

WATER SERVICES SECTOR LEADERSHIP GROUP MEETING

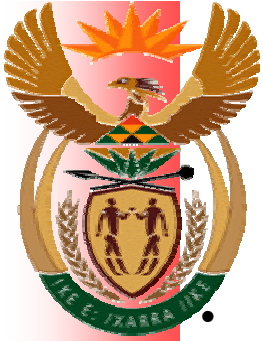
“MOVING TOWARDS LIFECYCLE
MANAGEMENT OF WATER
INFRASTRUCTURE” - THE
NATIONAL TREASURY PERSPECTIVE

19 - 20 JUNE 2007



Presentation Structure

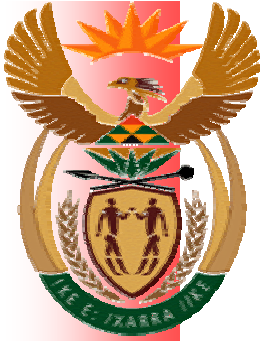
1. What is Infrastructure Asset Management?
2. How is Infrastructure Asset Management Undertaken?
3. Why is Infrastructure Asset Management important?
4. Legislative and Policy context for the SA Water Sector
5. Infrastructure Maintenance, Refurbishment and Upgrades
6. Water cost and pricing chain
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8. Current Maintenance and Rehabilitation/Renovation Trends at National Level
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11. Sources of funding available to municipalities
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13. Some key challenges facing the sector
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What is Infrastructure Asset Management (IAM)?

- The goal of asset management is to meet a required level of service, in the most cost-effective manner, through the management of assets for present and future customers (value proposition).
- The key elements of IAM include:
 - Adopting an asset lifecycle approach (Lifecycle Asset Management);
 - Developing cost-effective management strategies for the long-term;
 - Providing a defined level of service and monitoring performance;
 - Understanding and meeting the impact of growth through demand management and infrastructure investment;
 - Managing risks associated with asset failures;
 - Sustainable use of physical resources; and
 - Continuous improvement in asset management practices.

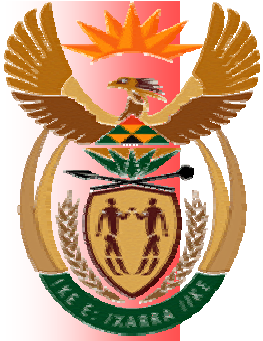
Source: International Infrastructure Management Manual -2006



How is IAM Undertaken?

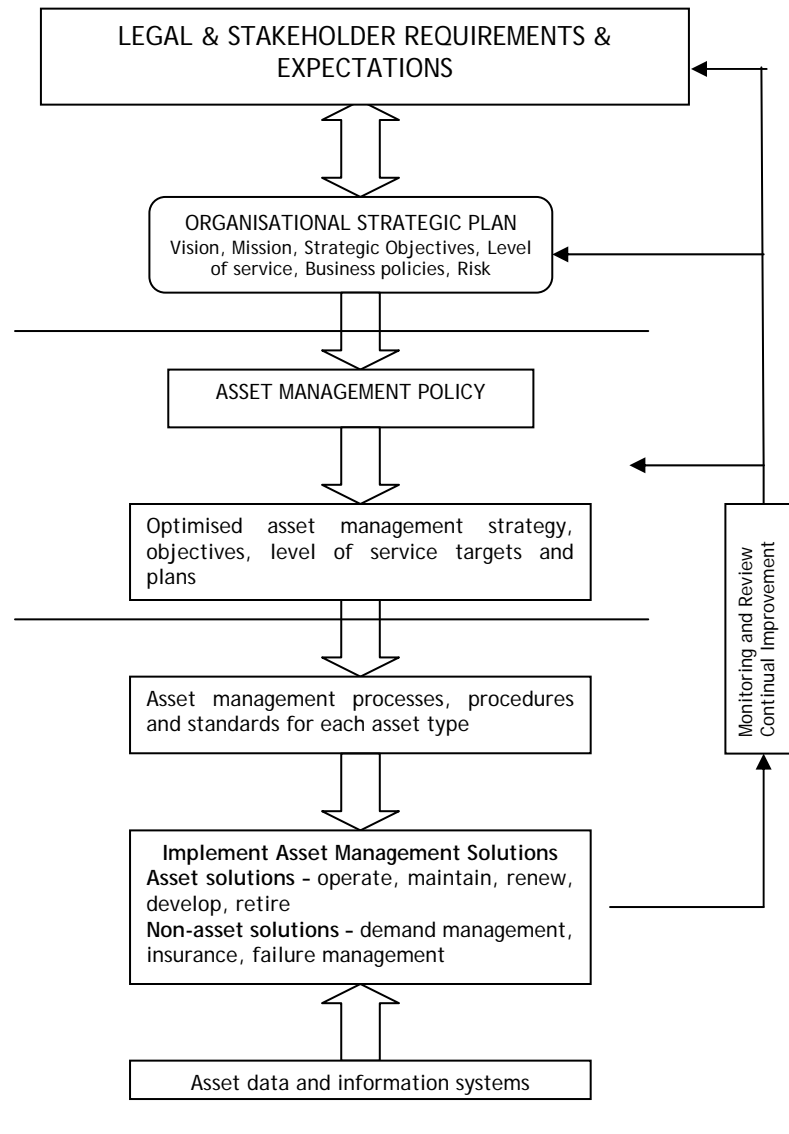
Example of a House:

- Adopting Lifecycle approach:
 - Build / buy a house (creation / acquisition of asset)
 - Living in the house (Operations)
 - e.g. paint peeling (Condition assessment)
 - Painting, varnishing, garden, etc. (Recurrent Maintenance)
 - Rewiring of house (age, safety i.e. increase in operational expenditure)
[Renovations (Capital)]
 - Add a room to get a tenant and supplement income; OR Buy a bigger house
[Upgrades (Capital)]
 - Sell house (Disposal)

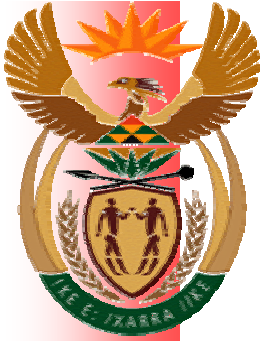


How is IAM Undertaken? cont.

Planning for Asset Management:



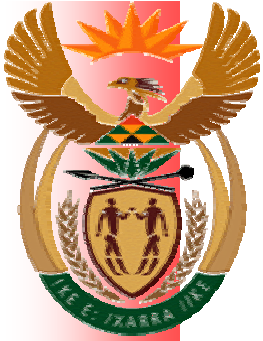
Source:
International
Infrastructure
Management
Manual -2006



Why Infrastructure Asset Management (IAM)?

- Improved governance and accountability
- Enhanced service management and customer satisfaction
- Improved risk management
- Improved financial efficiency
- More sustainable decisions

Source: International Infrastructure Management Manual -2006

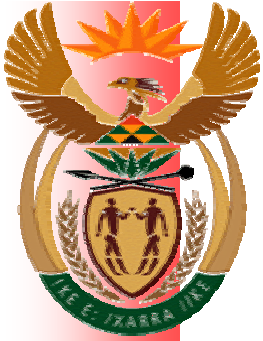


Legislative and Policy Context for the SA Water sector

- The Water Services Act (1997) - s13 (h)(v) & (vii); s34(2)

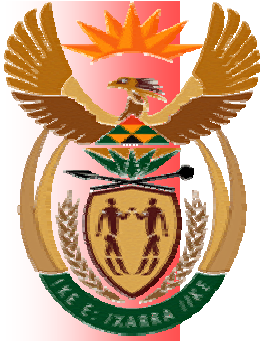
Every draft WSDP must contain details regarding:

- *The estimated capital and operating costs of those water services and the financial arrangements for funding those water services, including tariff structures*
 - *the operation, maintenance, repair and replacement of existing and future infrastructure*
-
- The National Water Act (1998) - Ch. 4; Ch.5 and Ch. 12
 - *The NWA specifies water use subject to licensing requirements and general authorisations for waste discharges*
 - *It also provides for a pricing strategy for water use charges (Water resource management and water resources development)*



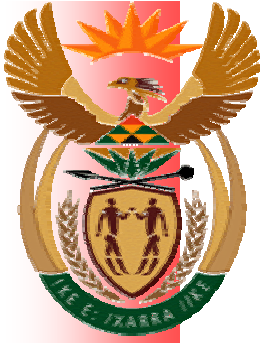
Legislative and Policy Context for the SA Water sector cont.

- The Municipal Systems Act (2000) - s74(2)
 - (2) A tariff policy must reflect at least the following principles, namely that—*
 - (c) poor households must have access to at least basic services through-*
 - (i) tariffs that cover only operating and maintenance costs*
 - (d) tariffs must reflect the costs reasonably associated with rendering the service, including capital, operating, maintenance, administration and replacement costs, and interest charges;*
 - (e) tariffs must be set at levels that facilitate the financial sustainability of the service, taking into account subsidisation from sources other than the service concerned;*



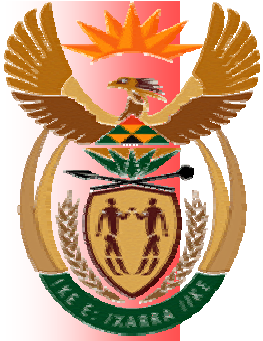
Legislative and Policy Context for the SA Water sector cont.

- Municipal Planning and Performance Management Regulations (2001) s2; s3(b) & (c):
 - *A financial plan reflected in a municipality's IDP must at least indicate the financial resources that are available for capital project developments and operational expenditure*
 - *include a financial strategy that defines sound financial management and expenditure control, as well as ways and means of increasing revenues and external funding for the municipality and its development priorities and objectives, which strategy may address the following:*
 - (i) Revenue raising strategies;*
 - (ii) asset management strategies;*
 - (iii) financial management strategies;*
 - (iv) capital financing strategies;*
 - (v) operational financing strategies; and*
 - (vi) strategies that would enhance cost-effectiveness.*
- The Strategic Framework for Water Services (2003) [4.2 and 4.5]
 - *Responsibility and planning. Water services authorities are responsible for ensuring that adequate investments are made in water services infrastructure and that these investments are sustainable over time. The water services development plan (discussed in section 5.2.1) is an important tool to assist the water services authority to develop a realistic long-term investment plan which prioritises the provision of basic water services, promotes economic development and is affordable and sustainable over time.*



Legislative and Policy Context for the SA Water sector cont.

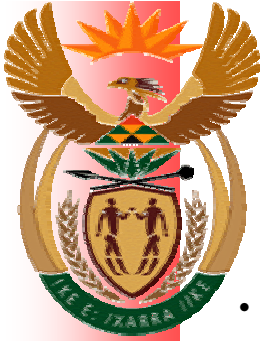
- *Asset management. A water services authority must maintain a register of water services assets and put in place a system to manage these assets in terms of the maintenance and rehabilitation plan.*
- *Maintenance and rehabilitation. It is essential for water services authorities to protect their assets by ensuring that an appropriate maintenance and rehabilitation plan is developed and implemented. This plan must be based on the principle of preventative maintenance in order to ensure that, as far as this is practical, damage to assets is prevented before it occurs. The water services authority must ensure that the maintenance and rehabilitation plan is part of the water services development plan and that this plan is implemented. Assets must be rehabilitated and/or replaced before the end of their economic life and the necessary capital funds must be allocated for this purpose.*
- *See “Water Cost Pricing Chain” and “responsibilities for Tariff Setting” later*
- **The Municipal Finance Management Act (2003) - s19 & s63**
 - *19. (1) A municipality may spend money on a capital project only if—*
 - (a) *the money for the project, excluding the cost of feasibility studies conducted by or on behalf of the municipality, has been appropriated in the capital budget;*
 - (b) *the project, including the total cost, has been approved by the council;*
 - (d) *the sources of funding have been considered, are available and have not been committed for other purposes.*
 - (2) *Before approving a capital project in terms of subsection (1)(b), the council of a municipality must consider—*
 - (a) *the projected cost covering all financial years until the project is operational; and*
 - (b) *the future operational costs and revenue on the project, including municipal tax and tariff implications.*



Legislative and Policy Context for the SA Water sector cont.

63. (1) *The accounting officer of a municipality is responsible for the management of—*

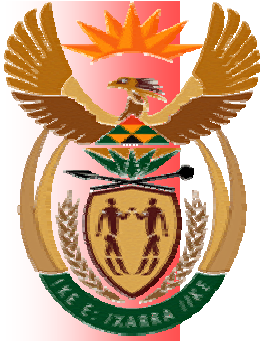
- (a) the assets of the municipality, including the safeguarding and the maintenance of those assets; and*
 - (b) the liabilities of the municipality.*
- (2) The accounting officer must for the purposes of subsection (1) take all reasonable steps to ensure—*
- (a) that the municipality has and maintains a management, accounting and information system that accounts for the assets and liabilities of the municipality;*
 - (b) that the municipality's assets and liabilities are valued in accordance with standards of generally recognised accounting practice; and*
 - (c) that the municipality has and maintains a system of internal control of assets and liabilities, including an asset and liabilities register,*
- (b) the future operational costs and revenue on the project, including municipal tax and tariff implications.*



Infrastructure Maintenance, Refurbishment and Upgrades

- Typical Perspectives
 - Value, Cost
 - Lifespan, function
 - Public View: Service, functional effectiveness

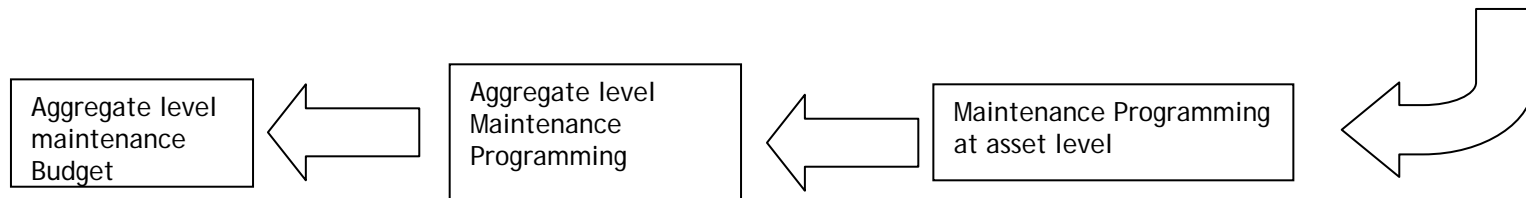
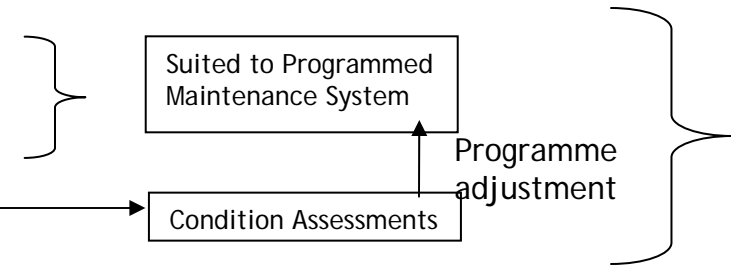
	Maintenance	Refurbishment / Renovation / Rehabilitation	Upgrades
Nature of Expenditure	Recurrent	Capital	Capital
Value, Cost	Maintains value (recurrent cost) Financial / Market value Economic value	Increases value or lowers operational cost	Increases value
Lifespan, function	Maintains design lifespan / function	Increases lifespan or improves function	Expands function
Public View	Maintains level of service	Maintains level of service	New level of service



Infrastructure Maintenance, Refurbishment and Upgrades cont.

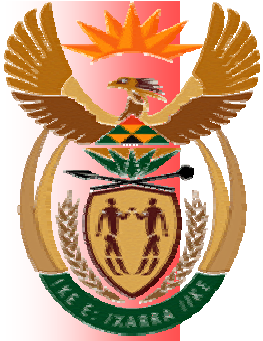
Asset condition typically depends on:

- Utilisation;
- Design robustness, suitability for utilization, historical data and build quality; and
- External environmental factors



Maintenance programming is also dependent on factors such as:

- Type of asset;
- Age of asset;
- Condition of asset;
- Operational difficulty; and
- Personnel feedback.



Water Cost and Pricing Chain

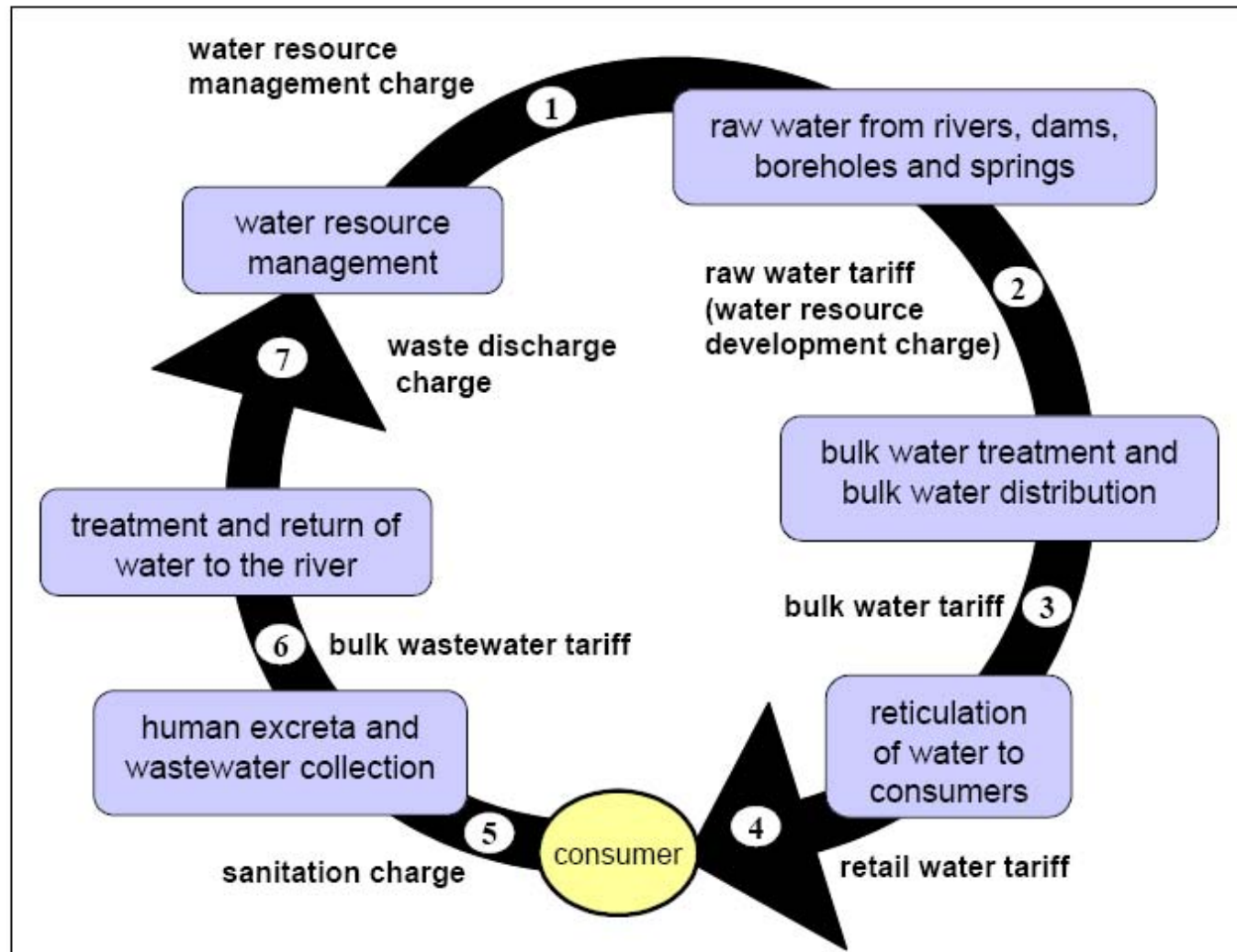
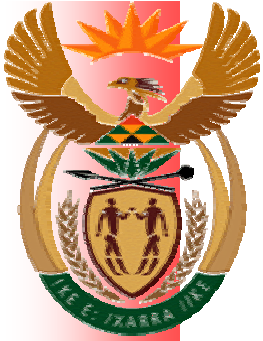


Figure 1: Water cost and pricing chain

Source: Strategic Framework for Water Services (September 2003)

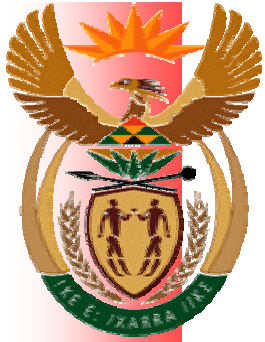


Responsibility for Tariff Setting

Table 1: Responsibilities for tariff setting

Tariff / charge	Responsibility for setting tariff and source of authority	Responsibility for regulating the tariff (and comments)
Water resource management charge. (Recovers the costs of water resources management.) ⁹	Catchment management agency in terms of National Water Act.	DWAF. Where there is no catchment management agency, DWAF also sets the tariff (self-regulation).
Raw water tariff (water resource development charge). (Recovers the infrastructure and operating costs of schemes.)	DWAF in terms of the national raw water pricing strategy and in consultation with water users including local government.	DWAF (subject to National Treasury oversight). (Note: raw water tariffs are also implicitly set by water services authorities and water boards where these organisations manage raw water systems.)

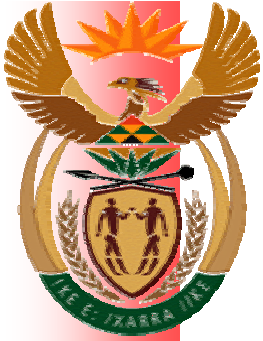
Source: Strategic Framework for Water Services (September 2003)



Responsibility for Tariff Setting cont.

Tariff / charge	Responsibility for setting tariff and source of authority	Responsibility for regulating the tariff (and comments)
<p>Bulk water and wastewater tariffs.</p> <p>(Recovers the cost of conveying and treating bulk water and wastewater.)</p>	<p>Negotiation between water board and water services authority (or its appointed provider) in the case of a water board.</p> <p>Water services authority where it undertakes bulk function itself, or by an entity owned by the water services authority.</p> <p>Consultation between water services authority and external provider of service (for example, another municipality).</p>	<p>DWAF (direct regulation of water boards).</p> <p>Water services authority.</p> <p>DWAF.</p> <p>(These are subject to National Treasury oversight.)</p>
<p>Retail water tariff and sanitation charges.</p> <p>(Includes the bulk water and wastewater tariff and recovers the retail costs.)</p>	<p>Water services authority in terms of the Water Services Act and Municipal Systems Act.</p>	<p>Water services authority (subject to DWAF oversight).</p> <p>DWAF sets national norms and standards for the setting of retail tariffs.</p>
<p>Waste discharge charge (proposed).</p> <p>(A water resource charge based on the "polluter pays" principle.)</p>	<p>Catchment management agency in terms of National Water Act, in consultation with water users including local government.</p> <p>DWAF where there is no CMA.</p>	<p>DWAF (subject to National Treasury oversight).</p>

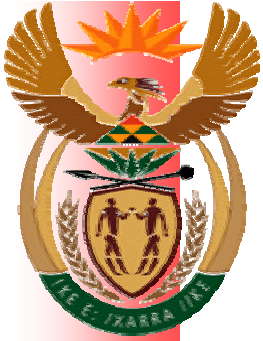
Source: Strategic Framework for Water Services (September 2003)



Sources of Funding Available to Municipalities

- Equitable share (Free Basic services)
- MIG (Provision of access to water services)
- Housing subsidies (infrastructure component)
- Water services operating subsidy grant (related to transfer of DWAF schemes to municipalities - covers O & M, HR and refurbishment)
- Schools and Clinics backlogs eradication
- Bulk infrastructure grant (regional bulk infrastructure)
- Revenue Generated (retail water sales, rates)
- External funding (foreign donor funding, loans)

	2007/08	2008/09	2009/10
R Millions	20 675	23 774	29 444
R Millions	7 548	8 053	9 130
2006/07 quantum R per Household	3 094 water retic. (incl. meter) 3 596 sanitation retic.		
R Millions	1 168	1 383	1 119
R Millions	105	210	350
R Millions	300	450	650



Sources of Funding Available to Municipalities cont.

- National Electrification Programme
- Public Transport Infrastructure & Systems Grant
- 2010 FIFA World Cup stadiums development grant
- Backlogs in Electrification
- Capacity Building Grants to Municipalities

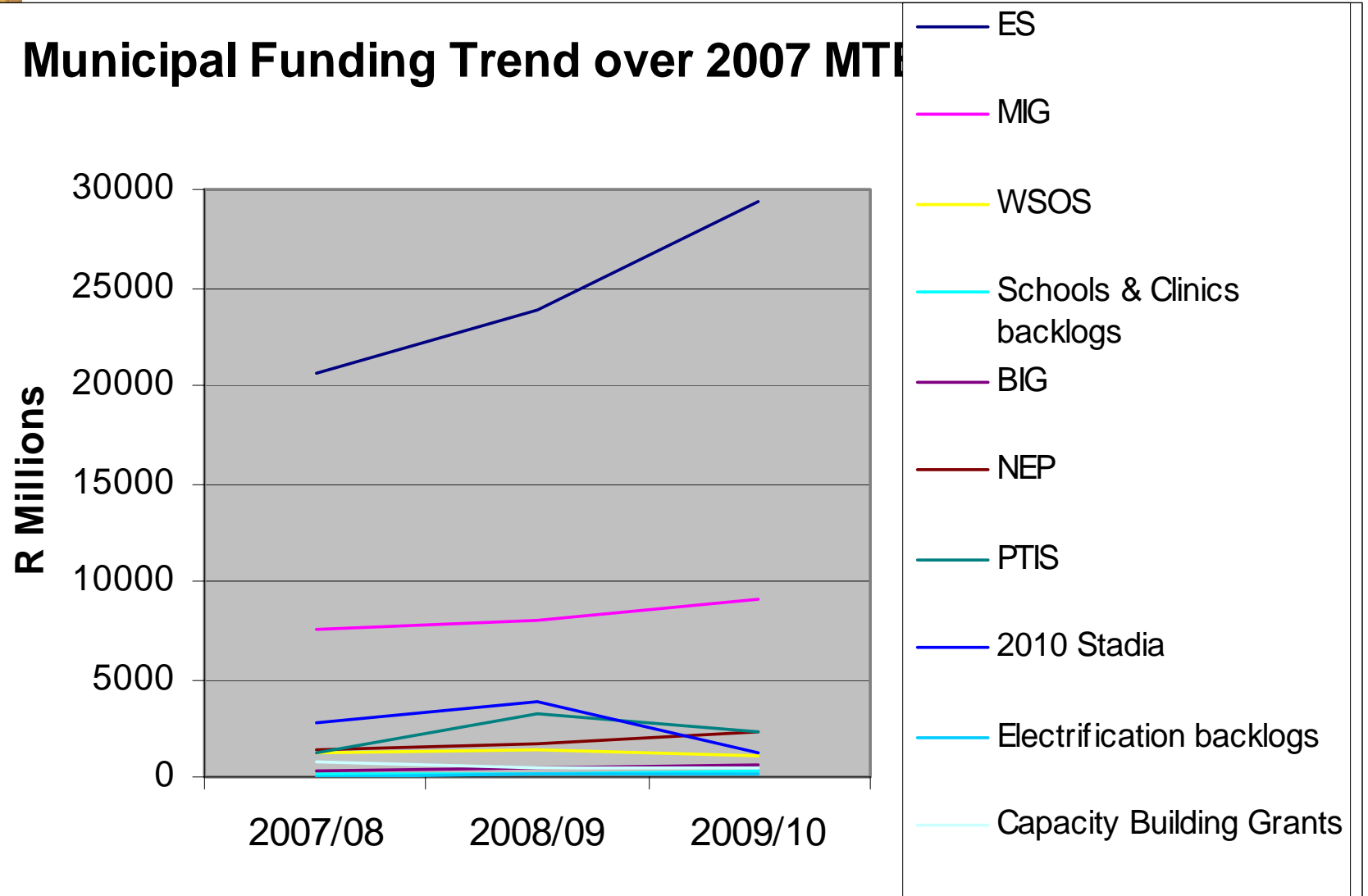
	2007/08	2008/09	2009/10
R Millions	1 441	1 747	2 318
R Millions	1 174	3 170	2 325
R Millions	2 700	3 800	1 300
R Millions	45	90	150
R Millions	749	400	400

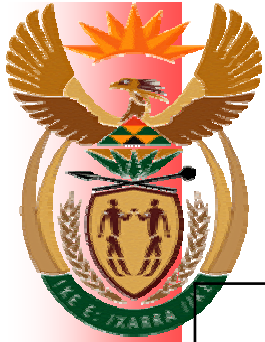
Total funding quantum over 2007 MTEF is in excess of R 125 billion (excluding the Housing component)



Funding Trend to Municipalities

Municipal Funding Trend over 2007 MTI





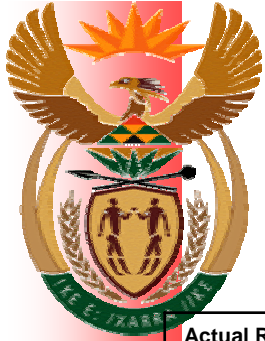
Current Maintenance & Rehabilitation / Renovation Trends at National Level

Nature of Investment	2005/06 Actual Spending R' 000	2006/07 Budget R' 000	Spending as at 31 March 2007 R'000
Installation of facilities	31,093	62,087	49,839
Maintenance	1,938,596	1,916,643	2,082,403
New construction	1,248,211	2,950,171	2,828,648
Other	603,492	875,425	785,456
Rehabilitation/Renovation	367,551	654,357	575,666
Upgrading/Extention	954,771	1,343,638	1,782,869
Demolition/Decommissioning	453	21,023	24,267
Grand Total	5,144,168	7,823,344	8,129,148
Percentge			
Installation of facilities	0.6%	0.8%	0.6%
Maintenance	37.7%	24.5%	25.6%
New construction	24.3%	37.7%	34.8%
Other	11.7%	11.2%	9.7%
Rehabilitation/Renovation	7.1%	8.4%	7.1%
Upgrading/Extention	18.6%	17.2%	21.9%
Demolition/Decommissioning	0.0%	0.3%	0.3%
Total	100.0%	100.0%	100.0%



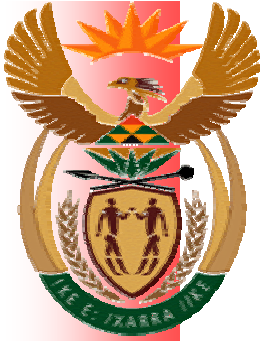
Current Maintenance & Rehabilitation / Renovation Trends at Provincial Level

	Funding Classification	2006/07 (R'000)
Additions	Capital	1,564,829
Disposal	Capital	3,000
Maintenance - Periodic	Capital	988,444
Maintenance - Recurrent	Current	3,153,991
New Construction	Capital	4,991,912
Rehabilitation	Capital	3,089,187
Renovations	Capital	693,742
Replacement	Capital	607,369
Upgrading	Capital	3,391,209
Nature of Inv. not Captured	Unknown	39,499
Total		18,523,181
Percentage		
Additions	Capital	8.4%
Disposal	Capital	0.0%
Maintenance - Periodic	Capital	5.3%
Maintenance - Recurrent	Current	17.0%
New Construction	Capital	26.9%
Rehabilitation	Capital	16.7%
Renovations	Capital	3.7%
Replacement	Capital	3.3%
Upgrading	Capital	18.3%
Nature of Inv. not Captured	Unknown	0.2%
Total		100.0%



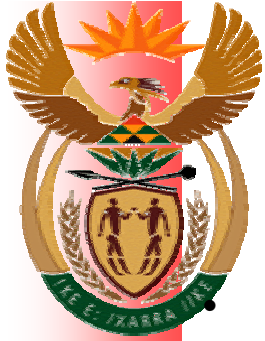
Current Maintenance & Rehabilitation / Renovation Trends at Local Level

Actual Repairs and Maintenance spending						
Rand	2005/2006			2006/2007		
	Wastewater Management	Waste Management	Water	Wastewater Management	Waste Management	Water
Cape Town	125460473	40930892	104627307			
Johannesburg		6,476,000.00	7,387,000.00			
Tshwane	36145655		117613835			
Ekurhuleni Metro	14900	36386189	157422332	9,620,494	34,567,634	117,355,311
eThekwini	131665930	23913250	211954080	140,994,380	31,157,390	275,269,710
Nelson Mandela	57024310	2487710	43377210	57,024,310	2,487,710	43,377,210
Buffalo City						
Mangaung						
Mbombela	-905,994.00	-4,997,133.00	-3,914,664.00			
Polokwane						
Sol plaatjie						
Total	349,405,274	105,196,908	638,467,100	207639184	68212734	436002231



SA IAM Initiatives

- SAICE Infrastructure Report Card (2006)
- DBSA Infrastructure Barometer (2006)
- DWAF (Water Services Infrastructure Asset Management Study; Support to Municipalities in Practicing Sound Asset Management)
- Dplg (Guidelines for Infrastructure Asset Management in Local Government)
- IIMM Assessment



Some Key Challenges Facing the Sector

Financial sustainability of municipalities

- Ringfencing of municipal services as per GAMAP
- Economic value of service (retail tariff determination)
- Billing and revenue collection
- Credit control and debt management
- Technical, financial and engineering capacity
- Lack of regulation and enforcement
- Several disparate support programmes in respect of capacity development
 - Project Consolidate
 - Siyenza Manje
 - DWAF
- Several IAM Initiatives
 - Dplg
 - DWAF
 - IMESA

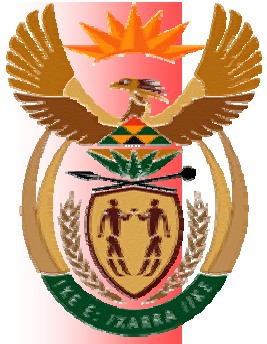


Recommendations

Undertake assessment of IAM practices across municipalities

Provide guidance to municipalities (if different IAM approaches are acceptable) OR

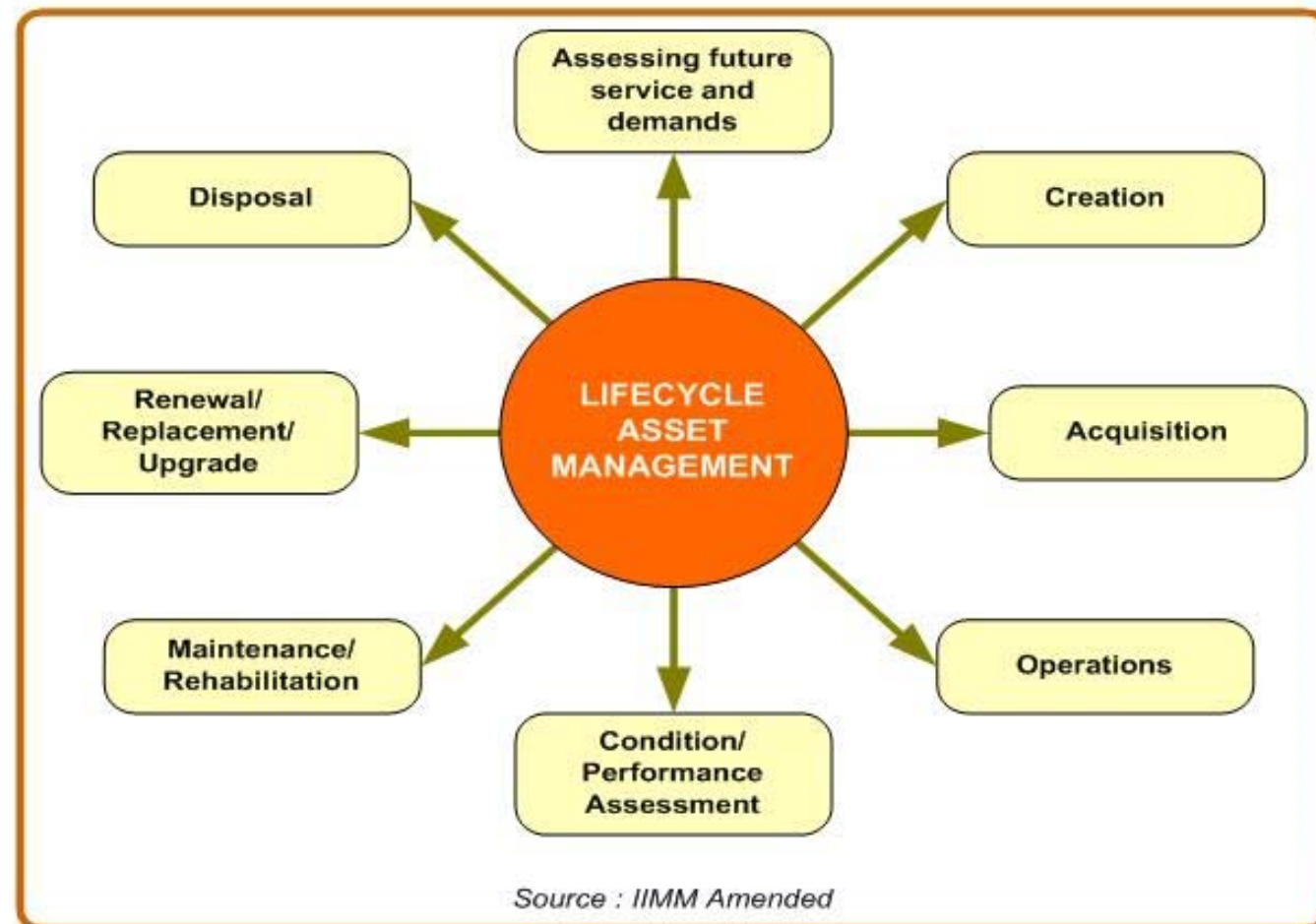
- Adopt a standardised IAM approach for all municipalities and legislate it
- Improve governance arrangements at municipalities
- Improve regulation and enforcement by respective Departments
- Drive primary initiatives to improve municipal financial sustainability
- Assessing and ensuring correct level and capacity of staff for IAM
- Starting point should be a status quo assessment:
 - Compilation of comprehensive asset registers;
 - Assessment of condition of assets;
 - Assessment of performance of assets;
 - Determination of replacement value of assets; and
 - Identification of risks



Thank You



Lifecycle Asset Management



Note: Integral to Lifecycle Asset Management are choices such as design, operations and maintenance regimes; all with the ultimate objective of the “**Lowest Lifecycle Cost**”