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Great Lakes Council

Report for Asset Management Review

Part 2 Review of Asset Management Capability

February 2008



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1. Executive Summary

With \$1 billion in assets, Great Lakes Council has a significant portfolio of infrastructure to replace and maintain. This places considerable pressure on Council resources and a demand for increased funding each year to keep up with ageing assets.

Funding for infrastructure maintenance and renewal has been described as the biggest management challenge in local government (Allan 2006, Inquiry into financial sustainability of NSW local government). Great Lakes is making positive steps towards addressing this challenge, and has commissioned Review Today to assist them in ascertaining an up-to-date view of their financial status, including establishing the condition of their infrastructure portfolio for the purpose of identifying future funding requirements.

This report is concerned with GHD's review of Great Lakes Asset Management systems and processes on 11th May 2007.

Our review took the form of a quality assessment, supported by GHD's TEAMQF (Total Enterprise Asset Management Quality Framework) model. TEAMQF is a gap analysis tool that is designed to establish collective confidence levels in a client's ability to deliver sustainable Asset Management solutions through developing and implementing 'appropriate' Asset Management plans. The assessment consisted of a desktop exercise and was based upon openness and honesty of the participants. It is not verified independently.

In general, we found that Great Lakes is a technically astute and forward looking organisation, who appreciate many of the issues that they face with respect to Community Infrastructure Asset Management. Based on the current organisational structure and practice, Council has a good handle on the Asset portfolio thanks to its committed and enthusiastic team of Asset Manager's. Whilst this is the case we believe that gaps exist in existing policy and processes that will restrict potential improvements in Council's ability to make quality decisions in regards to its assets. This is by no means a criticism of Council, on the contrary we feel that they are performing particularly well given the level of sophistication of the Asset Management systems in place.

It does highlight that the changing demands upon community infrastructure Asset Manager's calls for faster reaction and tighter controls, that could be enabled by more sophisticated AM systems and processes.

Great Lakes is in a good position to concentrate on building an improved Asset Management capability going forward and it critical to ensure that the most beneficial path of improvements is followed. This will ensure that Council's limited resources are channelled most efficiently into those areas that offer the best payback and ultimately will facilitate the delivery of sustainable Community Infrastructure.

On concluding this review, GHD recommend that Council concentrates on harnessing existing Asset Management capabilities and assigns some resources to identifying and formalising AM policy and practice that will define "how Great Lakes manages its assets" going forward.

To that end GHD has identified, prioritised and scoped in general terms, 4 Asset Management Improvement Projects to be pursued by Council:

- » Review and Formalisation of Policy, Practices and Process
- » Asset Data Requirements Definition



- » Review Of Organisation and Structure
- » People
- » Develop Strategic Asset Management Plans



2. Introduction

2.1 Objectives and Scope

This high-level strategic review is intended to provide an overview of Great Lakes Council's Asset Management systems and processes and subsequently its capability to produce a total Asset Management Plan that will ensure any improvements made at this stage can be sustained going forward. To achieve this we set two main objectives for the review:

1. To measure Council's Asset Management practices against Best Appropriate Practice as determined specifically for them.
2. To develop a prioritised program for improvements to Council's Asset Management practices, based on meeting business objectives.

2.2 Considerations

This review involved an assessment of Council's Asset Management systems and processes against GHD's Total Enterprise Asset Management Quality Framework (TEAMQF). The assessment comprises of a workshop with management and staff, incorporating:

- » A quality assessment process including all relevant Asset Management quality elements.
- » A balanced scorecard approach that prioritises element ratings using the Council's business drivers.
- » A consistent and repeatable quality rating system capable of being applied to other businesses, or to measure improvements over time.
- » A focused preliminary improvement program.

The asset base managed by Council at the time of this assessment comprised:

- » Roads;
- » Storm Water and Sewer assets;
- » Timber Structures;
- » Concrete Structures;
- » Buildings;
- » Commercial Businesses;
- » Recreational assets;
- » Natural assets.

The findings from this review are "honesty" based to a large extent, and significant independent verification has not been undertaken of specific Asset Management activities.



3. TEAMQF Framework and Assessment Process

3.1 What is TEAMQF?

The “Total Enterprise Asset Management Quality Framework” (TEAMQF) has been developed by GHD over several years to assess the ability of asset rich organisations to manage their assets from a whole of business perspective.

The key question is “How confident are we that the right investment is being made at the right time?” TEAMQF attempts to answer this and provide a path to sustainable improvements in Asset Management. Application of TEAMQF leads to:

- » Higher confidence in the predictability of outcomes from capital and operating investment.
- » Sustained belief that improved performance is being achieved cost effectively.

The framework is continuously evolving to meet the demands of business and to reflect the world’s best practices in Asset Management assessment.

TEAMQF includes two key aspects, a “Gap Analysis” and the “Element-based Assessment” concept.

3.2 What is the “Gap Analysis”?

The gap analysis allows an organisation to understand “where it is relative to where it wants to be” in terms of Asset Management practices, within a specified period of time. The gap is the distance between the current and desired future status of the organisation.

The gap analysis allows an organisation to compare itself to those Asset Management practices that are considered reasonable and relevant for that particular organisation to embrace. This is not necessarily ‘World’s Best Practice’, and which may not be appropriate for the specific organisation due to factors such as its commercial objectives, its geographic spread, its asset profile, its regulatory environment and/or its urban or rural base. The important issue is to identify ‘Best Appropriate Practices’ (BAP) - those practices that fit the organisation’s needs in the most effective and efficient way.

The gap analysis serves three fundamental functions that match this review’s objectives:

- » To assess Asset Management processes, practices and systems against Best Appropriate Practice for the organisation.
- » To identify processes where the organisation has achieved excellence i.e. Best Appropriate Practice.
- » To identify processes where the organisation requires improvement, guiding future action toward and measuring progress against Best Appropriate Practice.

3.3 What is an “Element-Based Assessment”?

A typical business is made up of a series of key organisational processes that must be managed if the organisation is to thrive. These processes are the source of GHD’s benchmark for assessing the current state of an organisation’s Asset Management practices. GHD has broken down a typical asset intensive organisation into 7 primary quality elements, 23 secondary elements and 173 tertiary quality elements. The 7 primary Asset Management quality elements are listed in Table 1.

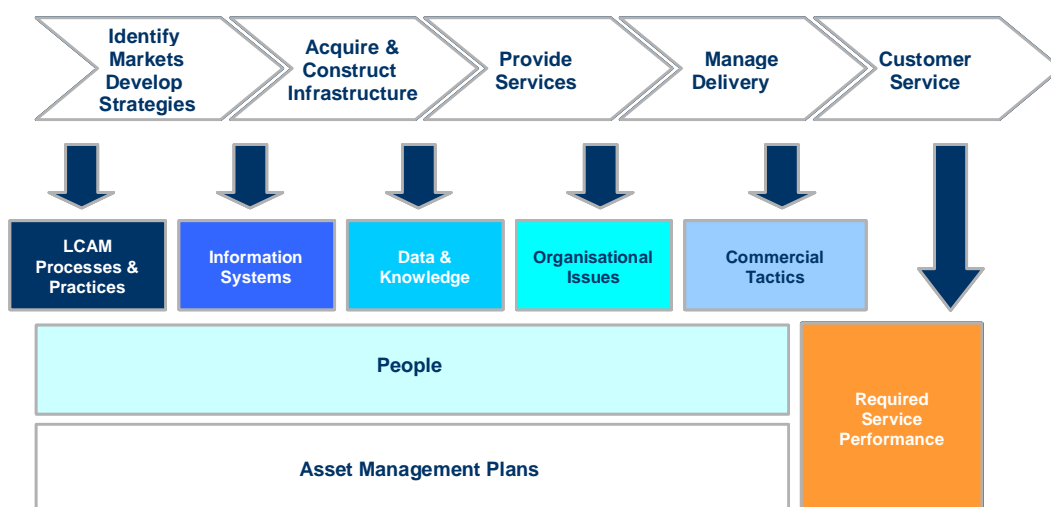
Table 1 The 7 Primary Asset Management Quality Elements

Asset Management Quality Elements	
1	Process and practices used in the completion of life cycle Asset Management activities
2	Information systems required to support the processes and practices and store and manipulate the data and knowledge as required
3	Data and knowledge of the assets and asset performance, their appropriateness, adequateness and reliability
4	Commercial tactics used to efficiently carry out the work identified by the processes above
5	Organisational Issues comprising the structure, roles and responsibilities that exist to support life cycle Asset Management
6	People Issues comprising the attitudes, skills and endeavour of staff involved in the Asset Management process
7	Total Asset Management Plans, which form the key outputs from the above inputs and processes

These seven primary elements are critical to achieving sustained performance of the organisation at the lowest life cycle cost. Each of the seven components adds value to the raw business processes consistent with regulations, customer demands and shareholder requirements.

All activities undertaken by a business should contribute to its value in terms of delivery. Each activity will be linked and form a component part of the business. Each activity will have a level of importance or weight measured by its contribution to the business. Figure 1 depicts the relationship between a typical asset based utility business and the seven primary Asset Management elements.

Figure 1 Key Business Process Chain – Typical Utility Business





Each organisation has a unique sense of the relative importance of the Asset Management quality elements because of their business, environmental, and social/cultural setting. By quantifying this relative importance through a relative weighting, the gap analysis yields the right balance of quality elements in order to prioritise improvements.

GHD has several weightings aimed at businesses during different phases of their path to sustainable Asset Management. GHD has developed a common weighting set for long-term sustainable Asset Management, which is used as a common benchmark between similar businesses. Other shorter-term business drivers from which weightings have been derived by GHD include:

- » Business efficiency
- » Growth or compliance capital
- » Renewals
- » Regulatory and pricing.

More than one weighting set can be developed to see the relative impact of changes in focus and to test the sensitivity of results. The audit process provides for the appropriate business drivers to be identified and for each primary and secondary quality element in the gap analysis to be weighted according to its contribution. The process is collaborative and can be modified at any stage.

3.4 What is the “Gap Audit Tool”?

The gap audit tool provides an interface for compiling, analysing and presenting information in a familiar and simplified environment known as a gap analysis chart.

There are 173 tertiary Asset Management quality elements that comprise over 1500 best practices associated with advanced Asset Management.

The scale of the gap analysis depicts progressive levels of Asset Management practice from 0 to 5 - from “Innocence” upward through “Awareness” and “Competence” to “Excellence.” Each level up the scale represents, as appropriate, better practices, data, information, organisation, and knowledge about the decisions being made.

The scale is somewhat like a ‘log scale’, that is, the effort required for an organisation to step from 0 to 1 is considerably less than to go from 1 to 5. This is consistent with the belief that early gains can be achieved relatively cheaply, but that considerably greater effort/cost is required to derive benefits as an organisation approaches optimum performance.

Each element is provided with a Quality Rating (QR) individually on the scale. The QR is an assessment of the current status of the business with respect to each element. It is estimated that the rating could vary in the order of 5 points in each of the quality elements - most ratings have been based on an assessment by GHD involving workshops and discussions and some document review with little verification.

The gap analysis also depicts the BAP rating as assessed for the business. The difference between the QR and the target or BAP, represents the ‘Gap’ between current practice and the desired short-term/ long-term states, respectively.



3.5 The Improvement Plan

The scores for each element are ranked to produce a prioritised improvement plan. The scores are a combination of the Gap (between the current status quality rating and the target or BAP) and the weighting assigned to the particular AM element.

This ranking is then considered holistically and improvement elements are manually aggregated to form logically grouped improvements projects. The projects are prioritised to reflect project dependencies and sequences.

3.6 TEAMQF Assessment Process

The process steps adopted for this Asset Management Review comprise:

- » Workshops with key managers and staff;
- » Determination of business element weightings (by GHD);
- » Understand and assess current performance levels in each of the relevant quality elements. Using this information we carried out:
 - BAP assessment, including setting appropriate practice and target ratings;
 - Development of an improvement program;
 - Preparation of a report.

3.6.1 Workshops

Our review consisted of a one-day workshop with selected management and staff from Council and the Asset Management Team to cover:

- » Business drivers;
- » AM Element Assessment down to secondary level.

3.6.2 Current Practice Quality Ratings

The information sources noted above were used to derive a quality rating for each of the relevant secondary quality elements, representing the current position of Great Lakes Council Asset Management systems and processes against a World's Best Practice rating of 100.

3.6.3 Best Appropriate Practice Quality Rating

Best Appropriate Practice is the justified sustainable business QR and is the QR that the organisation should be driving towards in the long term. Council expressed that they are comfortable with their current level of effectiveness, however are interested in working towards incremental improvements going forward. A QR of 100 is not practical or relevant for many organisations as this QR is considered World's Best Practice. BAP QRs have been assigned based on:

- » GHD's knowledge of government, council and other businesses gained from numerous previous assessments using this and predecessor Gap Analysis tools.
- » GHD's assessment of what is considered to be achievable and beneficial to the Asset Management Team in the long to medium term, given the identified business drivers.

- » Discussions during the workshops where target best practices were identified for the business, derived from specific detailed reviews and strategy plans, or determined from industry knowledge.

The difference between the current and BAP QR is defined as the 'gap' and has been used to define the organisation's improvement program.

3.6.4 AM Element Weightings

Primary and secondary Asset Management element weightings are applied to assist GHD in identifying priority areas for improvement. These weightings are pre-determined by GHD based upon our sustainable benchmark for a municipal organisation of Great Lakes's size. The primary and secondary weightings applied in this study are shown in the dark blue collum's in Table 2.

Table 2 Great Lakes Asset Management Element Weightings

Ref. No.	Primary Quality Element	Relative Weighting (Sustainable) %	Secondary Quality Element	Relative Weighting (Sustainable) %
1.01	Processes & Practices	30	Demand Analysis	15
1.02			Knowledge	8
1.03			Accounting & Costing	8
1.04			Strategic Planning	10
1.05			CAPEX Evaluation	15
1.06			Business Risk	6
1.07			Creation/ Acquisition	8
1.08			Rationalisation/ Disposal	2
1.09			Operations	10
1.10			Maintenance	12
1.11			Work/Resource Management	2
1.12			Continuous Improvement	4
2.01	AM Information Systems	15	Primary Systems	45
2.02			Secondary Systems	20
2.03			Tertiary Systems	20
2.04			Systems Issues	15
3.01	Data & Knowledge	15	Primary Data	40
3.02			Secondary Data	30
3.03			Tertiary Data	30
4.00	Commercial Tactics	15	N/A	
5.00	Organisational Issues	5	N/A	
6.00	People Issues	15	N/A	
7.00	AM Plans	5	N/A	

4. TEAMQF Analysis Outcomes

Great Lakes is a technically astute and forward looking organisation, who appreciate many of the issues that they face with respect to Community Infrastructure Asset Management. Based on the current organisational structure and practice, Council has a good handle on the Asset portfolio thanks to its committed and enthusiastic team of Asset Manager's. Whilst this is the case we believe that gaps do exist in existing policy and processes that will restrict potential improvements in Council's ability to make quality decisions in regards to its assets.

4.1 TEAMQF Primary Element Ratings

Figure 2 shows the current level of performance against best appropriate practice in each of the primary elements assessed in our review. The semi-shaded bar represents the top 10% of municipal organisations, based on previous studies conducted by GHD. The difference between the coloured bars and the black line represents the gap between Great Lakes's current level of performance and the best appropriate practice for a Council organisation of their type.

Figure 2 Overall Primary Element Ratings

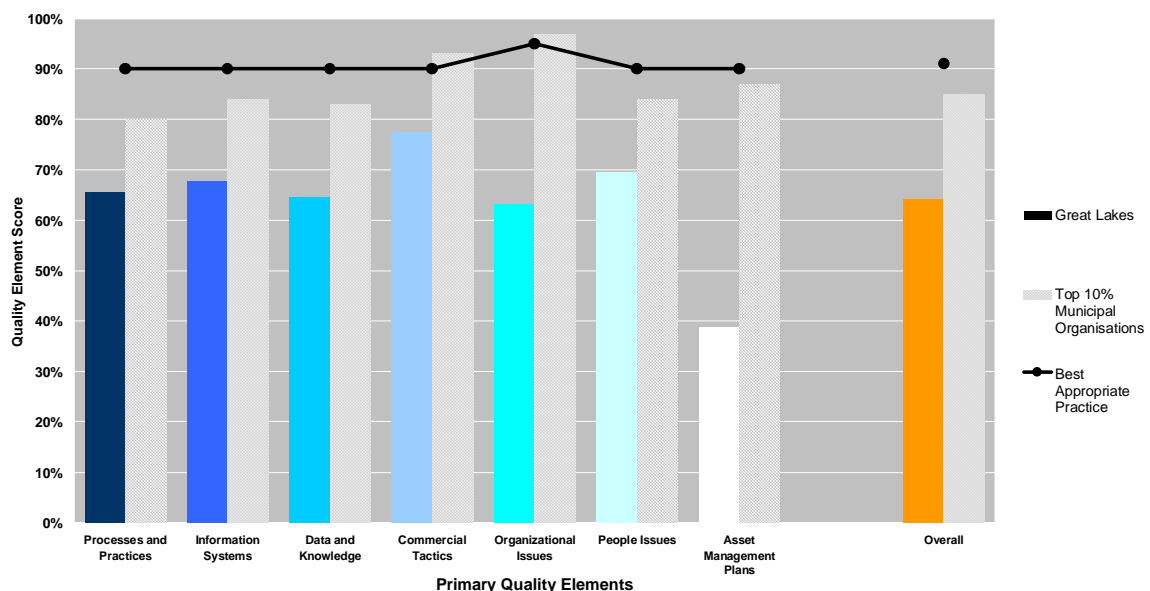


Table 3 Improvement Priorities By Primary Element

Primary Element	Weighted Gap to BAP	Rank
Processes & Practices	24.0	4
AM Information Systems	22.0	5
Data & Knowledge	25.0	3
Commercial Tactics	13.0	7
Organisational Issues	32.0	2
People Issues	21.0	6
Asset Management Plans	51.0	1

Based on the gap analysis, Great Lakes Council is 21.0% behind the top ten percentile of Municipal Organisations in Australia and 27.0% behind the best appropriate practice target level as deemed appropriate for an organisation of this size and nature.

Great Lakes Council manages approximately \$1 Billion worth of infrastructure assets, the management of which is crucial to the organisation's performance in terms of both cost and levels of service.

The chart indicates that Council could realise performance improvements through further maturing its asset management processes in most areas.

This is not a criticism of Council and simply indicates that the changing demands upon community infrastructure Asset Manager's calls for faster reaction and tighter controls, that could be enabled by more sophisticated AM systems and processes.

Great Lakes is in a good position to concentrate on building an improved Asset Management capability going forward and it critical to ensure that the most beneficial path of improvements is followed. This will ensure that Council's limited resources are channelled most efficiently into those areas that offer the best payback and ultimately will facilitate the delivery of sustainable Community Infrastructure.

GHD believes that the most effective way to steer the achievement of this deliverable is through the development of Strategic Asset Management Plans for each major asset group.

Prior to reading the following section of the report, it should be noted that whilst Council has room to improve its Asset Management in a number of areas, it is particularly established in Road's across most of the elements covered in our review.

The particular observations that we made in respect to the seven primary AM elements are as follows:

4.1.1 Processes and Practices

Processes and practices form the basis for all asset management activities within an organisation. Without clearly defined and documented procedures the ability for your organisation to conduct consistent quality outcomes are greatly reduced. Processes should exist to cover the entire lifecycle of the asset and individual practices will be required for different asset types, (i.e. condition assessment is a common process for all assets, however, the actual practice applied will differ for each asset type). Our observations with regard to your organisation in this area are as follows:



Council's Asset Management team has a good understanding of the practices and process required to manage the particular assets under their control. However many of the processes rely on individual's knowledge and are not formalised.

Many of the processes are stand-alone and linkage back to the corporate plan is weak. At a corporate level there is no formal asset management policy.

We believe that gaps exist within policy and process and that this may be limiting Council's ability to make the best decision's based on 'the big picture' (I.e. across the entire portfolio).

By assigning some resources to focus on improvement in this area Council could consolidate its existing understanding of asset management, harness the best practices that are being employed across different asset groups and channel the groups energies in a coherent effort.

Good processes should define 'how we do asset management'. Laying down some solid foundations in this area will be fundamental to the sustainable success of any Asset Management improvement program for Great Lakes.

In particular Council should concentrate initially on recognising the areas where formal process does not exist and is required, further documentation of processes and periodic audit.

4.1.2 Information Systems

Information Systems comprise the electronic or paper systems for retrieval of asset related data. The capability and efficiency of your organisation is highly dependent upon these systems. Information systems come in a variety of forms including card/paper based, computer spreadsheets, stand-alone databases or centrally administered developed electronic systems. Our observations with regard to your organisation in this area are as follows:

Council has a number of existing information systems that are used in discharging its business.

In particular council's finance system is used to track asset costs at the facility level. The system is easily accessible and is kept up-to-date. Further development of this might look to record data on asset costs at the asset level.

Other systems include a customer/ facility records system and customer complaints/ enquiries system. To this end Council has a good handle of the details relating to its customers and the facilities that they deliver services from. Council believes that the customer complaints system is not currently used to the extent of its useful capability and that the system and surrounding process needs to be reviewed.

Council collect some information on the utilisation of their assets such as parks and swimming pools, however they do not have a level of understanding that enables them to forecast future demand for specific types of services/ assets (I.e. do the people using the aquatic centre go their to swim or use they gymnasium).

Whilst Council generally understands the changing demographic of its municipality leading to a shift in the demands and new challenges for its infrastructure, they do not have a system to capture and track hard data to support management planning and decision-making.

A maintenance management system exists but is only really applied to roads. The system has the capability to issue and track work orders to assist in a planned approach to job and resource management, however the function is not utilised. We see this as a missed opportunity to obtain key information about the asset and ensure that routine maintenance is implemented, this means that Council is not capturing critical feedback in regards to the condition of its assets on an ongoing basis.



Council does not have a central system for storing operation and maintenance manuals for its assets.

Based on the current level of maturity of Council's asset management information systems, they do not have an advanced system that allows them to predict failure modes and understand/ record and analyse lifecycle costs and make optimised renewal decisions.

GHD has made a number of observations with regards to information systems that should be considered by Council. However prior to embarking on any improvement initiatives we would recommend that Council carry's out an initial review of its information systems requirements in order to understand what is required to deliver its business effectively. The outcome of such a review would be an information systems strategy which best supports Great Lakes needs.

GHD is a firm believer that information systems issues are not solved with 'a one size fits all' approach.

4.1.3 Data and Knowledge

Data and knowledge that an organisation holds on its assets form the basis of every decision that is made by that organisation. The extent and quality of the data that is held by your organisation is, therefore, directly related to the quality of the decisions that your organisation makes in regards to its assets. Our observations with regard to your organisation in this area are as follows:

The Data & Knowledge that supports Council's processes and practices is recruited from a range of information sources on an as-required basis. Some data is stored in an ad hoc manner and is heavily reliant on the knowledge of individuals. This is a key risk area for Council as individuals tend to focus on a specific asset Group making them 'single points of failure'.

Council has particularly good spatial data and Maintenance information in regards to its assets (Roads in particular) and believes that it is easily accessible where it exists.

Asset categories are understood and managed however there is no formal hierarchy that provides a strategic breakdown from the facility level down to the asset and maintenance managed item. Council is lacking physical attribute data on its assets.

Council does not have the historic data to assist them in understanding the true lifecycle costs of their assets, nor do they retain operations data on asset failure modes and consequences management.

A great deal of this is due to the fact that Council does not have defined policy and process for the collection, analysis and reporting of asset data.

Strengthening data and knowledge would support the development of advanced Asset Management capabilities, ultimately improving strategic and tactical/ operational control.

Further development and formalisation of policy and processes will aid progressive development in this area. This will need to be supported by an information systems strategy to ensure Council provides a means of managing any data that it gathers.

GHD appreciates that gathering, analysing and reporting on asset data is a labour intense exercise and 'another' drain on Council's resources. For this reason we promote a risk-based approach (Business Risk Exposure) to asset management that ensures Council obtain the 'necessary' level of information for particular assets based on their criticality.



4.1.4 Commercial Tactics

Commercial Tactics form the basis for the implementation of asset management planning into the field through internal or external service providers. Good commercial tactics are necessary for your organisation to drive efficiency through these activities in all life cycle functions from conception to disposal. Our observations with regard to your organisation in this area are as follows:

Council are currently performing well in the area of commercial tactics. In particular, Great Lakes has standard contracts and procedures for procuring and managing bought-out services supported by an established process for contractor appraisal prior to engagement.

We would suggest however that Council look to review the processes in place to support service planning in line with Community demands and government-contracting rules.

Council believes that a greater emphasis should be placed on managing customer expectations with respect to service performance. This can be achieved by ensuring that all internally and externally provided services, are covered by Service Level Agreements (SLA). All SLA's should contain specifications for the works and measurable performance indicators aligned with Council's goals. In order for the SLAs to be effective they need to be supported by a formal review framework. Once implemented, these SLAs can be used as a governor to communicate, adjust and measure the service, providing the opportunity for customer to understand Council's capability, and affect improvements through periodic involvement.

Such an initiative will need to be supported by improved data capture, recording and reporting by the parties providing the service (i.e. by obtaining information in relation to the changing demands on assets).

4.1.5 Organisational Issues

The organisational structure of your business determines its ability to optimise resources to deliver an efficient outcome and provide flexibility in line with the changing needs of the customer. This section relates to the way the organisation supports asset management and its effective service delivery. Our observations with regard to your organisation in this area are as follows:

Council is lacking a vision for 'best appropriate practice' asset management in relation to Great Lakes. GHD hopes that this study provides a basis for the required future direction to be understood, defined and managed.

Under the current organisational structure individual Asset Manager's are assigned to respective asset groups. Council does not have an appointed Asset Manager/ Director assigned to co-ordinating 'strategic' Asset Management across Council. Transport is the partial exception which is covered by a Transport Assets Manager who is responsible for asset management of all transport assets but not the delivery of improvement and maintenance programs.

During our review we were informed that Council's Asset Management team rarely get the opportunity to sit down together and discuss the issues regarding Community Infrastructure globally.

GHD would recommend that Council consider appointing an overall 'Strategic' Asset Manager/ Director or at the very least forming an Asset Management steering committee.

Key objectives of this appointment or committee would be to:

- » clarify ownership and responsibility;
- » provide a single point of capture and discussion forum for Council wide issues so that decision can be made in regards to Community Infrastructure based on the whole picture;



- » provide a forum for sharing knowledge, ideas and internal best practice;
- » assist Council in understanding the current capability and driving improvements going forward; and
- » to provide a strategic and coherent approach to Community Infrastructure management and development at Great Lakes.

4.1.6 People Issues

People, their skills and attitude drives the business to achieve its goals and deliver services in an efficient way. Your organisation is your people and the outcomes that you deliver are therefore dependent upon them. Our observations with regard to your organisation in this area are as follows:

Council's asset management team are a technically astute and forward-looking organisation who are well aware of their responsibilities as custodians for Community Infrastructure.

Council's team consists of competent staff of various ages, however succession planning within the Asset Management team is an area that requires attention. There is an Australia wide shortage of skilled staff and council needs to understand and manage the associated risks.

As a result of skills/ staff shortages and a lack of formalised process, Council is susceptible to the common risk of knowledge sitting in individual's heads.

Council advised that in the past they adhered to formal performance review programmes leading to individual development plans. In recent years this process has received less attention and in some cases has ceased to be implemented.

In terms of knowledge sharing, council relies on use of e-mail and does not have a central repository to capture and provide access to knowledge and ideas.

As Council matures its Asset Management capabilities through clearer defined policy and processes and potentially more sophisticated information systems, the need for a structured approach to training will become more pressing.

Again many of these issues could be addressed if Council were to appoint a Strategic Asset Manager/ Director or a steering committee to identify and concentrate on the issues centrally and holistically.

Addressing some of these issues initially will mean that every step that Council takes from here is a step forwards and provide a defence against set-back's due to loss of key skills, knowledge and individuals.

4.1.7 Total Asset Management Plan

Asset Management Plans are the collation of all asset management practices, within an organisation and form the basis of the external interface with customers and regulators. Without a robust and substantiated Asset Management Plan for all your assets that clearly outlines level of service and cost, your organisation will potentially lack the both direction and focus. Our observations with regard to your organisation in this area are as follows:

Council does not currently have Asset Management Plan's.

Given Council's current level of maturity in Asset Management GHD believes that there are significant benefits to be realised from developing Strategic Asset Management Plans for all major Asset Groups and therefore council should make developing this capability a priority.



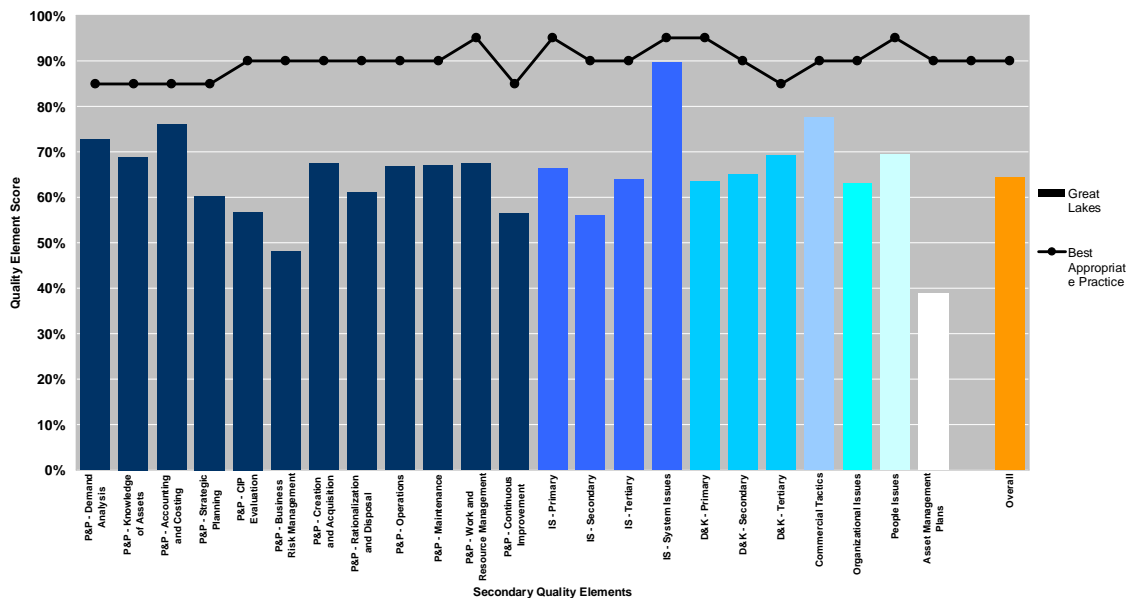
Good Asset Management Plan's will assist Council in:

- » ensuring the integration and co-ordinated development of existing policies, processes and practices within a formal management framework;
- » recognising and understanding clear linkages and interdependencies with other areas of the business;
- » improving strategic planning and tactical/ operational control;
- » proactively identifying key drivers and levels of demand;
- » managing assets to provide the most effective platform for council's current service demands;
- » identifying rationale budgets and supporting these with quality data;
- » allocating funding in line with Council priorities;
- » optimising treatment strategies to make best use of limited resources;
- » understanding the trade-off's associated with different strategies between:
 - customer expectations;
 - levels of service;
 - cost of service; and
 - risk;
- » satisfying legislative and statutory obligations;
- » identifying current and future risks that may impact the organisation (i.e. Threats to level and cost of service); and
- » providing a basis for continuous improvement through greater capture and control of issues;
- » council will be able to justify future expenditure and funding strategies with greater confidence and the ability to provide customers and regulators alike, with visibility of the relationships between the level of service and the subsequent cost and risks associated.

4.2 TEAMQF Secondary Element Ratings

Figure 3 illustrates the overall secondary element ratings as they contribute to the primary level results shown in Figure 2. The detail questionnaire completed with Council, detailing their scores against BAP can be found in Appendix A .

Figure 3 Overall Secondary Element Ratings



4.3 Areas of Strong Performance

The secondary elements where Council, within the limitations of the assessment, were found to be performing at or close to Best Appropriate Practice are listed below. These areas do not necessarily indicate that Council is performing close to World’s Best Practice, as the BAP target used may be determined to be of a lower standard due to their specific needs or circumstances.

4.3.1 Processes and Practices

Demand Analysis

Council has some processes in place for predicting future demand for their assets in particular customer surveys.

Council monitors the current usage of some of its current facilities, however believes that they could put further emphasis in this area using existing methods to get a better handle on the community specific needs and preferences particularly in the areas of Open Space and the Aquatic Centre.



Accounting and Costing

Councils accounting processes ensure the cost information is captured at the facility/ system level.

On Road assets in particular, a process exists to track maintenance costs against specific assets providing a greater level of detail.

Strategic Planning

Council has a formal and established process for engaging customers and stakeholders in strategic planning activities to ensure that they are kept informed and that feedback is obtained.

Creation and Acquisition

Council has a formal and established process for procuring and managing contractors to carry out works on their assets. Communication and stakeholder involvement is a key factor in this process.

Works and Resource Management

Council has an inventory management system that it uses to proactively manage spare parts together with lead times and the associated costs for particular assets. This process is implemented on Roads only.

4.3.2 Information Systems

Council's finance system is used to track asset costs at the facility level. The system is easily accessible and is kept up-to-date. Further development of this might look to record data on asset costs at the asset level.

The customer/ facility records system and customer complaints/ enquiries system, enable Council to have a good handle of the details relating to its customers and the facilities that they deliver services from.

- » Council has a spatially enabled information system for Road assets which allows them to link maintenance activities and information to particular assets facilitating easy retrieval for management and reporting.

4.3.3 Commercial Tactics

Great Lakes has standard contracts and procedures for procuring and managing bought-out services supported by an established process for contractor appraisal prior to engagement.

4.3.4 People Issues

Within the Asset Management team, we felt that both the leadership and the staff are highly focused on their roles, they take pride in their work and are keen on improving Asset Management to the benefit of Council. This was re-enforced by the level of support assigned to this study.

4.3.5 Total Asset Management Plan Production Capability

In general we believe that the Great Lakes Council has the capability to produce high quality Asset Management plans. In many cases Council is able to pull together information on assets when required to support key decisions (i.e. Acquisitions), however as we have identified, practices and processes and information systems are fragmented, leading to poorer quality data. We believe that council can improve



its decision-making and planning capability on a daily basis (i.e. Operation and maintenance decisions) through further recognition, integration and formalisation of its Asset Management systems and processes. By implementing the proposed improvement projects (Detailed below) Council will be improving their Asset Management capability to optimise the contribution that assets make to achieving council and community goals.

5. Priority Areas of Improvement

5.1 Project Identification and Selection

A number of priority improvement areas for Great Lakes Council to consider, have been identified through the Gap Analysis process. This process ranks each secondary quality element on the value chain, taking into account:

- » The gap between the current quality rating and the Best Appropriate Practice quality rating;
- » The relative weighting (importance) allocated to given elements.

As mentioned earlier, the value chain weightings for the long-term case and GHD's sustainable benchmark for a municipal organisation of Great Lakes's size were purposely aligned. This ensures that the improvement project listing is primarily based on the long-term element weighting based on the need to create a more sustainable development of the function and the asset portfolio alike.

It should be noted that whilst this review is targeted at the primary element level, we have given Council a score against each of the secondary elements in order to provide further detail on the required improvement areas. Based on this assessment we have developed a series of improvement projects as shown in Table 4.

Table 4 Priority Improvement Projects

	Improvement Project	Man Hours Int.	Man Hours Ext.	Cost Int (\$).	Cost Ext (\$).	Total Cost (\$)
1	Formalisation of Policy, Practices and Process	376	137.5	37.6K	27.5K	65.1K
2	Asset Data Requirements Definition	116	85	11.6K	17K	28.6K
3	Review Of AM Organisation and Structure	68	75	6.8K	15K	21.6K
4	People	467	147.5	36.7K	23.5K	60.2K
5	Develop Strategic Asset Management Plans	356	730	35.6K	146K	181.6K

Appendix A provides a more detailed breakdown for each of these improvement projects including:

- » A statement of the improvement project **purpose and objectives**;
- » Consideration of the supporting/ influencing **interdependencies**;
- » A brief outline of the recommended **scope** of work;
- » A brief overview of the **time and resources** required to complete the task.

Notes

The costs provided in relation to these 4 improvement projects have been compiled to provide the Great Lakes Council with a 'guide' as to the order of magnitude of the costs to carry out the works. In many cases, we do not have sufficient information as to the extent of processes, systems and documentation that need to be reviewed and therefore cannot provide accurate costing's.

Upon request, details for individual project(s) can be further developed in consultation with Great Lakes.



6. Conclusions

Great Lakes is a technically astute and forward looking organisation, who appreciate many of the issues that they face with respect to Community Infrastructure Asset Management. Based on the current organisational structure and practice, Council has a good handle on the Asset portfolio thanks to its committed and enthusiastic team of Asset Manager's. Whilst this is the case we believe that gaps do exist in existing policy and processes that will restrict potential improvements in Council's ability to make quality decisions in regards to its assets. GHD has identified, prioritised and scoped in general terms, 4 Asset Management Improvement Projects to be pursued by Council:

- ü Review and Formalisation of Policy, Practices and Process
- ü Asset Data Requirements Definition
- ü Review Of Organisation and Structure
- ü People
- ü Develop Strategic Asset Management Plans

The quality assessment process has identified those improvement activities or projects that represent the greatest value to Great Lakes Council in terms of contributing to business objectives and drivers from an Asset Management perspective. The assessment is at the current time and does not account for planned improvements.

Beyond this we believe that Council should communicate with customers and decision makers to constantly learn about and influence future changes in service requirements and proactively demonstrate the contribution that Asset Management makes to achieving Council goals by raising awareness and promoting the Asset Management team, as a key service enabler rather than a mere maintainer of assets.

This review should be considered as an integrated part of Council's business improvement process. By bringing together all relevant parts of the organisation in the various forums and considering a wide range of Asset Management issues, it has enabled a balanced view of Asset Management practices to be obtained and possibly broadened the Asset Management perspective of some or all participants. The review, because of its limited depth, should not take the place of the detailed reviews, analyses and strategies developed by Great Lakes Council. It should be considered more as part of the Asset Management improvement "jigsaw" to assist the difficult process of prioritisation.

To derive the best value from the review, it is recommended that Council:

- » Consider improvement projects identified in this Asset Management Review.
- » Compare these improvements with issues identified in other Council specific reviews, analyses and strategies or AMPs.
- » Reconsider priorities and the balance of investment in improvements from an Asset Management perspective, to ensure greatest value in output terms.
- » Refine the scope of each improvement project, allocate resources and devise an implementation program.



Appendix A
Improvement Projects





Appendix B
Completed Questionnaire



Scoring

The table below shows how you scored your organisation.

1 Processes and Practices - 1.01 Demand Analysis		
<p>1.01.01 Processes for managing records of historic demands. (eg. How does the organization determine what data to collect, how is it maintained and who should maintain it?)</p>	0 1 2 [3] 4 5	<p>0 = Little or no knowledge, 1 = Little knowledge & ad hoc processes, 2 = Good knowledge & ad hoc processes, 3 = Consistent processes & partially documented, 4 = Extensive knowledge & partially documented, 5 = Fully documented & externally audited</p>
<p>1.01.02 Processes for breaking up demand into key drivers and understanding of the influences on demand. (eg. Does the organization understand the impacts of temperature, key stakeholders, regulations and demographic changes, etc)</p>	0 1 2 [3] 4 5	<p>0 = Little or no knowledge, 1 = Little knowledge & ad hoc processes, 2 = Good knowledge & ad hoc processes, 3 = Consistent processes & partially documented, 4 = Extensive knowledge & partially documented, 5 = Fully documented & externally audited</p>
<p>1.01.03 Processes for undertaking, analyzing and responding to customer and stakeholder surveys. (eg. Are surveys conducted and reported on?)</p>	0 1 [2] 3 4 5	<p>0 = Little or no knowledge, 1 = Little knowledge & ad hoc processes, 2 = Good knowledge & ad hoc processes, 3 = Consistent processes & partially documented, 4 = Extensive knowledge & partially documented, 5 = Fully documented & externally audited</p>
<p>1.01.04 Processes for defining levels of service. (eg. How are Customer Charters and Contracts developed and maintained? Are customer survey results used to set levels of service?)</p>	0 1 2 3 [4] 5	<p>0 = Little or no knowledge, 1 = Little knowledge & ad hoc processes, 2 = Good knowledge & ad hoc processes, 3 = Consistent processes & partially documented, 4 = Extensive knowledge & partially documented, 5 = Fully documented & externally audited</p>
<p>1.01.05 Processes for predicting future trends in demand for services based on historic and external influences. (eg. Does the organization undertake demand predictions developing pessimistic and optimistic scenarios?)</p>	0 1 2 3 [4] 5	<p>0 = Little or no knowledge, 1 = Little knowledge & ad hoc processes, 2 = Good knowledge & ad hoc processes, 3 = Consistent processes & partially documented, 4 = Extensive knowledge & partially documented, 5 = Fully documented & externally audited</p>

1 Processes and Practices - 1.02 Knowledge of Assets



<p>1.02.01 Processes for defining the structure of the asset register and the level of detail of asset information that is collected and managed - the maintenance managed item (MMI). (eg. Is the structure and level of detail collected regularly reviewed? Is there a defined structure that is followed consistently?)</p>	<p>0 1 2 3 [4] 5</p>	<p>0 = Little or no knowledge, 1 = Little knowledge & ad hoc processes, 2 = Good knowledge & ad hoc processes, 3 = Consistent processes & partially documented, 4 = Extensive knowledge & partially documented, 5 = Fully documented & externally audited</p>
<p>1.02.02 Processes defining the collection and management of asset attribute information. (eg. Is there a data standard defining this and how is the standard maintained? Is it clear what information is required to be collected on assets?)</p>	<p>0 1 [2] 3 4 5</p>	<p>0 = Little or no knowledge, 1 = Little knowledge & ad hoc processes, 2 = Good knowledge & ad hoc processes, 3 = Consistent processes & partially documented, 4 = Extensive knowledge & partially documented, 5 = Fully documented & externally audited</p>
<p>1.02.03 Processes for determining what assets to collect condition data on, for undertaking the assessments and determining the potential residual lives. (eg. Is there a data standard defining this? How is it maintained?)</p>	<p>0 1 [2] 3 4 5</p>	<p>0 = Little or no knowledge, 1 = Little knowledge & ad hoc processes, 2 = Good knowledge & ad hoc processes, 3 = Consistent processes & partially documented, 4 = Extensive knowledge & partially documented, 5 = Fully documented & externally audited</p>
<p>1.02.04 Processes for determining what assets to collect performance data on and for undertaking the collection. (eg. How well is the asset performing? Is there a data standard defining this?)</p>	<p>0 1 [2] 3 4 5</p>	<p>0 = Little or no knowledge, 1 = Little knowledge & ad hoc processes, 2 = Good knowledge & ad hoc processes, 3 = Consistent processes & partially documented, 4 = Extensive knowledge & partially documented, 5 = Fully documented & externally audited</p>
<p>1.02.05 Processes for determining what assets to collect utilization on and for undertaking the collection. (eg. How often or extensively is an asset used? Is there a data standard defining this?)</p>	<p>0 1 [2] 3 4 5</p>	<p>0 = Little or no knowledge, 1 = Little knowledge & ad hoc processes, 2 = Good knowledge & ad hoc processes, 3 = Consistent processes & partially documented, 4 = Extensive knowledge & partially documented, 5 = Fully documented & externally audited</p>
<p>1 Processes and Practices - 1.03 Accounting and Costing</p>		
<p>1.03.01 Processes for undertaking asset valuations. (eg. Are asset valuations undertaken and is the method documented? Is there a method to assess the quality of that valuation?)</p>	<p>0 1 2 [3] 4 5</p>	<p>0 = Little or no knowledge, 1 = Little knowledge & ad hoc processes, 2 = Good knowledge & ad hoc processes, 3 = Consistent processes & partially documented, 4 = Extensive knowledge & partially documented, 5 = Fully documented & externally audited</p>



<p>1.03.02 Processes for determining the effective lives or residual economic lives of all assets in the register. (eg. Are these lives based on real data?)</p>	<p>0 1 2 [3] 4 5</p>	<p>0 = Little or no knowledge, 1 = Little knowledge & ad hoc processes, 2 = Good knowledge & ad hoc processes, 3 = Consistent processes & partially documented, 4 = Extensive knowledge & partially documented, 5 = Fully documented & externally audited</p>
<p>1.03.03 Processes for tracking and reporting operational costs. (eg. Are these costs capable of being amalgamated from a suitable level up to a facility level and reported on?)</p>	<p>0 1 2 3 4 [5]</p>	<p>0 = Little or no knowledge, 1 = Little knowledge & ad hoc processes, 2 = Good knowledge & ad hoc processes, 3 = Consistent processes & partially documented, 4 = Extensive knowledge & partially documented, 5 = Fully documented & externally audited</p>
<p>1.03.04 Processes for tracking and reporting maintenance costs. (eg. Are these costs available at an maintenance managed item level and capable of being amalgamated to a facility or asset level and being reported on?)</p>	<p>0 1 2 3 4 [5]</p>	<p>0 = Little or no knowledge, 1 = Little knowledge & ad hoc processes, 2 = Good knowledge & ad hoc processes, 3 = Consistent processes & partially documented, 4 = Extensive knowledge & partially documented, 5 = Fully documented & externally audited</p>
<p>1.03.05 Processes for determining future renewal liabilities. (eg. Is the projected future expected expenditure on assets for the next 20 years calculated?)</p>	<p>0 1 [2] 3 4 5</p>	<p>0 = Little or no knowledge, 1 = Little knowledge & ad hoc processes, 2 = Good knowledge & ad hoc processes, 3 = Consistent processes & partially documented, 4 = Extensive knowledge & partially documented, 5 = Fully documented & externally audited</p>
<p>1.03.06 Processes for determining residual business risk exposure. (eg. Is predicted operational risk exposure calculated which is due to decaying facilities or assets?)</p>	<p>0 1 [2] 3 4 5</p>	<p>0 = Little or no knowledge, 1 = Little knowledge & ad hoc processes, 2 = Good knowledge & ad hoc processes, 3 = Consistent processes & partially documented, 4 = Extensive knowledge & partially documented, 5 = Fully documented & externally audited</p>
<p>1.03.07 Processes for determining what historical cost data should be collected on individual assets and how should this be archived. (eg. Can all the historic costs associated with a critical asset be reported?)</p>	<p>0 1 2 3 4 [5]</p>	<p>0 = Little or no knowledge, 1 = Little knowledge & ad hoc processes, 2 = Good knowledge & ad hoc processes, 3 = Consistent processes & partially documented, 4 = Extensive knowledge & partially documented, 5 = Fully documented & externally audited</p>

1 Processes and Practices - 1.04 Strategic Planning



<p>1.04.01 Processes for predicting failure modes of assets. (eg. The way in which the organization predicts the likely failure modes for individual assets or its components.)</p>	<p>0 1 [2] 3 4 5</p>	<p>0 = Little or no knowledge, 1 = Little knowledge & ad hoc processes, 2 = Good knowledge & ad hoc processes, 3 = Consistent processes & partially documented, 4 = Extensive knowledge & partially documented, 5 = Fully documented & externally audited</p>
<p>1.04.02 Processes for undertaking risk assessments of asset failure for inclusion within the planning process. (eg. What is the likelihood and consequence of a particular asset failing?)</p>	<p>0 1 [2] 3 4 5</p>	<p>0 = Little or no knowledge, 1 = Little knowledge & ad hoc processes, 2 = Good knowledge & ad hoc processes, 3 = Consistent processes & partially documented, 4 = Extensive knowledge & partially documented, 5 = Fully documented & externally audited</p>
<p>1.04.03 Processes for making optimized asset renewal decisions by choosing the most economical solution time to renew / replace an asset. (eg. Does the process include all options for life extension including non asset solutions using life cycle cost analysis?)</p>	<p>0 [1] 2 3 4 5</p>	<p>0 = Little or no knowledge, 1 = Little knowledge & ad hoc processes, 2 = Good knowledge & ad hoc processes, 3 = Consistent processes & partially documented, 4 = Extensive knowledge & partially documented, 5 = Fully documented & externally audited</p>
<p>1.04.04 Processes for assessing the life cycle cost of new assets where spent costs and existing configuration has no influence on the final solution. (eg. Are capital, maintenance and operational costs accounted for?)</p>	<p>[0] 1 2 3 4 5</p>	<p>0 = Little or no knowledge, 1 = Little knowledge & ad hoc processes, 2 = Good knowledge & ad hoc processes, 3 = Consistent processes & partially documented, 4 = Extensive knowledge & partially documented, 5 = Fully documented & externally audited</p>
<p>1.04.05 Processes to identify cost reduction or service level improvement opportunities. (eg. Is this a random process or is it systematic?)</p>	<p>0 1 2 3 [4] 5</p>	<p>0 = Little or no knowledge, 1 = Little knowledge & ad hoc processes, 2 = Good knowledge & ad hoc processes, 3 = Consistent processes & partially documented, 4 = Extensive knowledge & partially documented, 5 = Fully documented & externally audited</p>
<p>1.04.06 Processes for producing Asset Management Plans from a strategic perspective. The quality of these plans are dealt with under later. (eg. Is this a systematic and efficient process?)</p>	<p>0 1 2 [3] 4 5</p>	<p>0 = Little or no knowledge, 1 = Little knowledge & ad hoc processes, 2 = Good knowledge & ad hoc processes, 3 = Consistent processes & partially documented, 4 = Extensive knowledge & partially documented, 5 = Fully documented & externally audited</p>
<p>1.04.07 Processes for working with customers, regulators and other stakeholders during long term strategic planning. (eg. Informing, seeking and incorporating feedback.)</p>	<p>0 1 2 3 [4] 5</p>	<p>0 = Little or no knowledge, 1 = Little knowledge & ad hoc processes, 2 = Good knowledge & ad hoc processes, 3 = Consistent processes & partially documented, 4 = Extensive knowledge & partially documented, 5 = Fully documented & externally audited</p>



<p>1.04.08 Processes for demonstrating the links between capital / operating expenditure programs and overall business goals in triple bottom line terms (social, economic and environment). (eg. Are there links between the Asset Management program and the corporate plans?)</p>	<p>0 1 [2] 3 4 5</p>	<p>0 = Little or no knowledge, 1 = Little knowledge & ad hoc processes, 2 = Good knowledge & ad hoc processes, 3 = Consistent processes & partially documented, 4 = Extensive knowledge & partially documented, 5 = Fully documented & externally audited</p>
<p>1.04.09 Processes for budget rationalisation. (eg. The matching of the asset plan and forecasted expenditure with available financial resources and the process by which the work is prioritized.)</p>	<p>0 1 2 [3] 4 5</p>	<p>0 = Little or no knowledge, 1 = Little knowledge & ad hoc processes, 2 = Good knowledge & ad hoc processes, 3 = Consistent processes & partially documented, 4 = Extensive knowledge & partially documented, 5 = Fully documented & externally audited</p>
<p>1 Processes and Practices - 1.05 Capital Expenditure Evaluation</p>		
<p>1.05.01 Policy for the evaluation of capital expenditure projects. (eg. Does a corporate wide / uniform policy and clear process exist? Does it ensure a commercial / business like approach to this decision making? Does it define roles and responsibilities for key activities?)</p>	<p>[0] 1 2 3 4</p>	<p>0 = None, 1 = Under development, 2 = Documented in some business areas, 3 = Documented & covering whole business, 4 = Documented & fully implemented across whole business</p>
<p>1.05.02 Processes for categorizing the cause of expenditure. (eg. Are capital expenditure categorized into growth, renewal, regulations / levels of service and business efficiency investment categories?)</p>	<p>0 [1] 2 3 4 5</p>	<p>0 = Little or no knowledge, 1 = Little knowledge & ad hoc processes, 2 = Good knowledge & ad hoc processes, 3 = Consistent processes & partially documented, 4 = Extensive knowledge & partially documented, 5 = Fully documented & externally audited</p>
<p>1.05.03 Processes for linking the sophistication and extent of the evaluation processes to the level of expenditure and the risk it represents to the organisation. (eg. Are more extensive evaluation techniques used for larger investments and risks to the business?)</p>	<p>0 [1] 2 3 4 5</p>	<p>0 = Little or no knowledge, 1 = Little knowledge & ad hoc processes, 2 = Good knowledge & ad hoc processes, 3 = Consistent processes & partially documented, 4 = Extensive knowledge & partially documented, 5 = Fully documented & externally audited</p>
<p>1.05.04 Processes for linking service demand and the level of expenditure (necessary to achieve this sustainably) and determine the income / benefits generation needed. (eg. Has the business developed a funding model that allows each project to be reported in terms of its impact on the business in terms of meeting demand and income generation?)</p>	<p>0 1 [2] 3 4 5</p>	<p>0 = Little or no knowledge, 1 = Little knowledge & ad hoc processes, 2 = Good knowledge & ad hoc processes, 3 = Consistent processes & partially documented, 4 = Extensive knowledge & partially documented, 5 = Fully documented & externally audited</p>



<p>1.05.05 Processes for evaluating supply or program delivery options. (eg. Are various methods of delivery considered and evaluated for each project? Internal or external resources, private / public partnerships, design and construct, BOOT.)</p>	<p>0 1 [2] 3 4 5</p>	<p>0 = Little or no knowledge, 1 = Little knowledge & ad hoc processes, 2 = Good knowledge & ad hoc processes, 3 = Consistent processes & partially documented, 4 = Extensive knowledge & partially documented, 5 = Fully documented & externally audited</p>
<p>1.05.06 Processes to ensure the appropriate quality of operation and maintenance expenditure cost estimates (budgets) used in capital expenditure evaluation. (eg. How are life cycle maintenance and operation costs projected?)</p>	<p>0 1 [2] 3 4 5</p>	<p>0 = Little or no knowledge, 1 = Little knowledge & ad hoc processes, 2 = Good knowledge & ad hoc processes, 3 = Consistent processes & partially documented, 4 = Extensive knowledge & partially documented, 5 = Fully documented & externally audited</p>
<p>1.05.07 Processes for investigating and recording alternative options to the lowest life cycle cost option for capital expenditure projects for use in budget rationalisation activities. (eg. Are 'do nothing', reduced capital, manage the risk and 'non-asset' solutions considered and recorded as options?)</p>	<p>0 1 2 [3] 4 5</p>	<p>0 = Little or no knowledge, 1 = Little knowledge & ad hoc processes, 2 = Good knowledge & ad hoc processes, 3 = Consistent processes & partially documented, 4 = Extensive knowledge & partially documented, 5 = Fully documented & externally audited</p>
<p>1.05.08 Processes for economic evaluation of all capital and recurrent investment projects, including a clear policy by which each project should be evaluate. (eg. Are Net Present Value's, Internal Rate of Return, etc considered for all projects?)</p>	<p>0 1 [2] 3 4 5</p>	<p>0 = Little or no knowledge, 1 = Little knowledge & ad hoc processes, 2 = Good knowledge & ad hoc processes, 3 = Consistent processes & partially documented, 4 = Extensive knowledge & partially documented, 5 = Fully documented & externally audited</p>

1 Processes and Practices - 1.06 Business Risk Management

<p>1.06.01 Policy for the evaluation of all business risk exposure on an organization wide basis. (eg. Does a corporate wide policy exist? Does it clearly define roles and responsibilities for the key risk areas of strategy, financial and operational?)</p>	<p>0 [1] 2 3 4</p>	<p>0 = None, 1 = Under development, 2 = Documented in some business areas, 3 = Documented & covering whole business, 4 = Documented & fully implemented across whole business</p>
<p>1.06.02 Processes for risk identification relevant to each business unit. (eg. Do the risks considered include strategy, finance, information technology, engineering, and operations?)</p>	<p>0 [1] 2 3 4 5</p>	<p>0 = Little or no knowledge, 1 = Little knowledge & ad hoc processes, 2 = Good knowledge & ad hoc processes, 3 = Consistent processes & partially documented, 4 = Extensive knowledge & partially documented, 5 = Fully documented & externally audited</p>



<p>1.06.03 Processes for quantifying likelihood and consequences of failure. (eg. Is this a simple points score or are full economic costs considered?)</p>	<p>0 1 [2] 3 4 5</p>	<p>0 = Little or no knowledge, 1 = Little knowledge & ad hoc processes, 2 = Good knowledge & ad hoc processes, 3 = Consistent processes & partially documented, 4 = Extensive knowledge & partially documented, 5 = Fully documented & externally audited</p>
<p>1.06.04 Processes for analyzing risks, including the understanding of its make up and the ranking of the risks. (eg. Which part of the business represents the greatest risk? What is the greatest risk?)</p>	<p>[0] 1 2 3 4 5</p>	<p>0 = Little or no knowledge, 1 = Little knowledge & ad hoc processes, 2 = Good knowledge & ad hoc processes, 3 = Consistent processes & partially documented, 4 = Extensive knowledge & partially documented, 5 = Fully documented & externally audited</p>
<p>1.06.05 Processes for managing risk reduction, including the assessment of mitigation options. (eg. How should the risk be mitigated and how are the risks tracked and reported?)</p>	<p>0 [1] 2 3 4 5</p>	<p>0 = Little or no knowledge, 1 = Little knowledge & ad hoc processes, 2 = Good knowledge & ad hoc processes, 3 = Consistent processes & partially documented, 4 = Extensive knowledge & partially documented, 5 = Fully documented & externally audited</p>
<p>1 Processes and Practices - 1.07 Creation and Acquisition</p>		
<p>1.07.01 Processes for the successful Program Management of the asset creation or acquisition program. (eg. Process for the tracking of projects from the strategic planning stage (project identification) through to the final service delivery/ commissioning and handover.)</p>	<p>0 [1] 2 3 4 5</p>	<p>0 = Little or no knowledge, 1 = Little knowledge & ad hoc processes, 2 = Good knowledge & ad hoc processes, 3 = Consistent processes & partially documented, 4 = Extensive knowledge & partially documented, 5 = Fully documented & externally audited</p>
<p>1.07.02 Processes for Contract Administration. (eg. Processes for managing all the contractors necessary for the works and the interface with the asset owner.)</p>	<p>0 1 2 3 [4] 5</p>	<p>0 = Little or no knowledge, 1 = Little knowledge & ad hoc processes, 2 = Good knowledge & ad hoc processes, 3 = Consistent processes & partially documented, 4 = Extensive knowledge & partially documented, 5 = Fully documented & externally audited</p>
<p>1.07.03 Processes for Project Management. (eg. Processes for the financial cost control and timely delivery of a project and the mitigation of risks involved in this area.)</p>	<p>0 1 [2] 3 4 5</p>	<p>0 = Little or no knowledge, 1 = Little knowledge & ad hoc processes, 2 = Good knowledge & ad hoc processes, 3 = Consistent processes & partially documented, 4 = Extensive knowledge & partially documented, 5 = Fully documented & externally audited</p>



<p>1.07.04 Processes for Value Engineering. (eg. How does the organization approach the issue of 'value engineering' and how well is this documented? How is the optimum design assessed and adopted?)</p>	<p>0 1 [2] 3 4 5</p>	<p>0 = Little or no knowledge, 1 = Little knowledge & ad hoc processes, 2 = Good knowledge & ad hoc processes, 3 = Consistent processes & partially documented, 4 = Extensive knowledge & partially documented, 5 = Fully documented & externally audited</p>
<p>1.07.05 Processes that ensure the optimum maintainability / operability of new assets is achieved. (eg. Are design reviews by the operations and maintenance staff undertaken prior to final design and are these carefully assessed?)</p>	<p>0 1 [2] 3 4 5</p>	<p>0 = Little or no knowledge, 1 = Little knowledge & ad hoc processes, 2 = Good knowledge & ad hoc processes, 3 = Consistent processes & partially documented, 4 = Extensive knowledge & partially documented, 5 = Fully documented & externally audited</p>
<p>1.07.06 Processes for ensuring appropriate construction standards and quality control is achieved in all asset creation and acquisition work. (eg. Are contractor audits and other quality control mechanisms used?)</p>	<p>0 1 [2] 3 4 5</p>	<p>0 = Little or no knowledge, 1 = Little knowledge & ad hoc processes, 2 = Good knowledge & ad hoc processes, 3 = Consistent processes & partially documented, 4 = Extensive knowledge & partially documented, 5 = Fully documented & externally audited</p>
<p>1.07.07 Processes for asset commissioning and handover. (eg. Is all the required information collected at time of commissioning to match the data standards discussed in item 1.02 , including as-constructed drawings and operations/maintenance procedures and manuals. Is the initial performance of the asset assessed?)</p>	<p>0 1 2 [3] 4 5</p>	<p>0 = Little or no knowledge, 1 = Little knowledge & ad hoc processes, 2 = Good knowledge & ad hoc processes, 3 = Consistent processes & partially documented, 4 = Extensive knowledge & partially documented, 5 = Fully documented & externally audited</p>

1 Processes and Practices - 1.08 Rationalization and Disposal

<p>1.08.01 Processes for rationalizing the existing asset portfolio and disposal of unwanted assets. (eg. Identifying assets for disposal, mothballing or transfer to improve business effectiveness to reduce cost and release funds for other purposes.)</p>	<p>0 1 [2] 3 4 5</p>	<p>0 = Little or no knowledge, 1 = Little knowledge & ad hoc processes, 2 = Good knowledge & ad hoc processes, 3 = Consistent processes & partially documented, 4 = Extensive knowledge & partially documented, 5 = Fully documented & externally audited</p>
<p>1.08.02 Processes for disposing of assets. The processes for good governance and ethical behavior in this area. (eg. Are these assets removed from the asset register and on other asset systems, eg. The GIS?)</p>	<p>0 1 [2] 3 4 5</p>	<p>0 = Little or no knowledge, 1 = Little knowledge & ad hoc processes, 2 = Good knowledge & ad hoc processes, 3 = Consistent processes & partially documented, 4 = Extensive knowledge & partially documented, 5 = Fully documented & externally audited</p>

1 Processes and Practices - 1.09 Operations



<p>1.09.011 Processes for developing and maintaining operating procedures. (eg. Are new assets automatically included and how often are they reviewed?)</p>	<p>0 1 [2] 3 4 5</p>	<p>0 = Little or no knowledge, 1 = Little knowledge & ad hoc processes, 2 = Good knowledge & ad hoc processes, 3 = Consistent processes & partially documented, 4 = Extensive knowledge & partially documented, 5 = Fully documented & externally audited</p>
<p>1.09.012 Quality of the actual Operating Procedures, which relate to the successful operation of all assets in relation to normal and emergency operations. (eg. Do these exist, cover all areas and assets down to the maintenance managed item level ?)</p>	<p>0 1 [2] 3 4</p>	<p>0 = None, 1 = Under development, 2 = Documented in some business areas, 3 = Documented & covering whole business, 4 = Documented & fully implemented across whole business</p>
<p>1.09.021 Processes for developing and maintaining operation manuals. (eg. Are new assets automatically included and how often are they reviewed? How should operators update the manuals when procedures change?)</p>	<p>0 1 2 [3] 4 5</p>	<p>0 = Little or no knowledge, 1 = Little knowledge & ad hoc processes, 2 = Good knowledge & ad hoc processes, 3 = Consistent processes & partially documented, 4 = Extensive knowledge & partially documented, 5 = Fully documented & externally audited</p>
<p>1.09.022 Quality of the actual Operating Manuals and Standards. (eg. What form should do they take and does the manuals cover all assets?)</p>	<p>0 1 2 [3] 4</p>	<p>0 = None, 1 = Under development, 2 = Documented in some business areas, 3 = Documented & covering whole business, 4 = Documented & fully implemented across whole business</p>
<p>1.09.03 Processes for handling customer and stakeholder complaints. (eg. Are these tracked through the business from receipt to resolution? Is the customer kept informed of the progress of their complaint?)</p>	<p>0 1 2 [3] 4 5</p>	<p>0 = Little or no knowledge, 1 = Little knowledge & ad hoc processes, 2 = Good knowledge & ad hoc processes, 3 = Consistent processes & partially documented, 4 = Extensive knowledge & partially documented, 5 = Fully documented & externally audited</p>
<p>1.09.041 Processes for the development and maintenance of Emergency Response Plans, including for what events, against what level and criticality of asset should these be completed. (eg. Are new assets automatically included and how often are they reviewed and what triggers the need for upgrades?)</p>	<p>0 [1] 2 3 4 5</p>	<p>0 = Little or no knowledge, 1 = Little knowledge & ad hoc processes, 2 = Good knowledge & ad hoc processes, 3 = Consistent processes & partially documented, 4 = Extensive knowledge & partially documented, 5 = Fully documented & externally audited</p>
<p>1.09.042 Quality of the actual Emergency Response Plans. (eg. Do these exist and cover all asset services? Are they to the appropriate level of detail?)</p>	<p>[0] 1 2 3 4</p>	<p>0 = None, 1 = Under development, 2 = Documented in some business areas, 3 = Documented & covering whole business, 4 = Documented & fully implemented across whole business</p>

1 Processes and Practices - 1.10 Maintenance



<p>1.10.01 Maintenance policy that defines where the organisation undertakes maintenance of its assets. (eg. Does a corporate wide policy exist and is it related to business goals and cost analysis ?)</p>	<p>0 [1] 2 3 4</p>	<p>0 = None, 1 = Under development, 2 = Documented in some business areas, 3 = Documented & covering whole business, 4 = Documented & fully implemented across whole business</p>
<p>1.10.02 Processes for maintenance planning. (eg. Is there a process for defining how each asset / asset type will be maintained? What is the basis for determining the maintenance procedure or activity for a single asset? Does this process cover all assets?)</p>	<p>0 1 [2] 3 4 5</p>	<p>0 = Little or no knowledge, 1 = Little knowledge & ad hoc processes, 2 = Good knowledge & ad hoc processes, 3 = Consistent processes & partially documented, 4 = Extensive knowledge & partially documented, 5 = Fully documented & externally audited</p>
<p>1.10.03 Processes for maintenance scheduling. (eg. How does the organization determine the maintenance schedule or intervals for the prescribed maintenance activity?)</p>	<p>0 1 2 [3] 4 5</p>	<p>0 = Little or no knowledge, 1 = Little knowledge & ad hoc processes, 2 = Good knowledge & ad hoc processes, 3 = Consistent processes & partially documented, 4 = Extensive knowledge & partially documented, 5 = Fully documented & externally audited</p>
<p>1.10.04 Processes for monitoring and controlling the maintenance program. (eg. Is there adequate reporting and feedback from field staff and information systems to enable the complete understanding of what is happening to the assets?)</p>	<p>0 1 [2] 3 4 5</p>	<p>0 = Little or no knowledge, 1 = Little knowledge & ad hoc processes, 2 = Good knowledge & ad hoc processes, 3 = Consistent processes & partially documented, 4 = Extensive knowledge & partially documented, 5 = Fully documented & externally audited</p>
<p>1.10.05 Processes for recording and reporting maintenance costs down to the maintenance managed item level. (eg. Are asset costs reported and accessible? Is there a clear policy on what is required ?)</p>	<p>0 1 2 3 [4] 5</p>	<p>0 = Little or no knowledge, 1 = Little knowledge & ad hoc processes, 2 = Good knowledge & ad hoc processes, 3 = Consistent processes & partially documented, 4 = Extensive knowledge & partially documented, 5 = Fully documented & externally audited</p>
<p>1.10.061 Processes for developing and maintaining contents of the Maintenance Manuals and Instructions. (eg. Are new assets automatically included and how often are they reviewed? What is the process by which the responsible staff can update them? Is the format specified?)</p>	<p>0 1 2 [3] 4 5</p>	<p>0 = Little or no knowledge, 1 = Little knowledge & ad hoc processes, 2 = Good knowledge & ad hoc processes, 3 = Consistent processes & partially documented, 4 = Extensive knowledge & partially documented, 5 = Fully documented & externally audited</p>
<p>1.10.062 Quality of the Maintenance Manuals and Instructions. (eg. Do these exist and cover all business units/divisions and assets types?)</p>	<p>0 1 [2] 3 4</p>	<p>0 = None, 1 = Under development, 2 = Documented in some business areas, 3 = Documented & covering whole business, 4 = Documented & fully implemented across whole business</p>



<p>1.10.07 Processes for reviewing and analyzing maintenance programs. (eg. Is this a systematic process? Are the trigger points and processes understood by all?)</p>	<p>0 1 2 3 [4] 5</p>	<p>0 = Little or no knowledge, 1 = Little knowledge & ad hoc processes, 2 = Good knowledge & ad hoc processes, 3 = Consistent processes & partially documented, 4 = Extensive knowledge & partially documented, 5 = Fully documented & externally audited</p>
<p>1.10.08 Processes for developing maintenance strategies that incorporate the overall business drivers for maintenance, capital and system performance. (eg. Is there a corporate wide approach to developing maintenance strategies that covers all assets and amalgamate to higher levels?)</p>	<p>0 1 [2] 3 4 5</p>	<p>0 = Little or no knowledge, 1 = Little knowledge & ad hoc processes, 2 = Good knowledge & ad hoc processes, 3 = Consistent processes & partially documented, 4 = Extensive knowledge & partially documented, 5 = Fully documented & externally audited</p>
<p>1 Processes and Practices - 1.11 Work and Resource Management</p>		
<p>1.11.01 Processes for matching skills to the demand for services / activities and allocating resources across the organization. (eg. What is the process for matching resource demand with available supply? Is it across the organization?)</p>	<p>0 1 2 [3] 4 5</p>	<p>0 = Little or no knowledge, 1 = Little knowledge & ad hoc processes, 2 = Good knowledge & ad hoc processes, 3 = Consistent processes & partially documented, 4 = Extensive knowledge & partially documented, 5 = Fully documented & externally audited</p>
<p>1.11.02 Processes for prioritizing work orders. (eg. Are work orders allocated an rating or criticality score? Are these based on the risk to the business?)</p>	<p>0 1 [2] 3 4 5</p>	<p>0 = Little or no knowledge, 1 = Little knowledge & ad hoc processes, 2 = Good knowledge & ad hoc processes, 3 = Consistent processes & partially documented, 4 = Extensive knowledge & partially documented, 5 = Fully documented & externally audited</p>
<p>1.11.03 Processes for managing larger projects that involve multiple tasks and tracking of those costs. (eg. Processes for the financial control and timely delivery of a group of work orders.)</p>	<p>0 1 [2] 3 4 5</p>	<p>0 = Little or no knowledge, 1 = Little knowledge & ad hoc processes, 2 = Good knowledge & ad hoc processes, 3 = Consistent processes & partially documented, 4 = Extensive knowledge & partially documented, 5 = Fully documented & externally audited</p>
<p>1.11.04 Processes for controlling inventory or stock. (eg. Are work orders linked to the required spare parts? Are these spare parts ordered in advance of completing the work order?)</p>	<p>0 1 2 3 4 [5]</p>	<p>0 = Little or no knowledge, 1 = Little knowledge & ad hoc processes, 2 = Good knowledge & ad hoc processes, 3 = Consistent processes & partially documented, 4 = Extensive knowledge & partially documented, 5 = Fully documented & externally audited</p>



<p>1.11.05 Processes for planning future work load and required resources. (eg. Does the organization predict and balance future work load for different skills and numbers of staff for all life cycle functions?)</p>	<p>0 1 [2] 3 4 5</p>	<p>0 = Little or no knowledge, 1 = Little knowledge & ad hoc processes, 2 = Good knowledge & ad hoc processes, 3 = Consistent processes & partially documented, 4 = Extensive knowledge & partially documented, 5 = Fully documented & externally audited</p>
<p>1 Processes and Practices - 1.12 Continuous Improvement</p>		
<p>1.12.01 Quality Manual for Asset Management - a knowledge management system that contains all the processes and practice materials described previously. (eg. Does a manual exist? Does it cover all life cycle Asset Management functions?)</p>	<p>0 [1] 2 3 4</p>	<p>0 = None, 1 = Under development, 2 = Documented in some business areas, 3 = Documented & covering whole business, 4 = Documented & fully implemented across whole business</p>
<p>1.12.02 Asset Management Process Diagrams and Flowcharts. (eg. Are internal Asset Management processes mapped? Do they cover all Asset Management functions? Are they readily available to staff?)</p>	<p>[0] 1 2 3 4</p>	<p>0 = None, 1 = Under development, 2 = Documented in some business areas, 3 = Documented & covering whole business, 4 = Documented & fully implemented across whole business</p>
<p>1.12.03 Processes for internal quality assurance. (eg. Internal audit processes that ensure the best appropriate practices adopted by the business are followed across all business units.)</p>	<p>0 [1] 2 3 4 5</p>	<p>0 = Little or no knowledge, 1 = Little knowledge & ad hoc processes, 2 = Good knowledge & ad hoc processes, 3 = Consistent processes & partially documented, 4 = Extensive knowledge & partially documented, 5 = Fully documented & externally audited</p>
<p>1.12.04 Processes for externally auditing and benchmarking Asset Management practices for both input (process) and output (cost activity) benchmarking. (eg. Does the organization undertake external input and output benchmarking?)</p>	<p>0 1 2 [3] 4 5</p>	<p>0 = Little or no knowledge, 1 = Little knowledge & ad hoc processes, 2 = Good knowledge & ad hoc processes, 3 = Consistent processes & partially documented, 4 = Extensive knowledge & partially documented, 5 = Fully documented & externally audited</p>
<p>1.12.05 Processes followed for identifying cost reduction opportunities. (eg. Is this a random or systematic process? Does the organization have a process by which new ideas and suggestions are reviewed?)</p>	<p>0 1 [2] 3 4 5</p>	<p>0 = Little or no knowledge, 1 = Little knowledge & ad hoc processes, 2 = Good knowledge & ad hoc processes, 3 = Consistent processes & partially documented, 4 = Extensive knowledge & partially documented, 5 = Fully documented & externally audited</p>
<p>1.12.06 Processes for implementing and reporting on the progress achieved with approved Asset Management improvement programs. (eg. Does the organization develop and track the progress of these programs?)</p>	<p>0 1 [2] 3 4 5</p>	<p>0 = Little or no knowledge, 1 = Little knowledge & ad hoc processes, 2 = Good knowledge & ad hoc processes, 3 = Consistent processes & partially documented, 4 = Extensive knowledge & partially documented, 5 = Fully documented & externally audited</p>



2 Information Systems - 2.01 Primary Information Systems

<p>2.01.01 Financial System. (eg. The system to store asset costing information. Chart of accounts, general ledger etc.)</p>	<p>0 1 2 3 [4]</p>	<p>0 = None, 1 = Card/paper system or spreadsheet, 2 = Developed in-house - eg. MS Access, 3 = Externally developed & most functionality utilized, 4 = Externally developed - interfaced with other systems & functionality fully utilized</p>
<p>2.01.02 Customer and / or Property Records System. (eg. System to track customer and related served property details.)</p>	<p>0 1 2 3 [4]</p>	<p>0 = None, 1 = Card/paper system or spreadsheet, 2 = Developed in-house - eg. MS Access, 3 = Externally developed & most functionality utilized, 4 = Externally developed - interfaced with other systems & functionality fully utilized</p>
<p>2.01.03 Complaints or Enquiries System. (eg. System to store the details and track customer complaints and enquires from receipt to conclusion.)</p>	<p>0 1 [2] 3 4</p>	<p>0 = None, 1 = Card/paper system or spreadsheet, 2 = Developed in-house - eg. MS Access, 3 = Externally developed & most functionality utilized, 4 = Externally developed - interfaced with other systems & functionality fully utilized</p>
<p>2.01.04 Asset Register System. (eg. System to store asset hierarchy and attributes for all assets that make up the asset system.)</p>	<p>0 1 [2] 3 4</p>	<p>0 = None, 1 = Card/paper system or spreadsheet, 2 = Developed in-house - eg. MS Access, 3 = Externally developed & most functionality utilized, 4 = Externally developed - interfaced with other systems & functionality fully utilized</p>
<p>2.01.05 Plans and Drawings Information System. (eg. System to manage, store and access the detailed drawings of all facilities and buildings.)</p>	<p>0 1 [2] 3 4</p>	<p>0 = None, 1 = Card/paper system or spreadsheet, 2 = Developed in-house or stored on a network, 3 = Externally developed & most functionality utilized, 4 = Externally developed - interfaced with other systems & fully utilized</p>
<p>2.01.06 Geographic Information System. (eg. System to spatially store asset locations and key attributes for all distributed and linear / networked assets including the base locations of assets.)</p>	<p>0 1 2 [3] 4</p>	<p>0 = None, 1 = Card/paper system or spreadsheet, 2 = Developed in-house - eg. MS Access, 3 = Externally developed & most functionality utilized, 4 = Externally developed - interfaced with other systems & functionality fully utilized</p>
<p>2.01.07 Maintenance Management System. (eg. System to manage maintenance activities including activities / work orders / scheduling / controlling and costing for all assets down to maintenance managed item level.)</p>	<p>0 1 2 [3] 4</p>	<p>0 = None, 1 = Card/paper system or spreadsheet, 2 = Developed in-house - eg. MS Access, 3 = Externally developed & most functionality utilized, 4 = Externally developed - interfaced with other systems & functionality fully utilized</p>



<p>2.01.08 Operations and Maintenance Manuals Storage System. (eg. Electronic System to store and track operations and maintenance manual materials.)</p>	<p>[0] 1 2 3 4</p>	<p>0 = None, 1 = Card/paper system or spreadsheet, 2 = Developed in-house or stored on a network, 3 = Externally developed & most functionality utilized, 4 = Externally developed - interfaced with other systems & fully utilized</p>
<p>2.01.08 Emergency Response Plans Information System. (eg. System to store and track emergency response plans, linked through to the asset register in accordance with the data standard.)</p>	<p>[0] 1 2 3 4</p>	<p>0 = None, 1 = Card/paper system or spreadsheet, 2 = Developed in-house or stored on a network, 3 = Externally developed & most functionality utilized, 4 = Externally developed - interfaced with other systems & fully utilized</p>
<p>2.01.09 Job Resource Management System. (eg. System to create and track work orders covering labor, plant, specialist tools and materials.)</p>	<p>[0] 1 2 3 4</p>	<p>0 = None, 1 = Card/paper system or spreadsheet, 2 = Developed in-house - eg. MS Access, 3 = Externally developed & most functionality utilized, 4 = Externally developed - interfaced with other systems & functionality fully utilized</p>
<p>2 Information Systems - 2.02 Secondary Information Systems</p>		
<p>2.02.01 Knowledge Management System. (eg. System to store papers, guidelines, manuals, policies in relation to life cycle Asset Management of the organisation asset portfolio etc.)</p>	<p>[0] 1 2 3 4</p>	<p>0 = None, 1 = Card/paper system or spreadsheet, 2 = Developed in-house or stored on a network, 3 = Externally developed & most functionality utilized, 4 = Externally developed - interfaced with other systems & fully utilized</p>
<p>2.02.02 Inventory Spares and Purchasing System. (eg. System to track quantity and purchasing of spare parts. This system is linked to the construction and maintenance / operations systems and staff needs.)</p>	<p>0 1 2 [3] 4</p>	<p>0 = None, 1 = Card/paper system or spreadsheet, 2 = Developed in-house - eg. MS Access, 3 = Externally developed & most functionality utilized, 4 = Externally developed - interfaced with other systems & functionality fully utilized</p>
<p>2.02.03 Condition Assessment Records System. (eg. System to store condition data, and to analyse this with respect to the parameters or required levels of service.)</p>	<p>0 1 2 [3] 4</p>	<p>0 = None, 1 = Card/paper system or spreadsheet, 2 = Developed in-house or stored on a network, 3 = Externally developed & most functionality utilized, 4 = Externally developed - interfaced with other systems & fully utilized</p>
<p>2.02.04 Predicting Asset Capacity and Utilization. (eg. Capacity modeling tools for determining / simulating current asset capacity, eg. Pipeline capacity / road traffic models etc.)</p>	<p>0 [1] 2 3 4</p>	<p>0 = None, 1 = Card/paper system or spreadsheet, 2 = Developed in-house - eg. MS Access, 3 = Externally developed & most functionality utilized, 4 = Externally developed - interfaced with other systems & functionality fully utilized</p>



<p>2.02.05 Asset Failure Prediction. (eg. Prediction of failure in terms of capacity , reliability, condition, performance and outages/ emergency failures. These allow the organization to model the full range of level of service failures.)</p>	<p>[0] 1 2 3 4</p>	<p>0 = None, 1 = Card/paper system or spreadsheet, 2 = Developed in-house - eg. MS Access, 3 = Externally developed & most functionality utilized, 4 = Externally developed - interfaced with other systems & functionality fully utilized</p>
<p>2 Information Systems - 2.03 Tertiary Information Systems</p>		
<p>2.03.01 Risk Assessment Information System. (eg. System used for undertaking and storing risk assessments for both the consequences of failure and probability of failure.)</p>	<p>0 1 2 [3] 4</p>	<p>0 = None, 1 = Card/paper system or spreadsheet, 2 = Developed in-house - eg. MS Access, 3 = Externally developed & most functionality utilized, 4 = Externally developed - interfaced with other systems & functionality fully utilized</p>
<p>2.03.02 Data Warehouse. (eg. System to store, manage and report on data from other information systems. This system should complete basic manipulation and produce regular reports.)</p>	<p>0 1 2 [3] 4</p>	<p>0 = None, 1 = Card/paper system or spreadsheet, 2 = Developed in-house - eg. MS Access, 3 = Externally developed & most functionality utilized, 4 = Externally developed - interfaced with other systems & functionality fully utilized</p>
<p>2.03.04 Life Cycle Cost Modeling System. (eg. System for modeling the life cycle costs of different asset options and solutions for new assets where no spent costs are involved. It allows all supply options to be considered.)</p>	<p>0 [1] 2 3 4</p>	<p>0 = None, 1 = Card/paper system or spreadsheet, 2 = Developed in-house - eg. MS Access, 3 = Externally developed & most functionality utilized, 4 = Externally developed - interfaced with other systems & functionality fully utilized</p>
<p>2.03.05 Mobile Computing Facilities. (eg. Pocket PC's, laptops and tablets PC's to be used by field operations and maintenance staff for rapid data entry and live access and updating of work orders.)</p>	<p>0 1 [2] 3 4</p>	<p>0 = None, 1 = Developed business case, 2 = Aging technology or some usage, 3 = Business wide usage, 4 = Business wide usage - interfaced with other systems</p>
<p>2.03.06 Project Management Support Tools. (eg. Tools for tracking the timing and costing of multiple tasks / resources to produce the deliverables required.)</p>	<p>0 1 [2] 3 4</p>	<p>0 = None, 1 = Card/paper system or spreadsheet, 2 = Developed in-house - eg. MS Access, 3 = Externally developed & most functionality utilized, 4 = Externally developed - interfaced with other systems & functionality fully utilized</p>
<p>2.03.09 Store/Stock Optimization Systems. (eg. Systems for optimizing the level of stores and spare parts to be carried for like assets across the organization.)</p>	<p>0 1 2 [3] 4</p>	<p>0 = None, 1 = Card/paper system or spreadsheet, 2 = Developed in-house - eg. MS Access, 3 = Externally developed & most functionality utilized, 4 = Externally developed - interfaced with other systems & functionality fully utilized</p>

2 Information Systems - 2.04 Information System Issues



2.04.01 User friendliness of information systems. (eg. Are the information easy to use, quick to learn and make data input / extraction easy?)	1 2 [3] 4	1 = Strongly disagree, 2 = Disagree, 3 = Agree, 4 = Strongly agree
2.04.02 Information Systems are well integrated. (eg. The information systems are linked and data can be accessed from different access / entry points, eg. GIS /CMMS. Only one point of data update is required.)	0 1 2 [3] 4	0 = None, 1 = Developed business case, 2 = Implementation has started, 3 = Some systems are interfaced/integrated, 4 = All required system are interfaced/integrated - no data is duplicated
2.04.03 Access and Response of Information Systems. (eg. Staff have ready access to the information systems and response times are acceptable for both data entry and update.)	0 1 2 3 [4]	0 = Local access only, 1 = Developed business case, 2 = Some sites connected, 3 = All remote sites connected with some slow speed connections, 4 = All remote sites connected with high speed connections
2.04.04 Information Technology System Strategy. (eg. Does a corporate strategy exist? Is it comprehensive and include Asset Management systems? Does it accommodate expected usage and the growth in Asset Management data and information, access and system response times etc.)	0 [1] 2 3 4	0 = None, 1 = Under development, 2 = Documented in some business areas, 3 = Documented & covering whole business, 4 = Documented & fully implemented across whole business
3 Data and Knowledge - 3.01 Primary Data and Knowledge		
3.01.01 Asset Categorization. (eg. Ability to group assets by type, location, material, facility etc. for reporting and manipulation.)	0 1 [2] 3	0 = Assets are unable to be grouped, 1 = Assets can be grouped in one way only, 2 = Assets can be grouped in two or more ways, 3 = Assets can be grouped in any way
3.01.02 Asset Hierarchical Structure. (eg. The level (maintenance managed item) to which asset information is collected and the ability to amalgamate asset costs and performance.)	0 1 [2] 3 4 5	0 = None, 1 = Service type, 2 = Facility or system level, 3 = Asset type level, 4 = Asset level, 5 = Maintenance managed item level
3.01.03 Asset Spatial Data. (eg. Spatial data stored within the GIS. Especially, all distributed linear assets and locations of larger facilities.)	0 35 50 65 [80] 95	0 = No Data, 35 = 35% Accurate & complete, 50 = 50% Accurate & complete, 65 = 65% Accurate & complete, 80 = 80% Accurate & complete, 95 = 95% Accurate & complete



3.01.03 Drawing / Plans. (eg. Drawings and plans of assets and facilities.)	0 35 50 [65] 80 95	0 = No Data, 35 = 35% Accurate & complete, 50 = 50% Accurate & complete, 65 = 65% Accurate & complete, 80 = 80% Accurate & complete, 95 = 95% Accurate & complete
3.01.04 Basic physical attributes. (eg. Size, material, installation date, model etc.)	0 [35] 50 65 80 95	0 = No Data, 35 = 35% Accurate & complete, 50 = 50% Accurate & complete, 65 = 65% Accurate & complete, 80 = 80% Accurate & complete, 95 = 95% Accurate & complete
3.01.05 Asset valuation data. (eg. Current asset replacement values / historical value and written down depreciated values.)	0 35 50 [65] 80 95	0 = No Data, 35 = 35% Accurate & complete, 50 = 50% Accurate & complete, 65 = 65% Accurate & complete, 80 = 80% Accurate & complete, 95 = 95% Accurate & complete

3 Data and Knowledge - 3.02 Secondary Data and Knowledge

3.02.01 Detailed physical attributes. (eg. Manufacturer, spare parts and numbers etc.)	[0] 35 50 65 80 95	0 = No Data, 35 = 35% Accurate & complete, 50 = 50% Accurate & complete, 65 = 65% Accurate & complete, 80 = 80% Accurate & complete, 95 = 95% Accurate & complete
3.02.02 Asset condition data. (eg. Rating of asset condition data.)	0 35 50 [65] 80 95	0 = No Data, 35 = 35% Accurate & complete, 50 = 50% Accurate & complete, 65 = 65% Accurate & complete, 80 = 80% Accurate & complete, 95 = 95% Accurate & complete
3.02.02 Asset performance data. (eg. Recording and rating of asset performance.)	0 [35] 50 65 80 95	0 = No Data, 35 = 35% Accurate & complete, 50 = 50% Accurate & complete, 65 = 65% Accurate & complete, 80 = 80% Accurate & complete, 95 = 95% Accurate & complete



<p>3.02.03 Maintenance Data. (eg. Detailed maintenance history including activity and timing.)</p>	<p>0 35 50 65 80 [95]</p>	<p>0 = No Data, 35 = 35% Accurate & complete, 50 = 50% Accurate & complete, 65 = 65% Accurate & complete, 80 = 80% Accurate & complete, 95 = 95% Accurate & complete</p>
<p>3.02.04 Operations Data. (eg. Operations history and data on failure consequences management.)</p>	<p>[0] 35 50 65 80 95</p>	<p>0 = No Data, 35 = 35% Accurate & complete, 50 = 50% Accurate & complete, 65 = 65% Accurate & complete, 80 = 80% Accurate & complete, 95 = 95% Accurate & complete</p>
<p>3.02.05 Works and / or resource management data. (eg. The data related to the resource elements of work order history including labor, plant and materials work performed, in both capital and recurrent activities.)</p>	<p>0 35 50 65 80 [95]</p>	<p>0 = No Data, 35 = 35% Accurate & complete, 50 = 50% Accurate & complete, 65 = 65% Accurate & complete, 80 = 80% Accurate & complete, 95 = 95% Accurate & complete</p>
<p>3 Data and Knowledge - 3.03 Tertiary Data and Knowledge</p>		
<p>3.03.01 Risk Assessment Data. (eg. Risk assessment data including probability and consequence of failure, and the subsequent business risk exposure.)</p>	<p>0 35 50 65 [80] 95</p>	<p>0 = No Data, 35 = 35% Accurate & complete, 50 = 50% Accurate & complete, 65 = 65% Accurate & complete, 80 = 80% Accurate & complete, 95 = 95% Accurate & complete</p>
<p>3.03.02 Cost history data. (eg. Full cost history of maintenance and operation activities together with depreciation and capital use charges where applicable.)</p>	<p>0 35 50 65 80 [95]</p>	<p>0 = No Data, 35 = 35% Accurate & complete, 50 = 50% Accurate & complete, 65 = 65% Accurate & complete, 80 = 80% Accurate & complete, 95 = 95% Accurate & complete</p>
<p>3.03.03 Data for costing of options. (eg. Cost summary for standard construction and rehabilitation techniques, maintenance and operational activities and options.)</p>	<p>0 35 50 65 80 [95]</p>	<p>0 = No Data, 35 = 35% Accurate & complete, 50 = 50% Accurate & complete, 65 = 65% Accurate & complete, 80 = 80% Accurate & complete, 95 = 95% Accurate & complete</p>



<p>3.03.05 Life Cycle Cost Histories. (eg. Stored history of life cycle cost analysis calculations.)</p>	<p>[0] 35 50 65 80 95</p>	<p>0 = No Data, 35 = 35% Accurate & complete, 50 = 50% Accurate & complete, 65 = 65% Accurate & complete, 80 = 80% Accurate & complete, 95 = 95% Accurate & complete</p>
<p>4 Commercial Tactics - 4.01 Commercial Tactics</p>		
<p>4.01.01 Core and non-core activities identified. (eg. Process to identify which activities are core and not core to the business.)</p>	<p>0 [1] 2 3 4 5</p>	<p>0 = Little or no knowledge, 1 = Little knowledge & ad hoc processes, 2 = Good knowledge & ad hoc processes, 3 = Consistent processes & partially documented, 4 = Extensive knowledge & partially documented, 5 = Fully documented & externally audited</p>
<p>4.01.02 Contracts packaged to achieve economic efficiencies in the short and long term. (eg. How does the organisation optimize its contracts to get to get the lowest overheads and total costs of service delivery.)</p>	<p>0 1 2 [3] 4 5</p>	<p>0 = Little or no knowledge, 1 = Little knowledge & ad hoc processes, 2 = Good knowledge & ad hoc processes, 3 = Consistent processes & partially documented, 4 = Extensive knowledge & partially documented, 5 = Fully documented & externally audited</p>
<p>4.01.03 Good quality contracts / specifications for contracts and service agreements. (eg. Do contracts deliver the full requirements of the organization and are they regularly updated?)</p>	<p>0 1 2 3 [4] 5</p>	<p>0 = Little or no knowledge, 1 = Little knowledge & ad hoc processes, 2 = Good knowledge & ad hoc processes, 3 = Consistent processes & partially documented, 4 = Extensive knowledge & partially documented, 5 = Fully documented & externally audited</p>
<p>4.01.04 Processes for ensuring contractors have access to the required information and data. (eg. Can external contractors efficiently access data required to perform their tasks, with the integrity of the data protected?)</p>	<p>0 1 2 [3] 4 5</p>	<p>0 = Little or no knowledge, 1 = Little knowledge & ad hoc processes, 2 = Good knowledge & ad hoc processes, 3 = Consistent processes & partially documented, 4 = Extensive knowledge & partially documented, 5 = Fully documented & externally audited</p>
<p>4.01.04 Processes exist for ensuring good feedback of data and knowledge back into the business from all contracted (external) and in-house (internal) service providers. (eg. Are service providers regularly providing feedback into the business? What is the quality of that information including completed work orders?)</p>	<p>0 1 [2] 3 4 5</p>	<p>0 = Little or no knowledge, 1 = Little knowledge & ad hoc processes, 2 = Good knowledge & ad hoc processes, 3 = Consistent processes & partially documented, 4 = Extensive knowledge & partially documented, 5 = Fully documented & externally audited</p>



<p>4.01.05 Processes for monitoring the performance of sub-contractors. (eg. Are regular audits completed? Does the organization have a system to do this and link to performance based contract payments?)</p>	<p>0 1 2 [3] 4 5</p>	<p>0 = Little or no knowledge, 1 = Little knowledge & ad hoc processes, 2 = Good knowledge & ad hoc processes, 3 = Consistent processes & partially documented, 4 = Extensive knowledge & partially documented, 5 = Fully documented & externally audited</p>
<p>4.01.06 Processes for assessing and selecting contractors. (eg. Is there a systematic process for different sized jobs? Is more than cost taken into account? Does the organization make use of panel contracts?)</p>	<p>0 1 2 3 4 [5]</p>	<p>0 = Little or no knowledge, 1 = Little knowledge & ad hoc processes, 2 = Good knowledge & ad hoc processes, 3 = Consistent processes & partially documented, 4 = Extensive knowledge & partially documented, 5 = Fully documented & externally audited</p>
<p>4.01.07 Information and communication systems to support contract administration. (eg. The organizations information systems create an efficient environment in which contract scopes, approvals and payments are significantly automated?)</p>	<p>0 1 2 3 [4] 5</p>	<p>0 = Little or no knowledge, 1 = Little knowledge & ad hoc processes, 2 = Good knowledge & ad hoc processes, 3 = Consistent processes & partially documented, 4 = Extensive knowledge & partially documented, 5 = Fully documented & externally audited</p>

5 Organizational Issues - 5.01 Organizational Issues

<p>5.01.01 Organization commitment to Asset Management. (eg. Is this documented in corporate policy / business plans, organizational objectives and mission statements in such a way as to show its importance to the business?)</p>	<p>0 1 [2] 3 4</p>	<p>0 = None, 1 = Under development, 2 = Documented in some business areas, 3 = Documented & covering whole business, 4 = Documented & fully implemented across whole business</p>
<p>5.01.01 Single executive manager with Asset Management responsibility. (eg. Is it clearly documented who has the responsibility for asset decisions in the organization? Are the roles and responsibilities clearly defined throughout the structure?)</p>	<p>1 [2] 3 4</p>	<p>1 = Strongly disagree, 2 = Disagree, 3 = Agree, 4 = Strongly agree</p>
<p>5.01.02 Asset Management roles and responsibilities. (eg. Are they clearly defined right across and down the organization? Are they linked to job specifications?)</p>	<p>0 1 2 [3] 4</p>	<p>0 = None, 1 = Under development, 2 = Documented in some business areas, 3 = Documented & covering whole business, 4 = Documented & fully implemented across whole business</p>
<p>5.01.03 Asset Management Coordinating Group or Steering Committee. (eg. Is there an Asset Management steering committee with links into the board and executive management?)</p>	<p>[0] 1 2 3 4</p>	<p>0 = None, 1 = Under development, 2 = Narrow representation across business & meets on ad hoc basis, 3 = Broad representation & meets infrequently, 4 = Broad representation & meets regularly with developed action plans</p>



<p>5.01.04 Asset Management team or coordination group. (eg. Does this group exist within the business?)</p>	<p>[0] 1 2 3 4</p>	<p>0 = None, 1 = Under development, 2 = Narrow representation across business & meets on ad hoc basis, 3 = Broad representation & meets infrequently, 4 = Broad representation & meets regularly with developed action plans</p>
<p>5.01.05 Asset Management coordinator in every asset service area / business unit. (eg. Does this position exist within the business?)</p>	<p>0 1 2 3 [4]</p>	<p>0 = None, 1 = Under development, 2 = Documented in some business areas, 3 = Documented & covering whole business, 4 = Documented & fully implemented across whole business</p>
<p>5.01.06 The corporate vision reflects a commitment to best practice in Asset Management. (eg. Does the organization display a documented vision for Asset Management on the wall?)</p>	<p>0 [1] 2 3 4</p>	<p>0 = None, 1 = Under development, 2 = Documented in some business areas, 3 = Documented & covering whole business, 4 = Documented & fully implemented across whole business</p>
<p>6 People Issues - 6.01 People Issues</p>		
<p>6.01.01 Working knowledge of the profile of the organizations staff skills and ages. (eg. Has a skill and age matrix been developed?)</p>	<p>0 1 [2] 3 4</p>	<p>0 = None, 1 = Under development, 2 = Documented in some business areas, 3 = Documented & covering whole business, 4 = Documented & fully implemented across whole business</p>
<p>6.01.02 Good attitude and culture. (eg. Does the organization have a 'can do' attitude? Is the staff culture and attitude/enthusiasm treated as critical by the organization)</p>	<p>0 1 2 [3] 4</p>	<p>0 = None, 1 = Under development, 2 = Documented in some business areas, 3 = Documented & covering whole business, 4 = Documented & fully implemented across whole business</p>
<p>6.01.03 Processes to manage and implement change through the business. (eg. How does the organization respond to change? What mechanisms have been put in place to assist the change process and make it part of the culture?)</p>	<p>0 1 2 [3] 4 5</p>	<p>0 = Little or no knowledge, 1 = Little knowledge & ad hoc processes, 2 = Good knowledge & ad hoc processes, 3 = Consistent processes & partially documented, 4 = Extensive knowledge & partially documented, 5 = Fully documented & externally audited</p>



6.01.04 Processes for reviewing whether the appropriate skills and staff numbers are available. (eg. Can the required skills be accessed in both Asset Management and project work? Do you have a process to justify staffing levels from best appropriate Asset Management practices?)	0 1 [2] 3 4 5	0 = Little or no knowledge, 1 = Little knowledge & ad hoc processes, 2 = Good knowledge & ad hoc processes, 3 = Consistent processes & partially documented, 4 = Extensive knowledge & partially documented, 5 = Fully documented & externally audited
6.01.05 Processes for managing human resources across the business. (eg. Staffing skills and numbers are known and predictions are made of future needs? New staff are inducted and trained in Asset Management to suit needs? Succession planning is catered for?)	0 [1] 2 3 4 5	0 = Little or no knowledge, 1 = Little knowledge & ad hoc processes, 2 = Good knowledge & ad hoc processes, 3 = Consistent processes & partially documented, 4 = Extensive knowledge & partially documented, 5 = Fully documented & externally audited
6.01.06 Processes for the development and implementation of training programs. (eg. Are regular training sessions held? Have skill deficiencies been identified? Is training matched to the business needs?)	0 1 2 3 [4] 5	0 = Little or no knowledge, 1 = Little knowledge & ad hoc processes, 2 = Good knowledge & ad hoc processes, 3 = Consistent processes & partially documented, 4 = Extensive knowledge & partially documented, 5 = Fully documented & externally audited
6.01.07 Processes for the management of knowledge throughout the business. (eg. How does the business update and manage critical business and sector knowledge? How is this disseminated to staff?)	0 1 [2] 3 4 5	0 = Little or no knowledge, 1 = Little knowledge & ad hoc processes, 2 = Good knowledge & ad hoc processes, 3 = Consistent processes & partially documented, 4 = Extensive knowledge & partially documented, 5 = Fully documented & externally audited

7 Asset Management Plans - 7.01 Asset Management Plans

7.01.00 Asset Management Plans (AMP's) exist for each service provided. (eg. Separate plan for roads, potable water, wastewater, drainage, parks and gardens, buildings and facilities etc.)	[0] 1 2 3 4	0 = None, 1 = Under development, 2 = Documented for some assets/asset types, 3 = Documented for all assets/asset types, 4 = Documented & fully implemented (used) for all assets/asset types
7.01.01 AMP's include a record of current standards and level of service. (eg. Are these documented?)	0 [1] 2 3 4	0 = None, 1 = Under development, 2 = Documented for some assets/asset types, 3 = Documented for all assets/asset types, 4 = Documented & fully implemented (used) for all assets/asset types
7.01.02 AMP's include knowledge of the assets. (eg. Can the reader quickly understand the extent of the assets including age, condition, performance, value, cost and location? The whole asset portfolio should be included.)	0 [1] 2 3 4	0 = None, 1 = Under development, 2 = Documented for some assets/asset types, 3 = Documented for all assets/asset types, 4 = Documented & fully implemented (used) for all assets/asset types



<p>7.01.03 AMP's include projected (future) demands and levels of service. (eg. Does the organization have a vision of the future demands including growth / decline and levels of service? Are the key impacts identified?)</p>	<p>0 [1] 2 3 4</p>	<p>0 = None, 1 = Under development, 2 = Documented for some assets/asset types, 3 = Documented for all assets/asset types, 4 = Documented & fully implemented (used) for all assets/asset types</p>
<p>7.01.04 AMP's include predictions of failure modes. (eg. Are all failure modes identified including growth, renewal (reliability and mortality structural integrity) , failing levels of service, and business efficiency? Could the organization save money if it invested in new technology.)</p>	<p>[0] 1 2 3 4</p>	<p>0 = None, 1 = Under development, 2 = Documented for some assets/asset types, 3 = Documented for all assets/asset types, 4 = Documented & fully implemented (used) for all assets/asset types</p>
<p>7.01.05 AMP's include the consequences of failure if the assets are not maintained and renewed. (eg. Are consequences of not maintaining or renewing assets adequately quantified and summarized?)</p>	<p>[0] 1 2 3 4</p>	<p>0 = None, 1 = Under development, 2 = Documented for some assets/asset types, 3 = Documented for all assets/asset types, 4 = Documented & fully implemented (used) for all assets/asset types</p>
<p>7.01.06 AMP's include optimal renewal strategies to extend the life of individual assets, facilities and systems. (eg. Are renewal strategies identified and future funding requirements predicted?)</p>	<p>[0] 1 2 3 4</p>	<p>0 = None, 1 = Under development, 2 = Documented for some assets/asset types, 3 = Documented for all assets/asset types, 4 = Documented & fully implemented (used) for all assets/asset types</p>
<p>7.01.07 AMP's include the capital works necessary to service new works or customers. (eg. What new works will be undertaken, when and how much will they cost? Has the program been validated?)</p>	<p>0 1 [2] 3 4</p>	<p>0 = None, 1 = Under development, 2 = Documented for some assets/asset types, 3 = Documented for all assets/asset types, 4 = Documented & fully implemented (used) for all assets/asset types</p>
<p>7.01.08 AMP's include operations and maintenance programs. (eg. Are the operational and maintenance strategies, and predicted costs rolled into this plan?)</p>	<p>0 1 2 [3] 4</p>	<p>0 = None, 1 = Under development, 2 = Documented for some assets/asset types, 3 = Documented for all assets/asset types, 4 = Documented & fully implemented (used) for all assets/asset types</p>
<p>7.01.09 AMP's should include the most cost effective option for asset improvements. (eg. Have all asset options been considered, including non-asset solutions and the 'do nothing' option?)</p>	<p>0 [1] 2 3 4</p>	<p>0 = None, 1 = Under development, 2 = Documented for some assets/asset types, 3 = Documented for all assets/asset types, 4 = Documented & fully implemented (used) for all assets/asset types</p>



<p>7.01.10 AMP's should include reference to customer or stakeholders for consultation clearly showing them the future sustainable cost and levels of service over a period of at least 30 years. (eg. Are customer / stakeholders consulted with this information and is their feedback taken into account?)</p>	<p>[0] 1 2 3 4</p>	<p>0 = None, 1 = Under development, 2 = Documented for some assets/asset types, 3 = Documented for all assets/asset types, 4 = Documented & fully implemented (used) for all assets/asset types</p>
<p>7.01.11 AMP's include links to the businesses goals which should be related to customer and stakeholder expectations. (eg. How does the plan demonstrate that it is meeting these business goals and customer expectations?)</p>	<p>[0] 1 2 3 4</p>	<p>0 = None, 1 = Under development, 2 = Documented for some assets/asset types, 3 = Documented for all assets/asset types, 4 = Documented & fully implemented (used) for all assets/asset types</p>



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