



Morgan-Whyalla Pipeline, South Australia.

ASSET MANAGEMENT AS A QUEST

1984-1993

Dr Penny Burns

Chair, Talking Infrastructure Association

Chapter One: How Asset Management Started:

Question 1: How much does it cost to supply water and sewer services to South Australians?

He can't do that!

It was April 1984 and Don Hoggood, the Minister for Water in South Australia, had just announced that he was going to charge irrigators what it cost to supply water to them. Instinctively I said, "He can't do that!"

"Of course he can," my corporate planning colleagues replied. "He's the Minister, he can do anything he likes."

“I didn’t say he wasn’t *allowed to*. I just said he *can’t*. He doesn’t have the information. WE don’t have it to give him. We don’t have any capital costs and even our recurrent costs are dicey.”

At that stage I had been with the EWS (Engineering and Water Supply) department, South Australia’s water authority that was responsible for the entire state, for about 15 months. I had been working on irrigation issues such as river salinity, water allocations and transfers, but it suddenly struck me that I hadn’t worked on costs.

It hadn’t been necessary: water prices were set politically or to achieve policy ends, but they had never, at least until this announcement, been based on costs.

Sign of things to come

What I didn’t know then was that this decision by the Minister for Water was a harbinger of major changes that would spread across the public service over the next ten years. The full costs of infrastructure were beginning to be identified as the post war boom in building infrastructure transitioned to the management of that infrastructure. Continued expansion wasn’t sustainable. Thatcher and Reagen restructured their economies in ways inspired by Milton Friedman’s monetary theory. In doing so, they looked to transferring costs onto users and other beneficiaries.

It is impossible to understand the development of asset management in the absence of an understanding of this pivot point in economic history. The private sector had met market demand and could no longer expand its marketshare by innovation. Instead it began to look to expand into the well-funded public sector. In doing so its advocates argued that the private sector were better managers, and advised that government trading enterprises be transformed into self-funding corporate bodies. These presented an opportunity for private sector entities to acquire public assets, strip them and to profit enormously from poorly priced assets. Privatisation followed corporatisation and the private sector gained a secure foothold in what had previously been public sector roles and responsibilities.

This was the beginning of a long period during which efficiency trumped effectiveness, when minimising costs dominated service outcomes, and where physical assets were seen to be a call on limited cash reserves, were given a financial value and treated as if the social and environmental benefits were factored into the valuation. They weren’t.

Whether the unintended consequences of this approach can be turned around is now under discussion as we try to recover from the Pandemic. For the shift to managing the sustainability of infrastructure to happen, to put the effectiveness and social and environmental impact of infrastructure again front and centre, we will need to make serious changes to our infrastructure decision-making processes and this will mean asking a new set of fruitful questions, questions that lead to real improvement, not just change. So here - in preparation - I want to look back at the changes we have already experienced and the questions that inspired these changes 30 and more years ago.

How much does it cost?

Why, when it is so common in history for innovative ideas to be sparked by unexpected events and opportunities, has ‘taking advantage of opportunities’ developed such a

negative connotation? For the story of asset management is very much the story of community benefit arising from taking advantage of opportunities.

The above statement by the Minister for Water is a case in point. After we had examined why it was that we did not have the information that the Minister would need to charge 'what it cost to supply water to irrigators' - principally lack of information on our capital holdings - we realised that this equally applied to all the services we provided - water and sewer provision as well as such research activities such as investigation into rainfall in the arid north of the state.

So that afternoon I asked Alan Herath, our corporate policy branch manager whether he would like to know how much it was really costing South Australians to get their water and sewer services - not what we were charging them, but what it was really costing.

His eyes lit up and he said that he would very much like to know that. I wasn't really surprised; Alan was a very forward thinking engineer. After all, it was he who had decided that the department needed an economist and had appointed me to the position, the first EWS economist in the 110 years of its operations.

However, at this stage I started to have a twinge of doubt since I didn't know how such an inquiry by corporate planning might be interpreted by the other branches and divisions. Fifteen months in the job had given me enough insight to be aware of internal politics but not enough to be sure of working my way through them. So I tentatively suggested perhaps he might like to think about it overnight. He did, and the following morning was still of the same opinion.

So the game was afoot.

Or was it? I now had to figure out what our capital costs were. A little bit of exposure to the accounting system by this time had shown that our records were still hand written on file cards (this was 1984). Moreover, on these cards, an expenditure of \$500 in 1984 was considered to represent the same amount of acquisitions as it would have in 1964 or 1944, regardless of the changing dollar values. No distinction was made between capital acquisitions that replaced something that had worn out or failed, and those that expanded the stock. When an asset failed and was withdrawn from service, its value was not removed from these financial records.

This made the financial records extremely suspect and I was reluctant to use them, or even to approach the Finance Section for assistance, for I imagined that if I did I would be taken by the hand down into the basement and shown decades of dusty file cards with the instruction (along with a wry grin) to 'help myself'. Later, I realised that these records only covered what the department had spent out of its own funds, and did not include the very large Federal grants that were made in the early years or the, also large, developer-funded assets we acquired as our suburbs expanded in the later years. I needed to find another way.

What had I let myself in for? As an economist it was natural to start by thinking about the numbers, the financial data, and I did. But everything I thought of came up against the problems listed above. It wasn't until I had exhausted all possible financial data

approaches and switched to focusing on what we were really talking about, namely the physical infrastructure, that I had a working alternative.

So one afternoon I sat down with our internal auditor and asked, "What different types of assets do we have?" In one session this brilliant fellow was able to sketch out on his whiteboard all the different classes of assets from pipes and sewers to treatment stations to pumps and dams, etc. What is more he also gave me the name of the guy in charge of each who would know most about them. In only two cases was it necessary to be passed on to another person, so his knowledge was very good.

Data collection

Then I had to start my own data collection. Here my difficulty was the engineer's natural tendency to dive into detail. Economists, as everyone knows, are really happy with approximations and assumptions. Not so the engineers, for obvious and sound reasons.

So I did what Paul Van der Lee, my section leader, had done for me when I started working in the EWS. Knowing that I had spent the previous 15 years in academia where perfection rather than timeliness was of the essence, he would say to me "Penny, this is a half day exercise", or "Just one page will do - and I need it by Friday". I much appreciated that. So I applied it to this job. I would generally say something like "This is a half day exercise. If you think it will take more: stop. Call me."

In 1984 we had yet to experience the mass downsizing of the public service and the loss of experienced engineers in the public service that was to come about five years later. The senior engineers I spoke with had had many years' experience in the department and knew their assets very well indeed.

I talked at length with each of them and we looked at what assets they had, how old they were, when they might need to be renewed or repaired. We spoke of the history of the assets, the peak construction periods, the impact of WW2 and its limitations on materials and qualified personnel, and other changes experienced since then such as the increasing involvement of developers in the choice, design and construction of assets that were then handed over to the department to manage. Fortunately, the department had just finished a commissioned engineering study of all its underground pipes and sewers, so a condition assessment of these assets was all to hand.

That meant that, in just three weeks, I was able to speak with each of the technical experts and get a very good idea of exactly what assets we had, what their condition was like, how long they typically lasted, and how old they were. So that was size, age, economic life and residual life accounted for.

(Incidentally, after I left the EWS for the Public Accounts Committee, a team of 7 engineers spent about 18 months to review the work I had done, in order to support the PAC study, and came up with the same figure for all the categories included, which pleased me. However, for their sake I am glad that they found an entire asset category that the Internal Auditor and I had omitted. It was not large, but it was significant.)

Costing the portfolio

With a reasonable handle on the physical state of assets, quantity and quality, the next step was to calculate the replacement cost of the assets. Fortunately, the EWS had an Estimations Branch whose job it was to determine the approximate cost of any renewal or extension project that the department was engaged in. This is where I realised the second of my two key advantages in being an economist. The first, as noted, was that, whereas engineers are trained to pay attention to the details; as an economist, I naturally looked at the big picture and was happy to work with assumptions and approximations. The second was that, not being an engineer, I was given greater leeway to ask the idiot question and I made full use of this.

My first idiot question: "How much does it cost to replace a kilometre of pipe?" The patient response: "What size pipe?" "I don't know, what sizes do you have?" He showed me a very long list of every size of pipe in the portfolio, along with the number of kilometres for each.

There were a handful with sizeable length and a much larger number with only a few kilometres each, so I said, "Let me have the cost for each of these separately, and then you can give me an average for the rest." "OK. In the city or in the country?" he asked.

Me: "Does it make a difference?"

"Sure it does, in the city we have to work around lots of traffic, dig up and replace sealed roads and work around an entire spaghetti of underground pipes and cables. The country is much easier, and we can often use the large earthmovers that we can't use in the city."

"I understand. So give me the costs separately for both city and country."

"Will do. Now," (and at this he had a wicked grin on his face) "through rock or through sand?"

If he hadn't grinned I would have been stumped, since I didn't know how I could tell which would apply. Instead I said "Do you generally know before you get there?"

He admitted they generally didn't.

"So what do you do?" He said, "We take an average". "Exactly! Then please take an average". We then dealt with sewers, pumps, dam renovations and treatment stations.

Those guys were so patient with me and I got excellent service from all the engineers that I dealt with. They were very bright, and I think they found dealing with an idiot like me a novelty. Certainly dealing with a female was a novelty. I was the only one in the entire department who was not a secretary, typist or tealady.

The final reckoning

At the beginning of this exercise in April 1984, most assumed that the value of our assets was around \$800 million. No one knew, of course, because capital was not recorded, but this was the amount of debt that the Treasury had 'allocated' to us and on which we paid interest and so, on the basis that if we had \$800m of debt we must at least have \$800m of assets, that is what most assumed - if they thought about it at all, and generally they didn't.

Not until we started looking into it. Then some thought it could be a bit higher and estimated \$1 billion. Alan Herath, my boss, thought it could be as much as \$3 billion; the others laughed at this, but he was the closest.

The final figure, the replaceable value of our assets, was \$8 billion! Or ten times the figure that most had initially assumed. The written down value was roughly 2/3 of this, but the replaceable value, of course, was what was relevant for asset management.

How could it be so much more than our allocated debt figure? There were a number of reasons: one, the allocation was just that, an allocation, it bore no relevance to asset values; two, we had from time to time repaid some of the allocated debt, whenever Treasury had requested it; three, it was a historic figure and did not represent current values.

These things, however, were dwarfed into insignificance by the amount of our asset stock that the Treasury or the department had not funded and thus incurred debt for. A very large part of our asset stock, including the 359 kilometre Morgan-Whyalla overland pipeline constructed during the war years, was funded by a grant from the Commonwealth Government. The 1960s saw the second of the large overland pipelines constructed and, in addition, at this time, when new suburbs were being developed at a rapid rate, developers would construct the necessary roads, water and sewer networks and then pass them back to the government to be maintained in perpetuity. All of these 'gifted' assets were valued in our books at a nominal - 'place-holding' - one dollar!

Once we had reasonable current replacement capital estimates this was not the end. To answer our initial question, we still needed to calculate annual capital costs, which required determining the rate at which our assets were being consumed (either by wear and tear, or by obsolescence) and we needed to consider the opportunity cost of having so much money invested in these capital assets.

So that's what we did next, and that gave us the opportunity to move onto our second question.

We called our study *The True Cost study*. This was not taken kindly by the CFO who thought it reflected badly on him. This was not our intention; we simply needed a term to differentiate our figures from those in the financial records.

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