

# A FIT FOR PURPOSE CORPORATE ASSET MANAGEMENT FRAMEWORK – DESCRIPTION OF A JOURNEY

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## Abstract

The District Council of Mount Barker in South Australia has developed a fit for purpose asset management framework. The framework is Council's first step in bringing all the key elements of asset management (corporate objectives, data, knowledge, tools, skills and plans) together. Rather than just creating hardcopy asset management plans, this Council focused on "grass root" level development of asset management capabilities and the incorporation of realistic, achievable levels of service into Corporate planning. The outcome was guided by local legislation and the principles published in the International Infrastructure Management Manual.

DCMB has achieved a very pragmatic approach to asset management planning. Of course, there is an endorsed asset management policy, a supporting strategy and a developing series of plans where the strategy articulates pathways to meet the policy objectives and the plans describe how service levels will be measured and delivered through asset provision, renewal, upgrade or disposal. However, first generation asset lifecycle prediction modelling and analysis is now being undertaken in line with agreed service targets, initially for roads, to effectively bring the elements of 'needs and affordability' together. Importance has always been placed on having reliable asset information to support this modelling, and in so doing, also ensuring asset valuations reflect true patterns of asset consumption and comply with Australian Accounting Standards.

The fundamental reason for success so far has been the high level of co-operation between Council staff particularly Engineering, Finance and Field Services. Ongoing support provided by ACEAM Pty Ltd has made the journey significantly optimal.

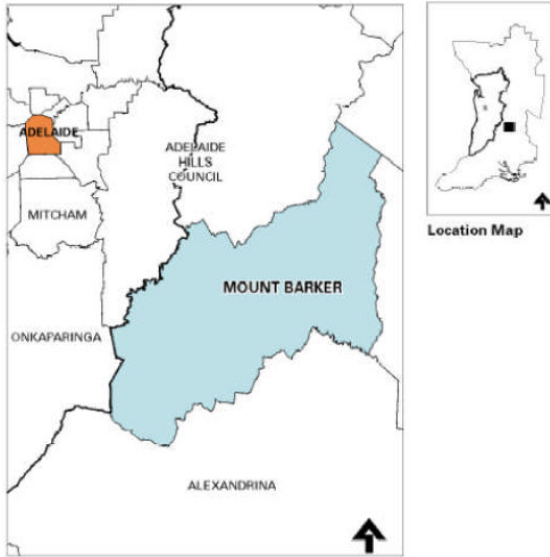
This paper documents the actions undertaken, lessons learnt, constraints and resource issues experienced by a Local Government asset management entity and outlines the ingredients required for a successful asset management framework.

## Key Words: Asset Management Framework Strategic Journey

### Introduction

The District of Mount Barker is located east of metropolitan Adelaide in the central Mount Lofty Ranges and covers an area of approximately 597 square kilometres. The District is 35kms from Adelaide and comprises fifteen distinct townships. The land use is predominantly agricultural with large areas used for crops, beef production, dairy

farming, horse keeping and poultry farms. According to Council's Community Strategic Plan (DCMB, 2008), at the time of the 2006 census the District's population was 27,612. With an annual growth rate of approximately 3.5% supported by rapid residential urban development, it is no surprise that the proportion of agricultural land in the District is declining.



The District Council of Mount Barker (DCMB) commenced an asset management journey with vigour in 2007. Budget provision for asset management planning was granted and resources were acquired to undertake the works. The key drivers for commencing this journey were clear:

- South Australian legislation prescribing the development of asset management plans,
- Rapid population growth now and into the future placing pressure on service delivery targets through existing assets, and
- A search for financial sustainability and a greater understanding of what we were managing now and possibly likely to manage in the future i.e. input into the Long Term Financial Plan.

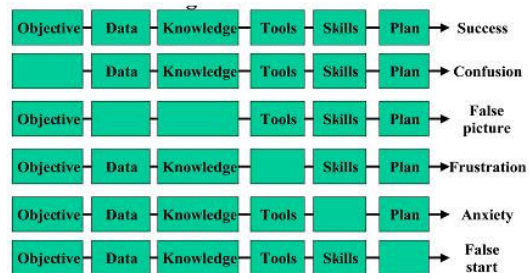
The growth level stipulated earlier is bringing with it a large number of gifted assets which when compared to existing assets is creating a disparity between the old and new subdivisions. Trying to balance service needs across the district is a challenge for this Council into the future and hence the reason why an asset management framework is required to support good decision making.

The asset management framework incorporates elements of best practice. It is based on the principles contained in the

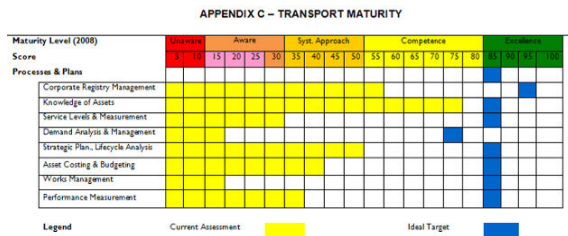
International Infrastructure Management Manual (IIMM) and is enabling in nature. It has the following considerations at its core:

- Service prioritisation is undertaken on organisationally adopted standards
- Cost versus service models are used for determining future options for service delivery
- Consistent and reliable funding decisions and capital work decisions are made using corporate decision criteria
- It utilises a common corporate knowledge data-base, accessed and maintained by all business units that provides for the basis of all decision making
- Resourcing the right structure in key asset management functions
- Balance of competing demands between existing and new assets is objectively assessed.

The journey undertaken by DCMB to implement a fit for purpose asset management framework has not been just focussed on software or some management processes or engineering or financial or risk management elements. Rather, the journey has attempted to encompass process, methodologies and tools in line with organisational objectives to produce a balanced and practical outcome that would position them for future success. The balance was achieved by embracing inputs from social issues, engineering considerations, future demand characteristics and financial constraints.



DCMB engaged ACEAM Pty Ltd (ACEAM) in 2007 to undertake an Asset Management Maturity Assessment against the key asset management elements (considered critical for success) in the organisational governance model shown above. The results of this analysis helped determine the ten year strategy for asset management and set the immediate priorities for improvement.



The following describes how DCMB has addressed each of the key elements of the asset management organisational governance model over the duration of its journey.

### Key Element: Objectives

DCMB identified early on that it needed to consolidate its asset management processes and tools so that future actions and decisions would be optimal and focused on real needs. The accepted premise was that there will never be enough to do everything we want to do, so it is important to do the best with what we have. The objectives were clearly laid out:

1. To understand service delivery in real terms and set up a framework for measuring service delivery.
2. To implement a corporate knowledge database that encompassed all infrastructure assets and their service delivery objectives.
3. To have endorsed and documented asset assessment manuals that will provide for consistent, reliable and repeatable asset performance and service delivery data.
4. To have asset performance and asset consumption models for all infrastructure classes that can be used to reliably predict future asset

condition, future asset adequacy and capacity to provide desired service levels.

5. To have asset financial models for all infrastructure classes that can be used to predict investment options, funding trade-offs and maintenance/capital needs.
6. To encourage and foster the principles of asset management practice throughout the organisation that will enable engineering practice, social needs, risk policies and financial data to be integrated in decision making and prioritisation.
7. To use the asset valuation process as a means of measuring asset management effectiveness.

### Key Element: Data and Knowledge

DCMB acknowledged early in its journey that good, robust data was the key element of informed decisions. They had several copies of asset data in various spreadsheets and databases and very little corporate ownership to maintain it. There was very little confidence in the accuracy or currency of the data and limited information in terms of condition, capacity and adequacy of assets.

However, as is the case in most local government authorities, there was an incredible amount of knowledge that resided with the field staff, some office staff and in hard copy documents.

In consultation with ACEAM, DCMB established a project based approach to update asset inventory and condition data to satisfy engineering, financial and economic reporting. The project had to be cost-effective, yet timely and with little impact on regular works. Internal staff were trained to undertake the audits in a safe and effective manner. The benefits of using internal staff over contractors were numerous and included:

- Opportunity for staff to up-skill,

- Retention of new asset knowledge by Council staff,
- Stronger relationships forged between management and field staff, and
- Staff gained a greater awareness of the need for asset management and understood the importance that asset management is not a silo function within the organisation.

Previously DCMB had engaged contractors to undertake asset condition audits, typically for roads and footpaths. History had shown that the results from these audits was less than satisfactory due to the use of a capture methodology that was poorly defined at the beginning of the project (i.e. not really knowing what the outcome would be or perhaps how the information would be used) combined with a lack of quality control during the audit.



DCMB identified that asset audits were an excellent time for them to identify valuable asset knowledge which had been retained by staff but never shared. This identified knowledge related to asset construction techniques, asset performance and customer satisfaction. This was particularly important for DCMB that this knowledge be systemised quickly so that it could be shared with future generations; the average age of the field staff was high and pending retirements put the retention of this knowledge at risk.

Asset inventory data had to be collated quickly using whatever asset registers were available with validation from field staff and hardcopy plans. Considerable on-site investigation was needed to identify, locate

and describe the function of assets. Handheld technology was introduced at this time to expedite the process which took over twelve months to complete. Trimble's differential GPS and Nomad computers ensured all assets were accurately located and identified. The outcome was asset information that DCMB had total confidence in and from this accurate inventory, financial valuations were determined.

DCMB then began a series of asset condition, functionality and capacity assessments. The staff knowledge of asset past-performance was utilised to collate repeatable asset assessment manuals. All assessment forms and manuals were developed in-house following a process facilitated by ACEAM.

4.10. DEFORMATION

SEVERITY	
LEVEL	DESCRIPTION
LOW	A MEAN DEPTH <25mm
MODERATE	A MEAN DEPTH OF 25 mm TO LESS THAN 50mm
HIGH	A MEAN DEPTH OF >50mm

EXTENT		
LEVEL	DEGREE	AREA AFFECTED
0	NIL	NO DISTRESS VISIBLE
1	NEGLIGIBLE	EVIDENT <2% OF TOTAL AREA
2	MINOR	EVIDENT BETWEEN 2% TO <8% OF TOTAL AREA
3	MODERATE	EVIDENT BETWEEN 8% TO <18% OF TOTAL AREA
4	EXTENSIVE	EVIDENT BETWEEN 18% TO <50% OF TOTAL AREA
5	EXTREME	EVIDENT >50% OF TOTAL AREA

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The assessment methods were site tested to verify that they were reliable and repeatable over time to provide a reasonable basis for asset performance monitoring. The manuals have been documented and endorsed for future assessments and provide the basis for staff training. Whilst the asset condition appraisal specifically targeted safety and technical attributes, the addition of functionality and capacity data where possible provided the basis for DCMB understanding the asset's potential to meet service needs.

Finalising this asset information repository meant the Finance and Engineering units could collaborate to develop a comprehensive asset valuation, capitalisation and depreciation methodology that was based on the knowledge of both condition and age based consumption profiles. Clear definitions of what constitutes capital and maintenance items were documented in an

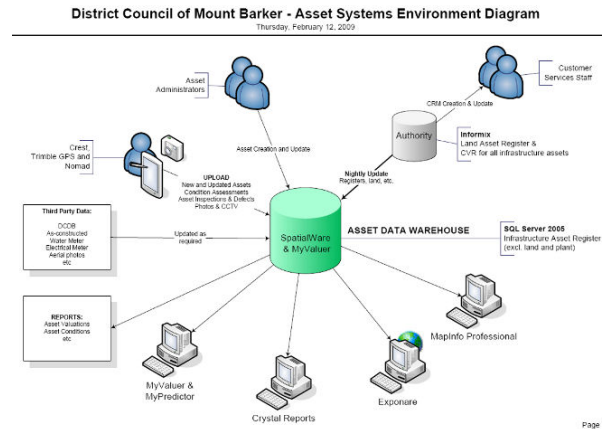
Asset Accounting Policy and enabled appropriate capitalisation and depreciation in line with relevant Australian Accounting Standards. In 2008, DCMB released a simple work order system to record and monitor works undertaken by activity and location that could be linked to the asset to aid the capitalisation process.

Using the schedules of rates from tendered and other infrastructure works delivered in the District; asset unit rates were developed and benchmarked. Remaining lives of assets were developed taking into account both age and condition of the asset. These remaining life profiles were tested by undertaking site inspections of a sample of assets to verify that they were within range of when Council would typically intervene for a renewal or upgrade treatment. By undertaking this process, DCMB formed realistic consumption models which provided input into determining the average long-term asset depreciation values. Residual values were defined and applied where appropriate.

**Key Element: Software Tools**

DCMB’s software setup was based on the simple premise that ‘if the processes and methods are sound and the data is right to drive our decisions, then tools will easily provide the power of technology for better decision making.’ The broad requirements for choosing software were; easy to use and administer, could integrate to other corporate systems, cost effective, secure and functional.

DCMB established an information systems strategy early on which outlined the relationship between best-of-breed systems designed to meet the overall objectives of Council. This strategy was referenced to the asset management system functionality definition (INGENIUM & IPWEA, 2006) that describes the critical elements of an asset information system. DCMB’s system strategy outlined the relationship between the asset management, GIS and finance systems and provided impetus for the IT hardware strategy.



The software tools are tailored to suit DCMB processes and local conditions. For example, the engineering analysis of asset assessments is based on local specific condition indices, the financial valuations are based on local specific useful lives and consumption models and the deterioration profiles are based on asset specific failure modes that have been developed and calibrated for DCMB’s environment.

All infrastructure asset data is stored in a single corporate database; Assetic’s MyData. This database includes inventory details, spatial information, legislative requirements, risk assessments, asset inspections, asset condition, capacity, functionality and financial valuations. MyData is installed on the desktops of all staff that need quick and easy access to reliable asset information. Application security and edit roles are assigned to each user. This configuration ensures that data duplication errors are mitigated and unauthorised edits eliminated.

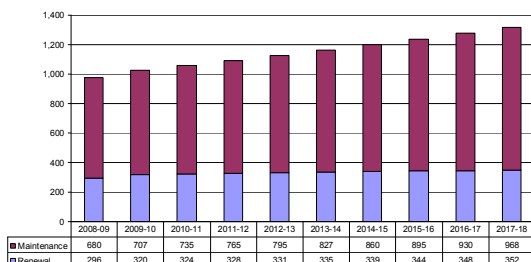
DCMB is a MapInfo site. They have effectively used the spatial system to not only validate the location of every asset but also provide a seamless mapping interface to the asset data contained in MyData. This has enabled staff that prefer to interact with a map window to find an asset and bring back its details in the one application. As a result there is widespread use of corporate knowledge particularly at operations level.

MyData was chosen to store all asset related financial information. It provided automated valuations and annual financial reporting, including an audit trail from one valuation period to another, which complied with the

current AASB116 requirements. Through the development of its remaining life profiles, DCMB was able to configure MyData to calculate depreciation reflecting the pattern of consumption for each asset.

DCMB deployed Assetic's Strategic Asset Management module, MyPredictor, to predict future asset performance, future service levels, future funding needs and future asset condition. It set up specific models that were based on local knowledge, local criteria, local parameters and environment. The models developed, primarily for road assets, were able to provide the following information over the chosen ten year period that was then used for Long Term Financial Planning:

1. What level of funding is required in future to provide desired levels of service?
2. What is the minimum maintenance need now and in the future?
3. What is the present state of the asset in terms of condition, functionality and adequacy?
4. What is the future state likely to be under a range of funding scenarios?
5. Which assets are potentially at replacement phase?



In the next stage of the journey, DCMB plan to use the tools it has to manage (prioritising, scheduling and planning) future maintenance and capital works on the basis of risk, intervention levels, and response times. Work history, including inspections and defects, will be able to be stored against the

asset in MyData for future reference and analysis.

### Key Element: Skills

DCMB is committed to recognising staff skills as one of the most critical elements to keep the process of asset management planning on a constantly progressive path. To date a number of DCMB staff have been trained and accredited in the application of asset management practice, asset inspections and assessments. Where possible these qualifications are competency based and certified to provide real opportunities for professional development. Staff are also encouraged attend seminars and conferences relating to the management of infrastructure assets.

In order to increase the overall level of expertise, new roles are stipulating a basic understanding of asset management at a minimum. Candidates that can offer skills or experience in asset management are looked upon favourably.

DCMB also understands that it cannot close the skills gap immediately and that it will take time to build a team that is appropriately resourced and trained. In the interim, they utilise ACEAM as asset management practitioners to help close the skill gap, particularly for strategic planning and capital works determination.

DCMB has a number of strategies to retain good staff. Senior management are aware of the costs involved in hiring and training new staff and so provide an excellent work environment and conditions in order to retain staff.

### Key Element: Plan

The principles of DCMB's asset management plans are simple and effective. Service needs form the basis of service delivery; service delivery determines the desired condition, capacity and adequacy of the assets. The benchmarks of asset performance are balanced between physical condition, community needs, social priorities and budgetary constraints. The plan simply brings the elements of data, knowledge, skills and

tools together to provide a cohesive mechanism for driving good decisions. As a consequence, corporate processes are being established to enable the following:

1. Consistent asset assessment over defined periods of time
2. Asset provision standards that aim at providing fit for purpose infrastructure, particularly at the time of designing new assets
3. Asset maintenance standards that aim at responding to service needs based on interventions that are community focused and affordable
4. Budgeting processes that allow for needs based budgeting in line with predicted future needs
5. Capital and maintenance allocation process that allows for effective distributions to minimise future service loss
6. Asset valuation and capitalisation methods that are based on defined asset consumption models.

In addition to asset management plans, the following documentation has been prepared by DCMB to support the framework:

- Asset Management Strategy
- Asset Management Policy
- Asset Accounting Policy
- Maintenance Service Level Manuals

Plumbing (Replacement of fittings and repair of leaks)



Task	Intervention Level	Response Time				Performance Indicator Targets
		Hierarchy	Inspection Time	Make Safe	All Other	
Replace fittings like pans, toilet seats, taps, washers, cisterns and repair leaks. Clear Blockages	Kitchen and/or bathroom fittings have been identified as leaking or not fit for use. Blockage reported. NB: Make Safe when leaks reported or identified as free flowing or major component failure (i.e. broken cisterns)	Premium	2 days	1 day	5 days	80%
		High	5 days	1 day	10 days	70%
		Standard	10 days	1 day	30 days	70%

- Asset Condition and Functionality Assessment Manual
- Risk Assessment Manual

### Conclusion

The culture within DCMB embraces the combination of social, engineering and financial criteria in decision making which makes corporate planning more optimal in challenging times. DCMB realise that good asset management does not mean having a lot of money to do everything, but rather making the right decisions so that the best can be achieved within available budgets. DCMB's journey is a good example of how relentless commitment to the fundamental truth of best-practise asset management practice can bring about positive changes in organisational culture. Whilst DCMB's capabilities are still maturing, to date there is evidence of widespread internal enthusiasm and support for asset management leadership and significant interest from outside observers. Continued collaboration between DCMB's Engineering and Finance business units, partnering with ACEAM and adhering to an endorsed asset management strategy will ensure the journey toward a fit for purpose asset management framework continues with a higher than average chance of success.

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## References

Association of Local Government Engineering New Zealand Inc. (INGENIUM), Institute of Public Works Engineering of Australia (IPWEA) (2006), *International Infrastructure Management Manual (IIMM)*, version 3.0, C1-C5.

District Council of Mount Barker (2008), *Draft Community Strategic Plan 2008 – 2018*.

## Biography

Phillip Burton is currently the Manager of Assets and Contracts for the District Council of Mount Barker in South Australia. He is responsible for managing all infrastructure asset classes as well as planning the maintenance of Council owned buildings and overseeing the management of contracts and tenders. He has a Surveying and Water Resource Management background and previously worked for SA Water as a Project Manager. Phil enjoys endurance events and participates in long course triathlons. He draws a number of parallels between this and Asset Management Planning; it's a journey, not a race, and if done well, the rewards at the end are well and truly worth it!

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In addition to his role with ACEAM, Ashay is currently an Adjunct Professor at Bond University in Queensland where he delivers courses in Asset Management for their Postgraduate Degree Course.

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