AMQ International
Strategic Asset Management

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New Zealand Electricity Industry Asset Management Plans

- **Mandatory requirements**
- **Public disclosure**

Contributors and Advisory Panel for this Issue

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Following the Auckland CBD blackout in 1999, the New Zealand Government resisted the pressures to increase industry regulation but put the onus on lines companies to demonstrate to their customers and the general public that they are managing their assets both effectively and efficiently to maintain the service levels that the public expect. It did this by mandating the public reporting of Asset Management Plans and stipulated the form and minimum requirements of such plans.

Asset Management Plans are now publicly available for all lines companies and you can take your pick by going into
www.energize.co.nz/welcome.htm
where you will be able to access all of the lines companies and their asset management plans.

These can be downloaded (but it takes forever!) or a CD can be mailed to you (quicker!)

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LEARNING FROM NEW ZEALAND

We now examples of asset management plans, designed to a common minimum standard, made publicly available.

You can benefit two ways:

- By assessing your plans against the requirements of the NZ electricity plans. Are the requirements relevant for you?
- By evaluating the actual plans against the requirements set down for them? Do they comply? What can an outsider (you) gain from a reading of these plans? Could your stakeholders benefit from similar plans?

What is required in New Zealand?

Line owners (other than Transpower) must disclose a current AMP in the manner set out in Regulation 25. AMPs must be disclosed during the 1999-2000 financial year (ie before 31 March 2000) and within 3 months of the beginning of each financial year. So these are the second AMPs that line companies have been required to produce.

AMP disclosure in the prescribed format does not prevent line owners from having AMPs for their own use in a different format or comprising a different set of data.

Summary

Disclosed AMPs must include a summary that provides a brief overview of:

- The purpose of the plan;
- The date the plan was completed and the period to which the plan relates;
- Asset management systems and information;
- Network and asset description;
- Service level objectives;
- Life cycle asset management and development plans;
- Risk assessment; and
- Performance and plans for improvement.

Single Document

Disclosed AMPs must consist of a single document

Disclosure of plans as a single document will prevent disclosure of disjointed, poorly co-ordinated material that is difficult to understand. In some cases this will require companies to amalgamate various documents for disclosure purposes, for example, separate network development plans. This does not necessarily require integration of separate plans into a new framework if the linkages between parts of the plan are made apparent and indexed.

Performance Assessment

The disclosed AMP should:

- Permit assessment of the suitability of asset management practice and assets for current and future service;
- Specifically support the achievement of disclosed reliability performance targets; and
- Provide a sound basis for on-going risk assessment.

This is the over-riding intention of AMP disclosure. AMPs should be prepared with these primary criteria firmly in mind.

Information Limitations

Disclosed AMPs must clearly identify limitations in availability or completeness of information, and include details of:

- The assumptions made and basis for asset management planning in the absence of such information, including estimation and assessment methodologies used; and

- Plans for improvement in information quality.

The detail and accuracy of information available will vary. Information gaps should be specifically addressed to enhance the transparency of disclosure, place emphasis on identifying deficiencies and promote improvement.

Background and Objectives

This section should include

- A description of the interaction between the AMP's background and objectives and other corporate goals, business planning processes and other plans;
- Planning periods adopted;
- Stakeholder interests (owners, consumers, etc)
- Accountabilities and responsibilities for asset management; and
- Details of asset management systems and processes including asset management information systems/ software and information flows.

Assets covered

Details of assets covered by the disclosed AMP must include:

- Description of the asset configuration;
- Identification of assets by category;
- Justification for asset; and
- Location, age and condition

In other words, what is owned and why, where it is and what condition it is in.

Service Levels

The disclosed AMP must detail proposed levels of service, including:
Consumer oriented reliability, security and availability performance targets
Other targets relating to asset performance, asset efficiency, and effectiveness and efficiency of line business activity; and
Justification for target levels of service based on consumer, legislative, regulatory, shareholder and other requirements.

The asset management process is based on the identification of the business need for the use of the assets. For the purposes of information disclosure it is appropriate to concentrate on consumer-related performance measures, although the AMP should also state other commonly used efficiency measures for assessing as management performance.

Most line businesses have documented service levels, so their inclusion in the disclosed AMP should not be onerous. The service levels will require careful consideration and definition by each line owner.

Risk Assessment

Disclosed AMPs must include details of risk policies, assessment and mitigation, including:

- Methods, details and conclusions of risk analysis; and
- Details of emergency response and contingency plans.

Evaluation of Performance

Disclosed AMPs must cover detail of performance measurement, evaluation and improvement, including:

- Reviews of progress against plan (both physical and financial);
- Evaluation and comparison of actual performance against targeted performance objectives; and
- Gap analysis and identification of improvement initiatives.

USA - by contrast the US Department of Energy in its "Life-Cycle Asset Management Order 430.1, 1999" while specifying individual elements and making detailed recommendations on processes and systems, makes no reference to asset management plans in its list of requirements, for either internal or external (public) use, and does not even include asset management plans or planning in its list of definitions!

SELECTING THE RIGHT TOOL FOR THE JOB

REPLACEMENT COST VERSUS REPLACEMENT VALUE

There is a great tendency for these two terms to be used interchangeably, but they are not interchangeable.

Consider the following examples:

Example 1.
A building constructed before new fire safety standards were established does not comply. The owners are allowed to continue with the existing condition only until the building is renovated, at which time it must be upgraded to meet with the new fire requirements.

A valuer would have to value the building without complying fire safety standards. Compared with a building similar in other respects but which did comply with the fire codes, this building would have a lower replacement value. (it would be lower by the extent of the anticipated cost of upgrading its fire standards)

When renewed or replaced, however, the actual replacement cost would include the costs of meeting the new fire standards. The replacement cost would thus exceed the replacement value.

Example 2.
A tin shed in a school yard would be replaced with a brick building which is now the accepted school standard. The replacement value is the value of a tin shed. The replacement cost is the value of the brick building.

Example 3.
A 100 year old oak tree in the park would be replaced by a ten year old young tree from a nursery because that is all that would be available. The replacement cost of the tree is the price of the ten year old replacement. But this in no way expresses the value of the original.

Change of Standard

In each of the above cases there has been a 'change in standard' between the original asset and its replacement. Whenever this is the case there will be a difference between replacement cost – the actual cost to replace – and the value (or worth) of the original.

Where to Use?

Where do you need to use 'replacement cost' and where do you need to use 'replacement value'?

This is simple. Replacement value is used whenever the desire is to express a concept of 'worth'. So, in the balance sheet, one would use 'replacement value'.

But where the desire is to plan for future funding, then 'replacement cost' is the appropriate figure.

This means that planning and asset management can seldom use the figures in the balance sheet!

THE GREAT ASSET MANAGEMENT DEBATES

At the **Conference of the Institute of Public Works Engineers, Australia , August 28-29, Perth, WA** I will be moderating two debates:

1. "That Life Cycle Costing is No Longer Relevant in Today's Fast Changing World"
2. "That Asset Management is Best Left to the Accountants"

If you are attending the IPWEA Conference, please join us for these debates, which promise to be fast and fun. If you are not, you can catch up with the outcomes which we will report in the September issues.

"RE-ACTIVE" RULES OK?

"Pro-active" is so much the current buzz-word that agencies are being falsely led to believe that it is the superior approach. This is simply not so. Both approaches have their place and re-active is the appropriate response more times than you may think.

Being re-active means letting the condition of the asset tell you when attention is needed.

This can be contrasted with the pro-active approach, which is essentially guessing when attention will be needed – using data collection, modelling and analysing to improve the guesswork!

The major advantage of being re-active is that you do not waste money by doing something when it is not needed.

The major advantage of being pro-active is the ability to employ less costly treatments than if the asset is run to failure, and to avoid the costs incurred by unplanned outage.

But being proactive means collecting, modelling and analysing data, which is a costly exercise in itself. Therefore, any savings made by being pro-active must be substantial enough to outweigh these costs. The results of proactive modelling are not without error and this must be taken into account as well.

Be Proactive When...
In general, pro-active maintenance should only be considered when

- Less costly treatments to complete repair and renewal are available
- The costs of unplanned outage are extensive
- The maintenance projections are reasonably reliable
- The costs of obtaining the projections are not excessive

Conversely,

Being Re-active is the Superior Strategy

- When the treatment that would be applied in advance of failure to extend the life of the asset or to renew it is not significantly cheaper than fixing when failed, and
- The consequences of breakdown are not socially, economically or environmentally extensive

Being Re-active is also the best strategy

- Where it is possible to define an economically superior 'pro-active' strategy but with the funding levels available, it would never get a high enough priority to be carried out

This probably accounts for the majority of assets in most agencies.

It certainly accounts for such assets as small diameter water mains (where customers will quickly notify the agency when water supply is interrupted and where water loss and damage are unlikely to be substantial).

It would also apply to other assets where failure is not life threatening and would be quickly notified – failed street lights for example.

Assets where failure is mainly due to usage (or abusage!) rather than time or other factors which can be modelled, are also candidates for re-activity.

Re-active should be the tool of choice unless pro-active measures can be justified in terms of net cost savings (after costs of data collection, etc)!

THE VALUE OF TH E

FACILITY CONDITION INDEX

Ami Sudjiman-Spinks Strategic Facilities PLtd, a member of the SAM advisory panel, writes:

"Some members of our company have been concerned about assessing the condition of asset (particularly facilities) from the amount of backlog maintenance or corrective works that need to be spent on the asset. Now we wondered if you have some views on it, as we found that we appear to be fighting half of the world (well, almost).

We understand that this method of assessment (usually stated through its Facility Condition Index - FCI) is done in North America and also various organisations in Australia who work closely with North American organisations eg AAPPA. Some organisations measure their FCI simply by calculating backlog maintenance as a percentage of the replacement value of the asset. (the higher the index, the worse the condition). Others do it by calculating the difference between the total complete replacement costs (100%) and backlog maintenance as a percentage of the against the complete replacement cost. (the higher the index the better the condition). There may also be other ways of measuring it, but they all rely on the amount of the backlog maintenance or the corrective works required by the asset.

Whilst this method easily supports benchmarking assessment for average rate of maintenance expenditures or allocated funds for similar organisations, it does not appear to provide any indication on the true measurement of the condition of the asset. Our concerns about this method of measuring is the fact that this method appears to ignore:
- the linkage between the condition and the business objectives or functionality of the asset
- the true physical appearance, condition or performance of the asset

In our projects so far, we always:
- identify the linkage of the asset to the business
- determine the required condition or performance to support that linkage to the business (by establishing the various criteria for being excellent, good, average etc, in terms of their physical condition, appearance and/or performance)
- identify the current condition
- analyse the gap
- identify the action and cost to close that gap.

However, when making statements about the general condition of the asset or the portfolio, we never use the costs as the basis for measurement. Rather, we prefer to stick to the current condition, as we believe that that is the condition. The costs are the 'tools' required to bring the current condition to the required condition. We also noticed that, when assessing a large set of facilities of different types and sizes, we will have large costs variations, as the 'sheds' may require minor works which will still be costly in comparison to the replacement costs, whilst the multi storey buildings will require repair works that may be negligible in comparison to the replacement costs but are nevertheless critical. More reasons for us not to rely on costs to measure the condition of the asset."

RESPONSE:

I think we have now moved past the stage where physical condition itself is the driver for asset management activity. And just as well. In today's 'outcome focussed' world, the drivers are, or should be, 'fitness for purpose' and 'criticality' neither of which is addressed by measuring backlog maintenance.

Backlog maintenance can arise from only two causes:

(1) asset managers are attempting to maintain a standard that is not being funded, or
(2) gross incompetence on the part of the asset managers. (ie they are getting enough funding but spending it so poorly that needed work is not being done.)

Let us assume that the answer is not (2), then if backlog maintenance is a problem, the answer is not necessarily more funding, but more understanding.

Why is the standard, desired by the asset unit, not being equally desired (and therefore funded) by the agency? Do the agency decision makers understand the linkage between physical condition and desired service levels? (Does the asset unit?) If funding is not available, despite good understanding, then standards need to be changed. None of this is helped by measures such as the FCI.

As Stephen Howe of Boroondara Council, and another of our Advisory Panel, commented. "It seems that what we really want is a good idea, and good measures, of service levels." I agree.

FROM THE CASEBOOK:

HOW DO PROJECTS GET ON YOUR CAPITAL WORKS LIST?

Looking at their latest capital works list, I asked how projects 'made the list'. I was told if a project could not 'make the prioritised cut' in one year it was held over for a later year. Fair enough.

But further investigation revealed that whenever a Minister became enthusiastic about a particular project that could not be justified in terms of community benefit, rather than inform the Minister and risk his wrath, he would be told that "funds were not currently available, but that it would be 'put on the list'". With the inevitable changes of staff, by the time the Minister had moved on and the project could be safely removed, there would often be no one around who remembered why it was on the list in the first place and it would be treated as a genuine project – and eventually it would surface and be included in the capital works list!

The sad thing is that these projects that should have been put in the bin years before then often got priority treatment "because they had been on the list for a while"!

WEBSITE OF THE WEEK:

THE CONSTRUCTION BEST PRACTICE PROGRAM
www.cbpp.org.uk

What will you find when you get there?

- **Directors Briefings—**4 page briefings on construction best practice. There are currently 139, they aim at 230, written by professionals, and available free.
- **A Construction Research Communication Newsletter** emailed directly to you.
- **SUBSCRIBE** (it's free) and you will then have access to 15 discussion forums, including
  - Whole life costing
  - Value Management
  - Benchmarking
  - Sustainable Cost
  - Information Technology
  - Risk Management
  - Supply Chain Management
  - Integrating Design and Construction

For each forum there is a discussion paper and you can put in responses. For some of the topics there is not many responses yet so you can really make a difference!

And you can link into the **Construction Industry's Knowledge Exchange** All in all, a really useful site—have a look.

Angry? Cheesed Off?

What really annoys you about Asset Management ?

For the next few issues, I am asking practitioners what really irks them about asset management and the way it is currently applied. Generally, we get annoyed by what we feel unable to change. Maybe some of the issues we raise will have answers, maybe they won't and we will have to learn to live with them, or work around them.

This response came in a week or so ago from a reader who gave his name but shall remain anonymous for obvious reasons.

We don't do it this way here!

"One of the problems faced in smaller regional Councils is they inevitably attract at a senior level only the older "waiting to retire" engineers who have little interest in keeping up with current practices in engineering. I would have thought that asset management was a fairly common sense approach to what Councils and indeed what executives are paid to do. At this particular Council there is little or no support for introducing a formal asset management plan - in fact from what I have seen it seems that we lurch from one disaster to another in the construction program - and maintenance - well it is non existent. One of the senior technical officers here cynically remarked that the Council has traditionally adopted an attitude of forgetting about infrastructure once it is built. The heart of the problem is at the senior level. I am not convinced there is the understanding of what asset management involves.

I am in a situation where even simple planning of construction projects is woeful. I have been here six months and am already looking for another job as the current hierarchy are very - well I guess the politest way to put it is they have only ever worked in local government which I believe is a problem.

I am young (23) and full of enthusiasm but it seems that people's perception of local government is in fact right for this Council. It is incredibly frustrating when you can see something being done wrong and believe you help find a solution but because things have always been done "this way" it never changes. "

Remember we are now 'web-enabled' - why not enter your comments 'on-line' in our gripes discussion forum?
www.amqi.com

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