

# USING A FRAMEWORK TO IMPROVE ASSET MANAGEMENT OUTCOMES

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## Abstract

History has seen many asset management planning initiatives fail for a variety of reasons. Observation would have it that many of the early initiatives were the result of a single lone voice within an organisation. Upon the departure of that champion of asset management, practices rapidly declined. Moreover, even where asset management continued, there were marked differences in the practices from year-to-year.

For central agencies and territorial authorities who manage a diverse range of assets, the asset management functions of “line departments” are often so diverse as to render any central level analysis impossible. Asset management plans for the education sector are incompatible with those of the transport sector and so-on across the organisation.

One established means of imbedding asset management and providing alignment of practices is through the introduction of a framework, which clearly lays out the expectations of all parties in terms of information flows, reporting standards, financial analysis and related activities. In particular, the use of a framework is seen of significant value where diverse assets are being managed – such as the asset management functions of a central government agency, or that of a territorial authority.

The framework lays the ground rules by which asset management will occur within an organisation but does not provide the answer to asset management (that is the role of the asset management plan). To have “life” the framework must personalise asset management such that roles and responsibilities are defined, along with the questions of how, who and when.

The paper draws on the authors work in developing the Ontario Infrastructure Asset Management Framework (IAMF), and subsequent work for several of the Ontario provincial ministries. It addresses both the process of developing the IAMF, plus looks at the benefits afforded from it, how the provincial ministries have responded and lessons learnt along the way.

**Key Words: benefits of using an infrastructure asset management framework to improve asset management planning based on the experiences of Ontario**

## Introduction

The need to provide sound asset management planning is well understood, yet even in many organisations where asset management is being undertaken to relatively advanced levels, the loss of only one or two key individuals can readily undermine achievements. While there may be other reasons to this, it is the authors view that in many cases this loss of progress – and often degradation of progress – is as a result of their not being a framework for asset management planning within the organisation.

This drop off in performance is no different to the restaurant that can turn out magnificent meals, but with the chef away, nobody knows the recipes and performance suffers as a result – sometimes to the point of failure of the restaurant. With legislation and/or expectations of sound asset management occurring, complete failure to manage assets is unlikely to occur, but the process can certainly be undermined, or become a series of unrelated components, rather than a smooth running machine. It is the maintaining of the smooth running machine of asset management, that is the role of an infrastructure asset management

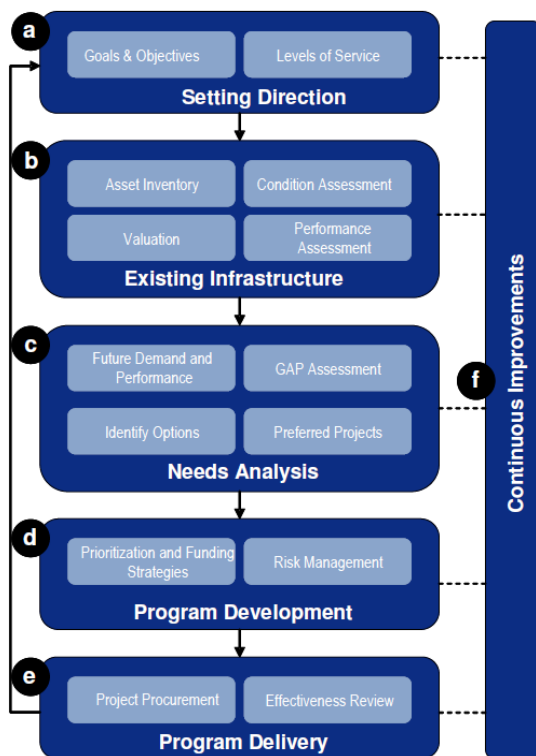
framework (IAMF). The IAMF is the recipe of successful asset management planning within an organisation – the document that the organisation can turn to when key individuals move on.

### Components of an IAMF

Given that the IAMF covers the full gambit of asset management practices and planning, there is little surprise that the IAMF also covers the same scope of activities.

However the focus of the IAMF is significantly different to that of an asset management plan (AMP).

In the same way that the AMP will typically follow a structure somewhat akin to Figure 1 below, the IAMF will also reflect these steps. However the IAMF should also document the processes and systems utilised to produce the AMP, the timeline of inputs and outputs, and who is responsible for making each step of the process occur.



**Figure 1: Typical Asset Management Process**

Whereas the AMP will typically provide the valuation of the assets, the IAMF will describe the process and data sources that the organisation will use to generate the valuation. Similarly the IAMF will clarify how funding allocations work, but will not deal in

the specifics of funding for a given year – that again is the role of the AMP.

### Who Needs an IAMF

Ideally any organisation that owns assets, or develops an asset management plan, should have an IAMF. However experience shows that those who voluntarily adopt an IAMF have some common issues, such as:

- Diverse assets to manage;
- Timing and resourcing issues to ensure all inputs are ready when needed for the AMP;
- Significant infrastructure failings, resulting in the public spotlight being placed on the organisation; and
- Key individuals are (or are about to) move on to new roles.

The diversity of assets to manage is often a critical issue for large organisations, or for central government agencies. In these situations it is common for the transport department to prepare an AMP outlining how the roughness of the road will vary with funding levels, the education department will prepare an AMP on the quality of education from non-investment in new teaching infrastructure, while the health department may produce their AMP around the time patients spend in hospital. While these are all fully valid approaches, the challenge the central agencies (typically infrastructure units, finance departments or treasury boards) are faced with a problem of needing to compare apples with oranges. The role of the IAMF is to ensure that the information that the central agencies need to make their investment choices, is provided in a format that they can utilise.

The second bullet point above - that of the timing of resources - is something for which a successful IAMF can readily help. By identifying what needs to happen when and by whom, throughout the year, the mad rush to undertake asset management planning and funding requests can be minimised (if not eliminated). By laying out the calendar of asset management activities, conflicts between data collection, project identification, funding allocation, design and construction can all be managed.

While nobody likes failures – let's face it, when infrastructure asset management makes the headlines, it is seldom good – an IAMF is often the key lacking piece of the

puzzle. A good IAMF will lay out the timing and process of collecting condition and performance data – which is more often than not missing when infrastructure fails.

Similarly the process for identifying and managing risks will also be documented in the IAMF.

Finally (although sometimes too late in a practice often referred to “as closing the door after the horse has bolted”), for those organisations that are facing an impending change in key staff, the documentation of an IAMF is a way to download many years of experience in a structured manner. While the IAMF cannot be expected to deliver in isolation what the right person with the right experience can do, the IAMF can at least prevent a slide into the asset management wilderness.

### **What Does a Good IAMF Look Like?**

First up, a good IAMF personalises asset management to the organisation, and ideally to specific roles. There are plenty of guidance documents on how to undertake a condition assessment or an asset valuation, the role of the IAMF is to refine these for how a specific organisation will undertake these tasks.

Secondly, the IAMF provides all parties with a level playing field. It should also specifically set out to determine what information each party needs to make the decisions that they need to make. There is little value in providing

Finally, the IAMF must provide the scope for the advancement of asset management planning. As with any formulaic approach, there is always the risk the conforming to the IAMF will become a lifeless process. Asset management planning is an ongoing process of improvement, and the IAMF must not only recognise, but actively encourage such improvement.

Ultimately the test of a good IAMF is whether it is used, and more so whether the quality and consistency of asset management planning within the organisation is improving.

### **The Ontario IAMF**

The authors of this paper played pivotal roles in the development of the Ontario IAMF project (as well as key roles on subsequent asset management planning projects for

several of the provincial ministries). A vision of asset management in Ontario was developed, for which the IAMF would aim to deliver. The vision was:

*An integrated approach for informed investment decisions and effective stewardship of infrastructure assets within the Province of Ontario, its Broader Public Sector and Transfer Payment Partners.*

To assist with the development of the IAMF, the following four goals were described:

#### **Comparability and Consistency**

- Standardized processes and methodologies for AM across central agencies, ministries, agencies, and transfer payment partners

#### **Stewardship**

- Minimize life cycle costs by keeping assets in good repair, while maintaining good service levels at acceptable risk

#### **Capital Budgeting**

- Improve understanding of needs and future funding requirements
- Ensure sufficient investment to meet stewardship goals

#### **Process Redesign**

- Link AM to capital allocation decisions in RbP and results reporting processes, particularly linking investments to outcomes

The establishment of clear goals is a sound approach in the change management tasks that were expected as a result of the IAMF.

By gaining agreement to the goals that would underpin the Vision, key project decisions could be made.

By producing and implementing the IAMF, Ontario set itself on track to achieve benefits in terms of:

- Meeting legislative requirements
- Better quality data for decision-making
- Reduced risk of asset failures and improved risk management
- Better long-term financial management and long term financial planning
- Better outcomes for the same or less cost
- Minimized lifecycle costs
- Sustainability

- Auditable decision making and reporting

In simple terms, Ontario recognised that it either “*plans and acts, or doesn’t plan and reacts*”. The production of the IAMF was seen as a critical step in gaining momentum towards the plan and act side of the equation. To develop the IAMF, the Ontario Ministry of Public Infrastructure Renewal (PIR - subsequently renamed to Ministry of Energy and Infrastructure (MEI)) took the lead role in bringing the necessary skills and expertise together. The total team comprised of:

- A Steering Committee – containing senior ministry officials from the major infrastructure holding ministries;
- The Ontario Asset Management Working Group (OAMWG), containing key individuals who would ultimately be responsible for making the IAMF work;
- A Challenge Group, which was a subset of the OAMWG;
- Ministry of Energy and Infrastructure; and
- A consultant team comprising of KPMG LLP, Opus International Consultants Ltd and Morrison-Hershfield Ltd.

One of the key lessons learnt was that the ownership of the IAMF had to come from within the OAMWG. Ultimately the success of the IAMF would be driven by the core team of 30-40 individuals with whom MEI and the consultant team worked. By interacting with the OAMWG at regular intervals, presenting drafts of chapters, seeking inputs and comments, and addressing concerns along the way, the final IAMF could be safely called the Ontario IAMF.

### **Structure of the Ontario Framework**

As previously noted, the IAMF is the detailed “How To” guide and provides a step-by-step process covering the full asset management process, from setting goals to monitoring achievements. Ontario set the team the task of drawing on international best practices, with the intention of placing the Province of Ontario at the leading edge of asset management. The IAMF contains specific chapters on each of the following topic areas:

- Goal setting (performance measures) – how do the governments goals and

aspirations for the province get devolved down to infrastructure goals;

- Inventory development – how will the province obtain a total picture of the assets it has, or uses;
- Condition assessment;
- Asset valuation;
- Performance assessment;
- Needs analysis;
- Program development – how do the individual ministries identified needs get prioritised within the central agencies, and what performance expectations are set for the resulting investment;
- Program delivery and review;
- Asset management information systems and decision tools;
- Risk management;
- Asset management plans – what format will they take, what is the minimum each AMP should contain; and
- Business process design, roles, responsibilities and reporting – to personalise the IAMF to Ontario.

The IAMF provides the guidance on the processes, tools and systems that should be employed within the delivery of infrastructure asset management.

The project also involved reviewing the current state and recommendations to improve, a review of asset management infrastructure systems to support the IAMF, a decision tools review, the implementation plan and communications material. Recommendations were made covering aspects such as governance and organization; policies; business processes; and technical considerations.

### **Implementation Roadmap**

Just having an IAMF, doesn’t impact much of a change without a strong and achievable implementation roadmap. To this end the team prepared an implementation plan to achieve desired outcomes over the next 10 to 12 years. The approach focuses initially on the directly owned assets of the province and then those of the BPS. The first two years contain detailed activities designed to engage stakeholders, create momentum and pilot many IAMF recommendations. Specifically, some of the notable features of the implementation plan included:

- Establishing a Program Management Office (PMO) within MEI to oversee the implementation of the IAMF initiative.
- Selecting and establishing pilot initiatives; and
- Building ministry capability in and enhancing knowledge transfer of good AM practice.

### **Achievements to Date**

MEI has taken the lead in progressing the implementation plan, working through the tasks as set out. As with any plan, some tweaking has occurred along the way. For instance, the establishment of a dedicated PMO was found not to be necessary, with the staff within MEI able to deliver the necessary inputs.

Numerous ministries have commenced significant implementation projects. These have covered a broad range of asset types, from court rooms to tourist facilities – demonstrating the strength of the IAMF.

### **Conclusion**

Without an IAMF, asset management is like a band without a conductor – great music may occur if you have talented musicians, but more often than not you just get noise. The role of the IAMF is to ensure that the members of the band show up at the right time and are all playing the same song. The triggers for developing an IAMF are often when something goes wrong, however there are benefits in having an IAMF even for an organisation that is achieving good asset management outcomes. The loss of one or two key individuals can rapidly undermine progress in the delivery of asset management, with the IAMF one of the more effective means of ensuring this does not occur.

Within Ontario, the Ministry of Energy and Infrastructure led a significant project to establish an IAMF. Developed over a period of 9 months, the project is now in its implementation phase. A number of ministries have undertaken projects in accordance with the IAMF to improve their asset management planning, such that better provincial outcomes can be obtained from the significant investments made in the past – and those yet to come.

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### **Biographies**

**Dr Ian Greenwood** is a specialist in the field of infrastructure asset management. His expertise includes major projects across a variety of infrastructure types in Australia, Canada, India, Indonesia, Malaysia, New Zealand, Thailand and the United Kingdom. Ian currently holds the position of Technical Principal Infrastructure Asset Management within Opus International Consultants, is the Network Strategy Manager for the Auckland Motorway Alliance, and was the technical lead for the Ontario Infrastructure Asset Management Framework.

Ian is the industry Technical Manager for the implementation of pavement performance modelling within New Zealand. He was a co-author and trainer for the National Asset Management Steering (NAMS) group manual on Optimised Decision Making, and lectures part-time at the University of Auckland on infrastructure asset management.

**Chris Reid** is a Senior Manager for Operations Improvement in KPMG's Advisory Services team, based in Toronto. Chris was the project manager for the Ontario Infrastructure Asset Management Framework project.

He has 28 years consulting experience plus five years industry experience. His experience covers a broad range of issues including strategic asset management, strategy and business transformation, business planning, stakeholder requirements analysis & facilitation, service delivery re-engineering, alternate service delivery, business process outsourcing, business and market feasibility studies, cost reduction, organization restructuring, human resources, productivity and performance improvement. Chris is a skilled facilitator and has the Certified Management.