of infrastructure assets and related costs. Doing so allows Edmonton to understand which infrastructure will be subject to the greatest level of demand and, therefore, what level of service and funding the city needs to provide in response. The city’s policy goals also recognized the need for helping the public understand the scope, value, and importance of investment in infrastructure and how infrastructure assets meet the city’s broader social, environmental, and economic objectives.

**Develop Solutions.** The second major policy goal Edmonton pursued was to develop solutions by implementing sustainable infrastructure asset management practices. This includes developing and applying evaluation tools that reward sustainable approaches to service delivery, such as taking the total lifecycle costs of an asset into account, as...
opposed to just acquisition costs or other short-term perspectives. These evaluation tools must also balance supporting investment in new infrastructure, operating and maintenance, rehabilitation, and upgrades and expansion. 

**Secure Funding.** The third and final policy goal for Edmonton was to ensure adequate fiscal tools and resources to fund infrastructure assets. This involves pursuing alternative sources of revenue, reviewing shared service delivery and cost/revenue-sharing mechanisms, encouraging coordination with other service providers (e.g., utilities, school boards), and collaborating on key investments with other levels of government, institutional stakeholders, the development industry, and non-governmental organizations.

**KEY ASSET MANAGEMENT PRACTICES**

The City of Hamilton, Ontario, began putting policy into practice by acquiring the information to respond to three primary asset inventory questions:

- What do we have?
- What is it worth?
- What condition is it in?

Hamilton took the following perspectives in answering the question on asset condition:

- **Condition and performance** — the current physical condition of the asset group and its ability to perform to the required level.
- **Capacity versus need** — the degree to which the asset group is meeting or will meet its capacity requirements.
- **Funding versus need** — the level of operational and capital funding dedicated to the asset group for both existing and future assets, compared to the actual financial requirements.

While answering these three primary asset inventory questions, Hamilton also made sure to differentiate among three broad perspectives of asset management:

- Financial management.
- Demand management.
- Lifecycle management.

Finance officers are familiar with the financial management perspective, but other two perspectives might be less obvious. Demand management requires that the future demands on infrastructure be identified, using economic growth projections as well as master plans. For lifecycle management, information is compiled on inventory and asset condition and performance, age, and valuation. With this information gathered, the Hamilton could then determine the long-term financial impact of its capital asset portfolio and plan for a sustainable capital asset budget.

Next, Hamilton addressed three more asset management related questions that move from planning to action:

- What do we need to do to it?
- When do we need to do it?
- How much will it cost?
The information required to answer these questions included both lifecycle and financial analysis. Lifecycle analysis considers asset capacity, remaining life, and risk (which assets might create vulnerability because of condition and demand — see Exhibit 1). The city developed a cost-benefit analysis based on the risk analysis, which indicated the best potential asset investments. The financial analysis was used to generate cash flow forecasts and tax and user fee rates.

The final three questions Hamilton addressed were:

- How do we reach sustainability?
- Do we still need the asset?
- How do we maintain sustainability?

The city used the information generated in response to the previous questions to answer these. Factors such as risk, demand, and lifecycle cost revealed priority investments. Demand management plans, based on the future demand analysis, helped mitigate the total cost the city would expect to incur in meeting infrastructure demand. Investment planning included capacity upgrade plans, renewal plans, and operation and maintenance plans to ensure that the city took full advantage of its options in meeting demand, and that it and did so in light of the full lifecycle costs of the asset.

Finally, the city analyzed its overall funding and revenue requirements to develop financial plans. All nine questions are considered and answered at different levels within the city’s plan — the strategic planning window, the tactical planning window, and, to a lesser degree, the project planning window. All of these items came together to form the city’s asset management framework.

Once the asset management framework was in place, the City of Hamilton addressed the monitoring and reporting of asset conditions, both internally — to the board and staff — and externally — to the public. The two primary and interrelated elements of the reporting system was a “state of the infrastructure” report, which engaged the public in asset management, and the establishment of levels of service and a review of results against the service standards. Accordingly, the city developed two new communication tools: an infrastructure report card (see Exhibit 2) and an asset replacement value graphic (see Exhibit 3).

### Exhibit 1: Edmonton’s Factors for Risk Evaluation

**Condition.** Edmonton uses an A through F scoring system to denote condition. The score is determined by in-depth analysis of physical condition, usefulness, and capacity relative to demand.

**Critical Assets.** This refers to the portion of the asset that is theoretically expected to fail. Edmonton determines this using mathematical analysis and engineering data.

**Impact of Failure.** This estimate, based on the city’s master plans, predicts how an asset failure would affect the city’s ability to produce value for the public. In other words, how would asset failure disrupt service delivery plans?

**Severity.** This analysis indicates which assets are in critical condition and how failure would affect them.
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<tbody>
<tr>
<td>Water</td>
<td>B+</td>
<td>Status quo can be maintained with effective renewal investment decisions with advanced AM practices.</td>
<td>B</td>
</tr>
<tr>
<td>Wastewater</td>
<td>B-</td>
<td>Key AM plan improvements for facilities balanced by funding issues — higher energy costs at WWTP.</td>
<td>B</td>
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<tr>
<td>Storm Water</td>
<td>C-</td>
<td>Condition OK but major concerns over lack of dedicated funding for O&amp;M and capacity impacts of climate change/flooding.</td>
<td>C</td>
</tr>
<tr>
<td>Road and Traffic</td>
<td>D-</td>
<td>Capacities managed but major concern for backlog and lack of reliable funding; 50 percent from gas tax/grants not sustainable.</td>
<td>Roads D, Traffic C</td>
</tr>
<tr>
<td>Central Fleet</td>
<td>C-</td>
<td>Concerns for renewals without sufficient funds available and user costs not sufficient for full cost recovery.</td>
<td>C</td>
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<tr>
<td>Corporate Facilities</td>
<td>C-</td>
<td>Change is attributed to significant improvements and focus on asset management processes and new staffing.</td>
<td>F</td>
</tr>
<tr>
<td>Parks and Open Spaces</td>
<td>C-</td>
<td>Concern that O&amp;M funding is not keeping pace with acquisitions of new assets. Legislative improvements made in DC assessment.</td>
<td>C</td>
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<tr>
<td>Public Transit</td>
<td>B+</td>
<td>Reliance on external funding a risk for long-term sustainability. Recent additions plus on-board communications systems.</td>
<td>B</td>
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<td>Waste Management</td>
<td>B-</td>
<td>Future decline expected based on increasing O&amp;M costs with no increase in funding and requirement for capital to address upcoming demands.</td>
<td>C</td>
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<tr>
<td>Forestry</td>
<td>C-</td>
<td>Challenged by need to increase canopy and lack of sufficient O&amp;M budgets to maintain existing inventory. Concerns for forest health due to pest infestations and intensification.</td>
<td>F</td>
</tr>
<tr>
<td>Cemetery</td>
<td>C</td>
<td>Future concern about balancing issues of adequate capacity with lack of funding for sustainability.</td>
<td>B</td>
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Notes.
1. The 2009 rating was created on the same basis as the previous 2005/2006 reports and is comparable based on the combined consideration of the three criteria:
   - Condition and performance.
   - Capacity versus need.
   - Funding versus need.
2. Anticipated future based on current programming, level of investment, and practices.
Too often, the complexity and volume of information that supports capital asset management decision making simply overwhelms citizens, or they ignore it. Aggregate numbers such as the city’s $13.4 billion in infrastructure are incomprehensible to most and therefore of little value. The report card helps Hamilton’s stakeholders identify the current state of the city’s infrastructure as well as showing what will happen if the status quo is maintained. In addition, the city’s graphic illustration of city-owned infrastructure attributes a value per household for each category, along with a total asset replacement value per household. All stakeholders understood and appreciated his communication strategy.

An easy-to-understand, intuitive approach to asset reporting ensures that all departments throughout city hall will remain committed to mitigating the city’s infrastructure gap. Further, breaking out the value of individual assets and presenting per capita amounts advances asset management as an issue that is important to individual citizens. It is, after all, the citizens who collectively own and fund the assets. Hamilton simply makes their ownership explicit, strengthening the case for related expenditures.

CONCLUSIONS

Infrastructure has always been critical to the continuing economic vitality of a community, but the challenge of providing infrastructure has changed for local governments. Resources have diminished. Also, for many localities, maintenance, rehabilitation, and replacement have become much more important than acquiring entirely new assets. A sound asset management policy establishes the strategic intent to keep the asset stock in good enough condition to support community demand. Staff can then develop asset portfolios, lifecycle analyses, and asset investment plans to fulfill the jurisdiction’s
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strategic intent. They can also create monitoring and reporting tools to communicate the importance of infrastructure to stakeholders inside and outside the organization.

Notes

1. Consider, for example, the August 2007 bridge collapse in Minneapolis, Minnesota, or the June 2010 sinkhole in Atlanta, Georgia, which was caused by a water pipe originally installed in the 1920s.

2. In their 2009 Report Card for America’s Infrastructure, the American Society of Civil Engineers (ASCE) gave U.S. infrastructure an average grade of D, noting little improvement from the issues identified in the ASCE’s previous report card, in 2005 (see www.infrastructurereportcard.org).

3. These include Governmental Accounting Standards Board Statement No. 35, Basic Financial Statements — and Management’s Discussion and Analysis — for Public Colleges and Universities — an amendment of GASB Statement No. 34, and Public Sector Accounting Board Statement No. 3150, Tangible Capital Assets.


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