

! New !
Discussion Forum
“Condition Based
Depreciation
(Renewals
Annuities)”
starts this week
www.amqi.com

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“International Asset Manager of the Year”
First Excellence Award

The Department of Administration and Information Services (DAIS) in South Australia has won the



MITS AWARD FOR
ASSET MANAGEMENT EXCELLENCE
in the
1998/1999 International Asset Management
Competitions

for its entry “Transportable Location and Condition Database”. The entry by Andrew Gehling, Tim Sierp (DAIS) and Brian March (Department of Education, Training and Employment) describes how DAIS developed a decision tool to make better use of its asset information (see page 59 for summary of entry). This is the first of up to 16 Sponsored Excellence Awards that will be made in the 1998/1999 International Asset Management Competitions.

From now until the end of October, each issue of Strategic Asset Management will feature one of the award winning entries.

There is still time for you to be a winner! Entries do not close until Sep 15th 1999. (see page 58)

The sooner you enter, the better your chances

As soon as your entry is received it will be sent out for judging. Each fortnight, the best entry received to that time, will win one of the excellence awards. Others will be retained for later selection.. **Also**, you can benefit from the judging feedback to recast and resubmit your entry, improving your chances.

Researched and written by Dr Penny Burns, AMQ International.
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Take a Shortcut!

You don't need much time to put in a winning entry for the *1998-1999 International Asset Management Competitions*.

You may, even now, be sitting on potential Award Winning information!

A Business Case

If you have prepared a business case for an asset related project, and

If that business case has

- Justified the need for something to be done
- Shown that what you propose doing is the best of the options
- Established the capital and ongoing costs
- Generated a case for benefits being greater than costs

All you need do is

- take out any confidential material (put it in a confidential supplement if you want to use it to add credibility for your entry. The supplement will not be published and will be treated in confidence by our judges).
- Check the entry rules and selection criteria which you will find on our website www.amqi.com to make sure you have covered everything.
- Ensure entry is 12-15 pages in length

--- and you have a ready-made potential winning entry!

Value Management Studies.

Or, if you have conducted a value management study and the study has documented the savings to be made and the benefits to be gained, again you have the basis of a winning entry. Look at the entry rules and criteria and

ensure you have covered all the bases, justified your starting and finishing position so that you can establish "value added".

In both cases, your entry is the stronger if you are able to document some of the outcomes (even if the project is not yet fully completed), but even early projects are potential winners if the potential costs and benefits have been well defined.

So Time is No Excuse!

- You could develop the field of asset management,
- Your agency could be an award winner,
- you could be flying to Melbourne in November to compete for the overseas study tour

The extended deadline is Sep 15th. But put your entries *in as soon as possible*. We will be making one award every two weeks from now until the end of October.

The earlier you enter, the greater your chances!

Get full copies of Award Winning Entries

Each week we will publish a short summary of an Award Winning Entry but you can get the full script of each, emailed to you once a fortnight, if you register as a delegate to the Competition Finals, to be held at the University of Melbourne, on November 25-26. Only \$695 for two days of award winning case studies, critique from the judging panel, and the best asset management networking you will find. Last year we had over 70 attending. This year we expect the numbers to more than double. First in get first option of dinner tickets for the Grand Award and Prize Night Presentation.

See next issue for more details

Extending Asset Information Capability



Andrew Gehling

The competition entry by Andrew Gehling, Tim Sierp and Brian March is a good example of creatively using existing spatial information from several sources to improve decision support.

The situation

The use of transportable school buildings enables management to cater for fluctuations in school enrolments above a sustainable core, and thus avoids the expense of constructing solid buildings for which there is only a transitory need. Around 50-60 transportables are re-located every year.

However many of the transportables are old, costly to maintain and at risk of arson and vandalism (particularly timber transportables).

The management problem is to avoid excess costs for the use of transportables by limiting the distances travelled, determine where their use is appropriate, rationalise where possible, and select carefully those slotted for upgrades.

The Opportunity

To reduce costs by better selection of transportables for re-location and for rationalisation, by developing a decision support tool that could be easily understood and used by officers with only a basic level of computer literacy.

The Options

- Adapt current asset information system
- Develop new system
- Use tools and data currently at hand to execute the project.



Tim Sierp

The 'do nothing' option would have resulted in costs of lost opportunities, and the adaptation and new development costs were extensive. In addition, the existing data base was difficult to use without extensive training.

The solution was to download existing database information on condition and location into spreadsheet form, combine it with enrolment data to develop measures of utilisation and use mapinfo to determine which under-utilised, good condition transportables were close to those schools requiring extra accommodation. The tool permitted decisions to be made that reduced upgrade and transport costs. Use of the tool enables estimated cost savings of \$18,000 per relocation. The tool can also be used to target poor quality transportables for disposal. Demolition of the worst 20% of timber transportables alone is estimated at saving \$3m on maintenance and safety upgrades over the next 5 years (based on current 25% funding of maintenance backlog).

The model is extendable to the management of other mobile assets such as dental clinics and major medical equipment.

Anyone can!

There are lots of lessons in this approach for other asset managers.

The full script of this entry, including analyses of options, illustration of the decision support tool and further applications, is available, in advance, to all delegates to the Competition Finals in Melbourne, November 25-26. *See details in next issue.*

Asset Management Plans

Part 2: Building on a Strong Foundation

First Plan or First “Published” Plan?

In the last issue we discussed the requirements for the ‘First Plan’, basically a statement of the starting position.

A “First Plan” is not necessarily the “First Published Plan”.

It can be, but it doesn’t have to be. If your CEO wishes your first published plan to deal with improvement aspects, the “First Plan” will be an *internal document*, documenting the current situation and it will be the *first stage* in the preparation of the first published plan. Beware the temptation to skip this documentation stage! If you do so, you will build your eventual asset management improvement plans on shaky foundations.

Should you use consultants?

The ‘first plan’ should be done ‘in-house’. Why? There are two reasons.

(1) This is the plan that describes your starting position. If you don’t know where you are, how can you contract for someone to improve the position?

You *can* have consultants help you to pull the thing together, but there is always the temptation for them to want to ‘improve’ as they go along rather than simply document it. This trap should be avoided.

When you prepare your own ‘as is’ first plan yourselves you are in a better position to contract out for services that you know you want, and you are in a better position to evaluate the service you receive. In other

words, you stay in control!

(2) Your staff are much more likely to own the asset management process if they get involved in this early stage. The ‘first plan’ should not be ambitious – it is simply documenting the status quo. It is this first plan that creates understanding. Experience shows that a good 75% of first plans developed externally *never get used* - they just sit on the shelf.

Second and Subsequent (Improvement) Plans, however, are a very different thing. Here is where you can really benefit from your consultants’ knowledge and modelling expertise.

The Role of the Second+ Plans

The role of the portfolio wide asset management (improvement) plans is to determine how many and which properties are to be expanded, modified, reduced, sold off, acquired, or maintained as is – according to the strategic requirements of the agency. This broad plan is then used to develop plans for the individual properties. Or, at least, this is the way it *should* happen.

Individual Property plans

But often, individual property plans are developed in the absence of an overall plan. Practical managers, unable to work in a vacuum, develop them as an operational tool but the assumptions that underlie these plans may not be consistent with the strategic requirements of the agency. This is how we get stories of school playgrounds being resurfaced only months before the school is closed, or a building renovation being made redundant six months later by a major organisational shift.

Elements of the Improvement Plans

The basic elements of the “first plan” were chunking, dimensioning, recording and stating. The elements of the more complex Improvement Plans are as follows. These have been adapted from the Wellington City Council’s AMP for Sewerage Infrastructure Assets, with thanks.

❑ **Purpose:** Specifies the purpose of asset management and the objectives against which the success of asset management planning can be judged. Amongst the WCC objectives are: providing reassurance to stakeholders that the assets are being well managed, ensuring lowest life cycle cost, and providing a framework for monitoring performance, evaluating service levels, planning, prioritisation and risk minimisation.

❑ **Service Objectives.** What aspects, levels of service are most valued by customers? How well are these being met? How much are customers prepared to pay for enhanced services? The plan defines and determines service levels. This is not an easy task. Two things you can do:

◆ Take part in the service level survey attached to this issue. (If it is missing you will find a copy on the web at www.amqi.com/survey.htm) and watch for the results down the track.

◆ Refer *AMQ International*, #7 Nov 15th 1998 on a special set of tools (STM) to determine service level requirements for buildings (including statutory obligations) and to match these, precisely, against the performance characteristics of buildings. The principles behind the matching questionnaires prepared by the International Centre for Facilities in Canada, can be applied to non-building areas. Dean Taylor’s pilot study on roads reported in the last issue takes the same basic approach. The STM tools are widely used in North America and are currently being incorporated into ISO 1000 quality standards.

To find out more, see www.amqi.com/icf.htm

❑ **Planning Understanding.** Current status, strengths and weaknesses of current AM systems, processes and techniques utilised (SWOT analysis). This is also the place for environmental scans (internal – looking at the constraints and conflicts that will affect your planning within the organisation; and external – e.g. the current phase of the market, likely changes in legislation, etc.)

❑ **Asset Understanding.** Elaboration of the chunking and dimensioning exercise of the “First Plan” – a brief description and history of the asset that puts the asset issues in perspective. Analysis of current condition, performance and asset value. This is where you start developing condition analyses if you haven’t already got them and also where you use the information from mandatory valuation exercises to get a better understanding of the asset – its financial performance, its condition, & alternative uses.

❑ **Strategies** Here is where you spell out your strategies for planned maintenance, unplanned maintenance, rehabilitation, upgrading, and development – explaining each strategy and activity in terms of its furtherance of the service objectives.

❑ **Financial planning** This section contains the recommended short and long term budgets required to implement the AMP. More advanced plans will contain detail of consequences if the recommended activities are cancelled or deferred. Here is where you find the results of renewal forecasting and risk management exercises.

❑ **Development of the Plan** Here is where you anticipate improvements in the plan itself. It contains an implementation programme for the development, review and auditing of the plan.

Coming up in the next issue! Translating the Strategic Plan into Operational Asset Plans.

Understanding Life Cycle Costing – *From Both Sides of the Equation*

By Mike Smart, Manager of Corporate Strategy, Rail Access Corporation¹

Two sets of life cycles

Life cycles affect asset management in *two* distinct ways. Assets have physical life cycles which must be planned for, costed properly and brought into the pricing matrix, the supply side of the equation. Equally important are the life cycles of the ‘products’ or services of the asset. Product lives, determined by changes in demand, may be very different from the physical lives. Asset managers must account for both.

The “product”

Take rail as an example. The Rail Access Corporation (RAC), established 1 July 1996, is the owner of all essential public rail infrastructure in NSW, excluding railway stations and some freight terminals. The RAC manages its portfolio, constructing new lines, renewing existing lines and maintaining the track and it sells its ‘product’ - access to the network - to train operators such as CityRail, Freight Corp, National Rail, Great Southern Railway, BHP, Countrylink, and others.

The RAC adds value (and earns its living) by creating conditions whereby rail increases its share of interstate freight and traffic volumes. Asset management IS the RAC’s business.

Physical Component Life Cycles

The principal hard asset of a railway infrastructure business is the track itself, along with the structures forming the right of way, and the signalling systems controlling the flow of traffic. Roughly half the maintenance task falls into the category of major periodic maintenance (MPM); cyclic renewal or maintenance activity in which the cycles are longer than 12 months. In fact the

most important renewal cycles are often much longer than 12 months.

Many Life Cycles Are Dependent on Usage. Timber sleepers are renewed every 15-25 years, depending on climate. Rail life is traffic-dependent, broadly within a range of 300-400 million or more gross tonnes, depending on curvature, rail weight, and other factors. Translating this into years is all important. Rail is replaced at 5-10 year intervals in the Hunter Valley coal system, 10-20 years in the Sydney commuter system, and on many pioneer lines which have not seen heavy use, the original track laid more than 100 years ago is still fit for purpose.

Predicting Usage – Product Life Cycle Analysis

The media comments that rail transport is not what it once was. The rail network in NSW is more extensive than in other states. When it was constructed 140 years ago rail was a rapidly growing industry. At the time, rail enjoyed a dominant market share in virtually all markets involving medium or long-distance travel. But the development of air travel and competitive road transport has eroded some markets. In all end-markets the rail mode of transport has moved beyond its growth phase. In some end-markets it has passed maturity and commodity phases and either begun or completed a profound decline (time critical parcels, country link, general freight). In other end-markets, rail transport has matured as a ‘product’ and found a sustainable niche at still dominant market shares (eg urban commuters to Sydney CBD, coal).

¹Condensation of a paper to the IIR Conference, “Asset Management in the Public Sector” Sydney Sep 1998

Integrating Product Life Cycle Analysis and the Business Plan

Marketing plans at RAC distinguish between main end-markets served by rail transport. The drivers of utilisation are different between urban commuters, export coal, interstate general freight, export grain, minerals, intrastate general freight and long-distance passengers. But they depend in each case on rail's current competitive position versus road, sea or air transport.

Different end-uses, different drivers

For example quality factors, such as reliability, are critical for urban commuters. The ability to cater for volume growth is a key factor for export coal. Interstate general freight is extremely price sensitive. To be successful the utilisation strategies for each market segment must consider this issue.

Product Life Cycles Impact Physical Life Cycles

Usage data (from product life cycles) impacts Component costs (in physical life cycles). Usage data is important both for utilisation and cost measures. The connection to utilisation is straight forward but the connection to costs comes about through the distinction between fixed and variable costs. In the railway infrastructure context, variable costs are the costs of those activities that increase with usage. For example, replacement of rail, ballast, cleaning, tamping and lining, track inspections are all activities which are driven fairly directly by usage.

The Links between Fixed Costs and Variable Costs are Cycle-Related

The majority of costs are in the fixed category. Allocation of these fixed costs to different end-users affects their costs and their competitiveness and this, in turn, affects us-

age. Thus allocation of fixed costs will impact on variable costs. This is a complicated equation that needs to be managed to derive the optimum return from the track.

Life Cycle Costing as a tool

Given the highly cyclical nature of renewal costs, it is essential to plan for the whole of life costs, to forecast cash flows far into the future, and to educate customers about the asset cost cycle. Customer understanding and acceptance cannot be overlooked. There are often temptations, especially when the asset is in better than average condition requiring little immediate expenditure, to reduce access prices. However this type of behaviour will establish unrealistic future expectations in the customer's mind and inevitably lead to a catastrophic price shock when the accrued renewal expenditure falls due.

Thus a disciplined and credible life-cycle costing system is valuable for several reasons:

- It assists maintenance planning
- It assists business planning
- It assists financial planning
- It facilitates customer understanding, and
- It permits sustainable pricing.

RAC's infrastructure cost model takes into account both physical and product life cycles. It has to. It needs to predict usage in order to predict costs. And it needs to predict costs to develop a sustainable long term cost picture. RAC may be a monopoly provider of rail infrastructure in NSW but rail *traffic* has no such monopoly. RAC can price itself out of business. Proper life cycle cost modelling is essential to RAC's success.

Next Issue: Increasing shareholder/community value is what asset management is all about: in the next issue, we look at the RAC's asset related strategies for improving shareholder value.

Inquiry into Service Levels

The short, 2 page, survey with this issue seeks to

- Establish a baseline for the current use of service level determination
- Gather examples of application

Please take part. You can post or fax your responses, or if you wish, you may enter your responses directly on the form found on the asset management website www.amqi.com/survey.htm

(If the survey form is missing from this copy, please use the website or email the editor at info@amqi.com)

Examples of application are particularly valuable - send them and get mentioned in despatches!

Results will be published in *Strategic Asset Management*.

Solution to the Mandatory Depreciation Dilemma : new web discussion on www.amqi.com

A propos of the article in Issue 6 "Funding Depreciation Now Mandatory for New Zealand Councils", Vivek Kangesu, Townsville, writes:

"What are the options for funding asset replacement? Is it feasible to spend the recovered depreciation on new capital works as far as they create more income?"

What are the options for funding of asset replacement?

The current push for mandatory depreciation charges has been fuelled by the belief by some that charging for depreciation will provide a fund for replacement and reverse this pattern of neglect. It is, however, merely the recovery of a cost and there is no requirement on councils – or other agencies – to spend monies recovered from depreciation charges on renewal and replacement. Also there is no limitation on councils against using ordinary rates and taxes, or borrowings, for renewal purposes, and they do. Renewal expenditure can be funded in exactly the same way as new capital.

So why is mandatory funding of depreciation a problem?

It is a matter of getting depreciation "right"

- Traditional depreciation over-recovers on long living infrastructure assets.
- Funds recovered many years before they need to be spent to maintain *required* capital, tend to be unrecoverable when needed.
- The temptation is to use the funds to buy more assets and *to increase the level of capital stocks to unsustainable levels*.
- Some replacement capital projects tend to get less rigorous evaluation (since the money 'has' to be spent on renewal anyway!)
- When there are large surpluses of funds over need, this
 - reduces the incentive for efficiency
 - requires an 'operations' agency to put major effort into 'finance and investment' for which, in general, it is ill-equipped

How can these problems be overcome?

"Condition Based Depreciation (Renewal Annuities)" was developed to overcome these and other problems of traditional depreciation applied to infrastructure assets (those assets which are 'renewed' rather than 'replaced'). To find out more about this tune in to the

**new discussion forum starting this week
on
www.amqi.com**