Water Services
Infrastructure Asset Management
for Municipal Managers & Management

Making it Happen
Municipal Indaba: September 2008
AUTHORS / ACKNOWLEDGEMENTS

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Input from Water Services IAM strategy & oversight committee

Contributions from sector partners / municipalities
South Africa is experiencing serious challenges with regards to access to sustainable basic services, facilitating economic growth and development, ensuring and maintaining service quality such as drinking water quality and wastewater management, as well as water use efficiency. All of these relate to ineffective infrastructure management (existing infrastructure), poor planning for new infrastructure, and very importantly, poor infrastructure asset management (life cycle management).

Key interventions include inter alia the establishment of infrastructure asset management as a dedicated practice in local government, with strong sector leadership, drive and regulation, municipal commitment and ownership, financial support and incentives, proper planning, appropriate institutional arrangements, skills development, as well as suitable support systems and tools.

1.2 OBJECTIVES OF SESSION:

- To establish ownership, commitment and drive to make IAM happen
- To identify key challenges faced by municipalities
- To develop a dedicated implementation action plan
- To establish an inter-sectoral task team to drive and oversee the action plan
- To quantify resource requirements and define success factors

1.3 PURPOSE OF BOOKLET

- to present essentials of infrastructure asset management (“in a nutshell)
- to serve as a workbook
- to serve as performance checklist
- to guide the development of an action plan
- to provide tips & guidelines
- to present some rules of the game
1.4 SYNOPSIS OF THE WATER SERVICES BUSINESS

Our Goal – “Sustainable Water Services Provisioning”

Sustainable water services requires more than just infrastructure. It includes various physical as well as human, institutional and financial elements. The following diagram depicts the key elements to ensure sustainable service delivery:

Infrastructure asset management (IAM) combines management, financial, engineering, economics and social practices and techniques within a coherent management framework, asset management plan and processes.

In total, the water services sector in South Africa is responsible for infrastructure assets with a replacement value of more than R250 billion.

During the next decade a lot more infrastructure will be provided, yet many water services authorities (WSAs) do very little infrastructure asset management (IAM) and do not budget sufficiently for it. Does this make business sense?

Government has to intervene by providing remedial work and implementing processes to prevent any further escalation of the problem. New legislation demands that all municipalities and service providers must practice proper IAM to achieve sustainable service delivery. DWAF as the sector leader must facilitate this through the development and implementation of suited policy, strategies and actions.
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**Infrastructure impacts on the quality of living, environment and economic health.**

Effective management of infrastructure is central to public sector institutions that seek to provide an acceptable standard of services to its customers and who want to support economic growth and development for a prosperous future.

Not only is there a requirement to be effective, but the manner in which the institutions discharge their responsibilities as public entities is also important. They must demonstrate good governance and consumer care, and the processes adopted must be efficient and sustainable.

Municipalities are the custodians of water services infrastructure assets on behalf of the public. They are supported by water services providers and other sector role players in delivering on their constitutional role and responsibility.

DWAF, as the sector leader must assist municipalities and the sector in achieving good infrastructure asset management. To fulfill this role, DWAF has established a dedicated function and capacity to facilitate the implementation of proper infrastructure asset management in the sector. The first step was a situation assessment of infrastructure asset management in South Africa and a related problem analysis to develop a strategic framework for the department. This was followed by the formulation of a Infrastructure Asset Management Strategy that will guide the turn-around of the situation.

The objectives of this Strategy are to:

- Empower and guide DWAF and sector partners, notably municipalities, to practice sound IAM
- Create a platform for coordination of sector programmes and effect associated sector partnerships and support programmes
- Address immediate water services infrastructure failures in WSIs in the short term, and effect improvements that can be publicised in order to demonstrate the benefits of IAM.
- Initiate the process of continuous improvement in the management of IAM
- To achieve the targeted outcomes of ensuring optimal utilization of public investments in water services infrastructure, and to ensure reliable and sustainable meeting of service delivery obligations
2.1 PROVINCIAL PERSPECTIVES

Presentations will be given by selected provinces highlighting specific challenges and actions taken to make infrastructure asset management a success.

*Capture tips and issues in the tables below:*

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## 2.2 DWAF PROGRAMME + STRATEGY

A presentation will be given by DWAF on the Infrastructure Asset Management Strategy for the Water Services Sector, including the specific roles of municipalities as the water service authorities.

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2.3 NATIONAL TREASURY DIRECTIVES

A presentation will be given by National Treasury on the financial directives to enable Infrastructure Asset Management by municipalities.

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2.4 SECTOR INITIATIVES

A presentation will be given by a support organization to highlight the services that can be provided by sector partners such as IMESA, WISA, SAICE, DBSA, WRC and others.

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2.5 MUNICIPAL ACTIONS & EXPERIENCE

A presentation will be given by a municipality to share on the ground challenges of Infrastructure Asset Management within a municipality.

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3. WHAT'S IN A NAME?

The common definition of an ASSET is:

A person or thing possessing valuable qualities that is useful and contributes to the success of a specific purpose.

The common definition of ASSET MANAGEMENT is:

The management of assets to ensure valuable qualities are maintained, extended and used for successful outcome.

The international definition of INFRASTRUCTURE ASSET MANAGEMENT (IAM) is:

Infrastructure asset management (IAM) is an integrated process of decision-making, planning and control over the acquisition, use, safeguarding and disposal of assets to maximise their service delivery potential and benefits, and to minimise their related risks and costs over their entire life.

This definition indicates that IAM:

(a) Takes an organisation-wide perspective and draws upon applicable principles and techniques in the management, engineering, accounting and social sciences (including human resources).

(b) Has an outcomes focus (i.e. a focus on outcomes such as maximisation of service delivery potential, protection of the ability of the infrastructure network(s) to deliver services, cost effectiveness and efficiency).

(c) Confers a custodianship role on the managers of infrastructure and their political leaders – i.e. that they are the “custodians”, responsible for the lifelong sustainable operation of the infrastructure, and for service delivery not only to the current users of the infrastructure, but to future users as well.

(d) Must take into account both consumer expectations (including levels of service, and cost of the service) and the legislative environment (e.g. financial and environmental legislation, including any regulatory regime (e.g. regulation of drinking water quality)).

Providing effective service delivery requires a combination of management, financial, engineering, economics and social practices and techniques within a robust framework and management plan.

The value chain, in the case of IAM, is not only the sequence between project identification and commissioning of the infrastructure, but rather the much longer sequence, from the formulation by the owner of the infrastructure of its infrastructure policy, through identification of the elements of the service delivery programme, project design, etc, and then commissioning, and on through the lifetime operation and maintenance (O&M) of the infrastructure.
4. ITS ALL ABOUT PURPOSE & OUTCOME

4.1 DEFINE THE PURPOSE AND OUTCOME

The critical component of IAM is to clearly define, specify and own the targeted outcome. The ultimate objective is to ensure prosperity and quality of life.

Quality of life is foremost associated with people having access to safe drinking water and water for cooking and cleaning. This is further measured by household income and economic status.

The first step is to identify the relevant outcomes and obligations and to understand what it takes to deliver these. The following diagram illustrates the 5 core outcome areas and purposes of water services.

The Constitution mandates municipalities and gives them the responsibility to provide all people in South Africa with effective, affordable and safe water supply and sanitation services.

The 5 Core Outcome Areas of Water Services

- Social obligation: Water Supply & Sanitation
  - Sustained water supply
  - Drinking water quality
  - Wastewater management
  - Customer service

- Facilitate Economic growth and development
  - Health
  - Natural
  - Economic
  - Socio-economic impact

- Service quality
  - Scarce resource
  - Equitable use
  - Effective use
  - Protection

- Environmental protection

- Strategic water resource management

Quality of Life!
4.2 PERFORMANCE ON KEY WATER SERVICES OUTCOMES

The current performance of water services delivery is not satisfactory. The following tables summarize some of the national indicators and reporting:

**DWAF Functional Assessment**

- WWW are failing
  - >30% need immediate intervention
  - ± 3000 additional WWW staff needed
- Ageing infrastructure
  - up to 50% of backlog are replacements
  - no savings and poor borrowing capacity
- Service quality
  - regular interruptions at 57% of municipalities
  - 70% response within 24hrs
- Drinking water quality

**SAICE scorecard**

<table>
<thead>
<tr>
<th>Water</th>
<th>D+ for DWAF infrastructure</th>
<th>C+ for major urban areas</th>
<th>D- for all other areas</th>
</tr>
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<tr>
<td></td>
<td>Well maintained but ageing infrastructure reaching end of useful life, and requires refurbishment or replacement. 43% of dams have safety problems and require urgent refurbishing. Serious concerns about funding.</td>
<td>South Africa is one of few nations where in most urban areas water can be drunk directly from the tap. Major, and ongoing, strides in provision of water and sanitation since 1994. However, erratic compliance with water quality requirements in most municipalities. Water wastage (leakage) is much too high. Shortage of skilled personnel.</td>
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<table>
<thead>
<tr>
<th>Sanitation (including wastewater)</th>
<th>C- for major urban areas</th>
<th>E for all other areas</th>
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<tr>
<td>Serious problems with management of many wastewater (sewage) treatment works. Wastewater leakage and spillage much too high, and frequent problems with on-site sanitation. Inadequate operation and maintenance capacity, and shortage of skilled personnel. Major urban areas grade is pulled down by Cape Town and Sebokeng.</td>
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**Summary of Studies (courtesy i@Consulting / Africon)**

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<th>Asset Knowledge</th>
<th>Strategic Planning Processes</th>
<th>Current IM Practices</th>
<th>Asset Management Planning</th>
<th>Information Systems</th>
<th>Organisational Tactics</th>
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<tr>
<td>Average Practice</td>
<td>24</td>
<td>31</td>
<td>41</td>
<td>14</td>
<td>17</td>
<td>27</td>
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<tr>
<td>Minimum Target</td>
<td>50</td>
<td>50</td>
<td>65</td>
<td>40</td>
<td>45</td>
<td>50</td>
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<tr>
<td>Appropriate Practice</td>
<td>60</td>
<td>60</td>
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<td>60</td>
<td>45</td>
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4.3 IMPLICATIONS OF NON-ACHIEVEMENT OF OBJECTIVES

Not achieving the target outcomes can have serious implications for municipalities. The following diagram illustrates specific impact areas:

#8 Good Reasons to ensure Achievement of Outcomes

Is your municipality suffering from these impacts?
Please rate your selves in the following table

## 4.4 RATE THE TARGET OUTCOMES OF YOUR ORGANISATION

<table>
<thead>
<tr>
<th>Outcome Area</th>
<th>Key Performance Indicator</th>
<th>Rating (0-10)</th>
<th>Challenges to resolve</th>
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<tbody>
<tr>
<td>Social</td>
<td>All households have access to basic water supply and sanitation services</td>
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<td></td>
<td>The dignity of women, children and the elderly is respected</td>
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<td></td>
<td>Waterborne diseases such as diarrhea and cholera are not occurring</td>
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<tr>
<td>Economic</td>
<td>Industries and other economic users are satisfied with the water service</td>
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<td></td>
<td>Water services are able to support local economic growth</td>
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<td>Are water services development costs preventing or limiting economic growth</td>
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<td></td>
<td>Will water services be able to serve 2010</td>
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<td>Service Quality</td>
<td>There is a customer care centre which is helpful and able to resolve service complaints</td>
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<td></td>
<td>How good is the customer satisfaction with water services</td>
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<tr>
<td></td>
<td>Are customers willing and able to pay for the service</td>
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<td>Have you experienced customer dissatisfaction resulting in violent demonstrations and vandalism</td>
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<td>Water Resources</td>
<td>Do you have adequate water resources for current and future demands</td>
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<td></td>
<td>Is your water resource management addressing water loss management</td>
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<tr>
<td>Environment</td>
<td>How Is the status of the natural environment</td>
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<td></td>
<td>Do you manage pollution</td>
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The delivery process comprises 4 key ingredients:

1. Firstly, there must be a target outcome (e.g. domestic & industrial customers with specific service standards, uses and outcomes)

2. Secondly, there must be a water resource that provides the essential commodity (water)

3. Infrastructure delivers the water from water resource to customers and thereafter disposes of the wastewater. This can be existing and/or new infrastructure. To deliver the commodity (water), the following service delivery requirements need to be considered:
   - infrastructure capacity
   - treatment technology
   - infrastructure condition and functionality
   - supporting resource requirements (e.g. electricity, chemicals)

4. Production processes ensure that the water is treated to the required user requirements (drinking water standards) and that wastewater is treated to minimum effluent standards. The
crosses illustrate where the key water quality checks are happening. Such processes need suitably skilled staff, process guidelines, monitoring systems, funding and support.

6. INFRASTRUCTURE LIFE-CYCLE MANAGEMENT

The infrastructure life-cycle comprises 3 distinct phases:

- **Planning** of the full asset life cycle
- **Establishment** of the infrastructure (design, procure and construct)
- **Operation and maintenance** of the infrastructure

The following diagram illustrates the dynamics and costs of the life-cycle phases:

![Life-Cycle Diagram]

The typical costs of each phase as a percentage of the total life-cycle cost is shown below

- **Planning** 0.2%
- **Design** 2%
- **Procure** 17%
- **Construct** 44%
- **Operate**
- **Maintain**
- **Refurb.**
- **ongoing**
- **37% Financing Cost**

Note:

- Planning must include all phases. Many project plans do not consider the challenges and costs after construction, which can have a significant impact on the technical solution and the long-term viability of the infrastructure.

- Infrastructure asset management (IAM) is a non-stop business. At the end of an asset’s life it needs to be replaced. Proper operation and maintenance can optimize the asset life and minimize the overall cost.

- The main financial implication is with operation and maintenance as well as the business financing cost. It is thus appropriate to ensure that these life-cycle phases are optimally designed and managed as an integral part of the full life-cycle.
Municipalities must ensure that all projects are planned for the full life-cycle and that all life-cycle elements and costs are considered.
From “Cradle” to “Grave”

Lifecycle asset management includes all planning, management options and strategies to optimize the life time and service delivery from an infrastructure asset between its conception and its end of life.

The objectives are:

- to manage the reiterative process from planning to decommissioning and replacement of the asset
- to manage lifecycle cost (long-term) rather than short-term savings;
- to ensure consistent delivery of the service that infrastructure was designed for;
- to foster a spirit of custodianship, responsibility and accountability;
- to improve sustainability and to lower the risks of failure.
7. CHARACTERISTICS OF COMPREHENSIVE INTEGRATED ASSET MANAGEMENT

7.1 WATER IS A COMMODITY-BASED BUSINESS – MANAGE IT

In asset management the main focus is on meeting affordable customer expectations in the most cost-effective manner. To this end, the following has to be done:

- Customers must be involved not only on the level of service and on the quality of services provided, but also on the meeting of broader community requirements, such as opportunities for job creation. Once we understand what customers expect of us, we can plan on how to manage our infrastructure to meet service requirements.
- Based on customer requirements, formulate appropriate asset and non-asset solutions.
- Invest in asset capacities that will provide the required service delivery and economic return objectives.
- Invest in institutional capacity to plan, manage and operate the water business.
Infrastructure assets have lives that can often be measured in generations, and creating them takes time.

Any asset goes through a lifecycle that starts with planning, through to procurement or construction, operations and maintenance, renewal and then disposal. It is often tempting to try and save costs through cheap construction methods or cutting back on operations and maintenance costs.

However, as illustrated in the graph on the right, construction cost is only a component of lifecycle cost, and construction savings now can lead to higher lifecycle costs later on.

Lifecycle asset management aims to achieve the following three objectives:

- Ensure that the asset at a minimum achieves its original design or estimated useful life. This is done through proper operations and maintenance. When a poor maintenance regime is followed, the asset may not reach its design life, and financial losses will be incurred.

Extend the life and/or capacity of the asset through selective refurbishments or upgrading, rather than to fully reconstruct the asset at greater cost.

The overall lifecycle costs should be minimized through correct design, trade-offs between different lifecycle cost components and proper timing of lifecycle actions.
The economic principle states that one’s needs will always exceed the ability of one’s resources to satisfy those needs. Budget constraints are a reality of life. In the face of funding constraints it is important to prioritize spending. Spending on current assets should be targeted at meeting the needs of the most critical assets first. Spending on new assets should be prioritized in such a way that the organization achieves the most benefit for the cost that it will incur.

7.3 IAM IS AN INTEGRATOR

Infrastructure asset management (IAM) is an integrated process of decision-making, planning and control over the acquisition, use, safeguarding and disposal of assets to maximise their service delivery potential and benefits in response to community needs, and to minimise their related risks and costs over their entire life.

As illustrated above, IAM is the integrator of the various business elements in the service delivery process. This involves 3 levels of engagement, the strategic, tactical and operational levels.
7.4 KEY DRIVING FORCES AFFECTING IAM

- Rapid expansion of infrastructure since 1994
- Ageing infrastructure resulting in a growing replacement need
- Huge maintenance backlogs on infrastructure
- Municipalities have lost valuable resources and skills during the transformation process
- Lack of infrastructure information hampers informed asset management decision-making
- Lack of funding for IAM is resulting in neglect of infrastructure
- Inappropriate design, service levels and solutions
- Affordability of services provided

7.5 KEY CHARACTERISTICS OF IAM

- It supports the value chain from raw water to social and economic development
- It utilizes basic business principles
- It is a non-stop / ongoing process (life-cycle)
- It enforces roles & responsibility with accountability
- It considers current and future requirements
- It is essential for sustaining human life
- It is an integrator of different functions and disciplines within a municipality
- It requires integrated comprehensive planning
- It is a key governance function
7.6 THE PROCESS TO ESTABLISH IAM

The following diagram illustrates the process to be followed to establish proper IAM:

The process to establish IAM is briefly explained in the following bullets (numbers relate to the previous diagram):

1. First of all, we have to set the target outcomes for IAM and agree these with all role players. The outcomes inform the required service levels, which have to be formalized through service level agreements. Outcomes may also be determined by statutory and other obligations.

2. The targeted outcomes are then compared to the current situation, and where appropriate also to the future situation, to identify GAPs and potential problems of not achieving the target outcomes.

3. Non-achievement of targeted outcomes, will have various impacts ranging from physical impacts such as service interruptions, social impacts such as water-borne diseases and customer health, financial impacts to the municipality and customers, economic impacts locally and abroad, as well as environmental and water resource impacts.
4. To prevent such impacts from occurring, we have to find suitable interventions for the existing and potential problems. These become the targeted SOLUTIONS to be achieved through specific actions.

5. Such IAM actions must be resourced and implemented. Resources may include money, people, equipment, knowledge systems and other support.

6. The successes of the interventions are then monitored and evaluated to measure impact on the achievement of the target outcomes. These are essentially performance assessments for each of the intervention areas.
Does your infrastructure look like this?
8.1 HOW TO SCORE YOUR IAM PERFORMANCE

There are five categories:

- institutional arrangements
- planning
- resources
- systems
- compliance / impact

Each of these categories have five performance areas (see table)

Please score each of the performance areas in the block underneath using the following points weighting:

1 – poor / not existing
2 – fair
3 – good
4 - excellent

Add the individual scores horizontally to get a sub-total per category

Add sub-totals vertically to get the total score out of 100.
# 8.2 5X5 IAM PERFORMANCE SCORE CARD

## Institutional Arrangements

<table>
<thead>
<tr>
<th>Score</th>
<th>Ownership &amp; commitment</th>
<th>Service Provider Arrangements</th>
<th>Accountability (roles &amp; responsibility)</th>
<th>Monitoring &amp; Evaluation</th>
<th>Recognition &amp; Rewards</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

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## Planning

<table>
<thead>
<tr>
<th>Score</th>
<th>IAM policy</th>
<th>IAM plan / WSDP</th>
<th>O&amp;M plans</th>
<th>Budget plan (CAPEX &amp; OPEX)</th>
<th>Water Demand Management</th>
</tr>
</thead>
<tbody>
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<td></td>
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</table>

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## Resources

<table>
<thead>
<tr>
<th>Score</th>
<th>Infrastructure</th>
<th>Knowledge</th>
<th>Human Resources</th>
<th>Financial resources</th>
<th>Water Resources</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</table>

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## Systems

<table>
<thead>
<tr>
<th>Score</th>
<th>Asset register</th>
<th>Operating systems</th>
<th>Condition &amp; performance monitoring</th>
<th>Monitoring evaluation &amp; reporting system</th>
<th>Customer service &amp; cost recovery</th>
</tr>
</thead>
<tbody>
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<td></td>
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</table>

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## Compliance & Impact

<table>
<thead>
<tr>
<th>Score</th>
<th>Quantity, flow and pressure of supply</th>
<th>Drinking water quality &amp; health</th>
<th>Reliable &amp; assured supply</th>
<th>Affordable services</th>
<th>Good customer service</th>
</tr>
</thead>
<tbody>
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</tbody>
</table>

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Total Score out of 100
8.3 CRITICAL IAM SUCCESS FACTORS FOR WATER SERVICES

1. National leadership & regulation

DWAF as the sector leader has to guide the improvement process and intervene where necessary to ensure sustainable service delivery. This includes macro planning, policy development, guidance, monitoring, evaluation and regulation.

2. Awareness & appreciation of the IAM challenges

Recent failures of key water services infrastructure have raised awareness and concern amongst the general public, municipal officials and national sector departments. More needs to be done to promote the benefits of IAM.

3. Mind shift & culture change

The sector cannot continue with its business “as-usual”! A drastic change of culture is required towards “caring” and looking after the services infrastructure. It requires a mind-shift from all stakeholders including, politicians, managers, operators and the communities / customers.

4. Knowledge creation

A water sector specific infrastructure asset management guideline, incorporating best practices is required – DWAF is in the process of scoping such a guideline.

5. Benchmarking

Scientific IAM relies on indices for lifecycle unit cost rates for the valuation of infrastructure, and for budgeting and planning purposes. Other benchmarks include expected useful lives of different asset types, and the state of IAM practices for different categories of municipalities and water services institutions.

6. Skills development & capacity building

Recent surveys indicate that the water services sector lacks the skills to undertake proper IAM. It is therefore critically and necessary to build adequate IAM capacity through training and support mechanisms.

7. Adequate funding for IAM

Dedicated / ring-fenced funding for IAM is crucial for success. This involves improved budgeting, financial management and cost-efficiency.

8. Competent Local Governance

The key to sustaining and growing WS delivery is to greatly improve the management of WS institution’s infrastructure. A plan of action, embracing awareness, a funding formula, a legislative review, performance management, improved incentives to the owners of the infrastructure to responsibly manage it, and a skills plan, among other measures, needs to be put in place.
Infrastructure and related water service delivery are failing in many municipalities. It is therefore obvious that Infrastructure Asset Management must be improved immediately to mitigate current failures and prevent further deterioration of infrastructure and related future failures.

Government has therefore prioritized IAM as a critical outcome for sustainable municipal services. It is furthermore essential for South Africa to host international events such as Soccer World Cup 2010, international conferences and reviews. These are well known, visible and communicated “outcome obligations” compelling municipalities to improve their IAM.

There are also the legal and statutory obligations which municipalities have to comply. Then there are common sense reasons why Infrastructure Asset Management must be practiced.

The following diagram summarizes the 10 foremost Obligations to practice sound IAM.

Some of the statutory obligations are briefly described below:

- **Legislative compliance**
  
  In terms of both the Public Finance Management Act and the Municipal Finance Management Act, the Accounting Officer is responsible for managing the assets and liabilities of the
municipality, including the safeguarding and maintenance of its assets. The Accounting Officer must ensure that:

- The organization has and maintains a management, accounting and information system that accounts for its assets and liabilities
- Assets are valued in accordance with standards of generally recognized accounting practice
- The organization has and maintains a system of internal control of assets and liabilities.

- **The Occupational Health and Safety Act** requires an organization to provide and maintain a safe and healthy working environment, and in particular, to keep its infrastructure assets safe.
- **The Municipal Systems Act** requires a municipality to consider the most appropriate service delivery vehicle. Good infrastructure asset management practices assist an organization to meet all of these requirements.

The other most key reasons are:

2. **Improved service delivery.** Good infrastructure asset management assists in achieving service delivery objectives in a cost-effective manner.

3. **Prevention of financial losses.** Much can be done to minimize unnecessary expenditure using infrastructure asset management practices. Examples include extended useful lives of assets and the delay in reconstruction costs, the curbing of water losses, and the prevention of costly accidents due to asset failure.

4. **Socio-economic development.** Well-serviced water infrastructure provides the basis for good public health, and is a necessary condition for local economic development.

5. **Avoidance of public embarrassments and loss of the community’s faith.** Good infrastructure asset management practices minimizes the possibility of spectacular and embarrassing infrastructure failures, and ensures that plans are in place to mitigate the impacts on service delivery should an asset fail.
The following diagram summarizes the “Making-it-Happen” action plan. It comprises 5 critical steps:

1. Establish ownership, commitment and drive
   - comprehension
   - the will to make it happen
   - drive, inspire and motivate
   - plan
   - governance
   - lead
   - organize
   - control

2. Setting up the asset management business
   - establish a dedicated programme for IAM
   - establish asset knowledge
     - know your infrastructure
     - know your client
     - know your resources
     - know your future
   - MFMA requirements
   - establish IAM system
   - establish Asset Register
   - prepare Asset Management Plan
   - maintain & safeguard assets

3. Implement the enabling framework
   - competent staff
   - suitable processes and procedures
   - adequate funding

4. Driving the programme and ensuring outcome
   - dedicated manager & coordinator for IAM
   - regular integrated management involving tech, financial and HR management
   - strategic outcomes
   - compliance outcomes
   - performance outcomes

5. Support requirements
   - M&E
   - funding
   - PSPs

Please use the following table to record your organization’s “make-it-happen” action plan.
## “MAKE-IT-HAPPEN” ACTION PLAN

<table>
<thead>
<tr>
<th>Performance Area</th>
<th>Actions</th>
<th>Y/N</th>
<th>ACTION</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Establish ownership &amp; commitment</strong></td>
<td></td>
<td></td>
<td>Immediate</td>
</tr>
<tr>
<td>1</td>
<td>Ensure that Mayor and Council understand the challenges &amp; success requirements of IAM</td>
<td></td>
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<tr>
<td></td>
<td>Include IAM in political speeches and municipal statements</td>
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<tr>
<td></td>
<td>Establish a dedicated IAM responsibility in Council (IAM portfolio)</td>
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<tr>
<td></td>
<td>Ensure IAM is a standard item on Council agenda</td>
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<tr>
<td></td>
<td>Ensure that municipal budget reflects importance of IAM</td>
<td></td>
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</tr>
<tr>
<td><strong>Setting up the IAM business</strong></td>
<td>Establish a dedicated programme for IAM, with leader (IAM champion) and institutional framework (posts, responsibilities &amp; mandates)</td>
<td></td>
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<tr>
<td>2</td>
<td>Develop a service delivery plan with:</td>
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<tr>
<td></td>
<td>• Customer service plan (service level agreement)</td>
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<tr>
<td></td>
<td>• Water resource management plan</td>
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<td></td>
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<tr>
<td></td>
<td>• Infrastructure management plan (O&amp;M plans)</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>• HR plans (skills development &amp; performance)</td>
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<tr>
<td></td>
<td>• Financing and financial management plans</td>
<td></td>
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<tr>
<td></td>
<td>• Environmental management plan</td>
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<tr>
<td></td>
<td>• Risk management &amp; recovery plans</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>• Comprehensive infrastructure life-cycle plan</td>
<td></td>
<td></td>
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<tr>
<td><strong>Resource the IAM business</strong></td>
<td>Implement institutional arrangements &amp; give mandates to roles &amp; responsibilities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>• Appoint appropriate, capacity staff</td>
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<tr>
<td></td>
<td>Secure budgets for the IAM business</td>
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<tr>
<td></td>
<td>Secure water availability (water licenses)</td>
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<tr>
<td></td>
<td>Establish asset knowledge, including:</td>
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<tr>
<td></td>
<td>• Establish a comprehensive Asset Register</td>
<td></td>
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</tr>
<tr>
<td></td>
<td>• Implement a IAM information system</td>
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<tr>
<td></td>
<td>• Get relevant guidelines &amp; support tools</td>
<td></td>
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<tr>
<td>Performance Area</td>
<td>Actions</td>
<td>Y/N</td>
<td>ACTION</td>
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</tr>
<tr>
<td></td>
<td>Up to date processes &amp; procedures to do work</td>
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</tr>
</tbody>
</table>
| 4 Implement the enabling framework | Manage infrastructure functionality /outcome:  
  - Operations performance management  
  - Maintenance performance management  
  - Refurbishment /replacement programmes |   |        |
|                  | Manage the water resources, water quality, water losses and water demands to maintain effective service delivery to all customers |   |        |
|                  | Maintain the asset register & IAM plans:  
  - Add new acquisitions  
  - Remove asset replacements  
  - Regular condition & functionality assessments  
  - Review asset criticality  
  - Manage asset utilization & performance  
  - Re-value assets |   |        |
|                  | Financial management tasks, including:  
  - Appropriate budget allocation & management  
  - CAPEX / OPEX implementation management  
  - Billings, cost-recovery and affordability |   |        |
|                  | Institutional management tasks, including:  
  - Staff performance management  
  - Service provider contract management  
  - Recognition & reward for good IAM work |   |        |
| 5 Drive the programme | Governance activities, including:  
  - Maintain suitable policy and strategy for IAM  
  - Monitor the achievement of outcomes and instruct corrective action where needed  
  - Monitor policy and legal compliance and instruct corrective action where needed |   |        |
|                  | Dedicated IAM management with:  
  - Regular integrated management meetings |   |        |
<table>
<thead>
<tr>
<th>Performance Area</th>
<th>Actions</th>
<th>Y/N</th>
<th>ACTION</th>
</tr>
</thead>
</table>
|                  | between technical, financial and HR managers  
|                  | • Ongoing performance management & reporting and controls                                                                                                                                               |     |              |
|                  | Manage the overall infrastructure life-cycle plan to ensure that short, medium and long-term objectives are achieved                                                                                       |     |              |
|                  | Hands-on risk management, including intervention action and recovery plans                                                                                                                              |     |              |
|                  | Strategic assessments and decision-making, incl:  
|                  | • systems optimization  
|                  | • financial return on assets  
|                  | • technology review  
|                  | • performance benchmarking  
|                  | • etc                                                                                                                                                                                                   |     |              |
| 6 Support        | Dedicated programme to operate the IAM information management system so that all role players have up to date information for management decision-making                                                     |     |              |
| requirements      | Up to date monitoring of key performance indicators and effective reporting to decision-makers                                                                                                           |     |              |
|                  | Maintain a high standard for customer service and help desk so as to ensure that service interruptions are resolved as speedily as possible                                                               |     |              |
|                  | Regular reporting and information sharing                                                                                                                                                              |     |              |
|                  | Financial Resources                                                                                                                                                                                    |     |              |
|                  | Institutional Capacity                                                                                                                                                                                 |     |              |
IAM can be summarized as follows:

**What is IAM?**
- **IAM = Infrastructure Asset Management**
- managing the life-cycle of infrastructure
- resourcing the system (staff & money)
- manage multi-disciplinary teams
- integrated planning & control - for delivery
- guide service level & demand management
- monitoring condition and performance
- ongoing care and maintenance
- enabling quality service delivery
- looking after your investment
- continuous improvement process

**Why do it?**
- customers demand it
- it makes business sense
- it saves costs & improves financial results
- it is a legal requirement
- it is good practice
- for future generations (long-term view)

**Key benefits**
- limited service interruptions
- satisfied & paying customers
- optimized return on investment
- minimized environmental impact
- improved financial efficiency
- better operating conditions
- improved risk management
- improved decision-making

**Making it happen**
- become a champion
- establish and build a capable management team
- adopt an integrated management approach
- know your assets and develop asset management plans (AMP with asset register & knowledge system) to guide informed decision-making
- monitor condition and performance
- be in control & reward good practice (incentives)
- set goals, measure outcome and audit the plans
YOUR IAM CONSCIENCE

To remind you of the importance of Infrastructure Asset Management, DWAF is issuing you with a toolkit comprising:

- Handy-tools with inscription of IAM performance areas – whenever you use the tools, be reminded that IAM also requires hands-on dedicated action

- IAM guideline documentation including
  - DWAF Water Services IAM Strategy
  - Asset Management Booklet – for Councilors

*Let’s make IAM happen !!*