



**Municipal Infrastructure Support Agent (MISA)**

Cooperative Governance & Traditional Affairs (CoGTA)

1303 Heuwel Avenue, Riverside Office Park, Letaba House, Centurion

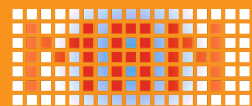
# **MIPMIS USER GUIDE – ANNEXURE 1**

## **Basics of Infrastructure Project Life Cycle And Development of a Compliant Asset Register**

# **MIPMIS**

Municipal Infrastructure  
Performance Management  
Information System

Developed by:



MUNICIPAL ACTION NETWORK

# Basics of Infrastructure Project Life Cycle And Development of a Compliant Asset Register



MISA/MIPMIS/2017

Version 1.0

© MAN Consortium, 2017

## *Acknowledgements*

*National Treasury – NT*

*Department of Cooperative Governance - GoGTA*

*Department of Provincial and Local Government – DPLG*

*South African Local Government Association – SALGA*

*Municipalities of South Africa*

*Construction Industry Development Board - CIDB*

*Municipal Infrastructure Support Agent - MISA*

## *Glossary of Terms*

APP – Annual Performance Plan

ARs – Asset Registers

B2B – Back to Basics

BPM – Business Process Mapping

BPM – Business Process Mapping

DCoG – Department of Cooperative Governance

CMIP - Comprehensive Municipal Infrastructure Plan

CoGTA – Cooperative Governance and Traditional Affairs

CRC – Current Replacement Cost

DMS – Degrees, Minutes, Seconds

DPLG – Department of Provincial and Local Government

DR – Disaster Recovery

DRC – Depreciated Replacement Cost

DRP – Disaster Recovery Planning

DRS – Disaster Recovery Server

EF – Entity Framework

ETL - Extraction, Transformation, and Loading

EUL – Estimated Useful Life

GIAMA - Government Immovable Asset management Act

GRAP - Generally Recognized Accounting Practice

HDD – Hard Disk Drive

HTML - Hypertext Markup Language

HTTP - Hypertext Transfer Protocol

ICT – Information and Communications Technology

IDMS – Infrastructure Delivery Management System

IDP – Integrated Development Plan

KPI – Key Performance Indicator

LAN – Local Area Network

LGTAS – Local Government Turn-Around Strategy

MANC – Municipal Action Network Consortium

MFMA – Municipal Finance Management Act

MIG – Municipal Infrastructure Grant

MIGMIS – Municipal Infrastructure Grant Management Information System

MIPMIS – Municipal Infrastructure Performance Management Information System

MISA – Municipal Infrastructure Support Agent

MSTS – Municipal Sectoral Technical Support

MVC – Model View Controller

NT – National Treasury

PIP – Project Implementation Plan

PPE – Property, plant and Equipment

PPM – Provincial Programme Manager

QA – Quality Assurance

QMC – Qlikview Management Console

RUL – Remaining Useful Life

SALGA – South African Local Government Association

SITA – State Information Technology Agency

SPV – Special Purpose Vehicle

TC – Technical Consultant

WAN – Wide Area Network

XML - Extensible Markup Language

# Basics of Infrastructure Project Life Cycle and Development of a Compliant Asset Register

## TABLE OF CONTENTS

<b>ACKNOWLEDGEMENTS</b>	<b>I</b>
<b>GLOSSARY OF TERMS</b>	<b>II</b>
<b>1 INTRODUCTION</b>	<b>1</b>
1.1 The Need for an Asset Register	1
1.2 The Importance of an Asset Register	1
1.3 Lifecycle Asset Management	2
1.4 Infrastructure Project Life Cycle	3
1.5 Infrastructure Implementation Planning	4
1.6 Define, classify, and account for the cost of fixed assets	6
1.6.1 Nature of Fixed Assets	6
1.6.2 Capital and Revenue Expenditure	7
1.7 Legislative Framework	8
1.7.1 Constitution	8
1.7.2 Over-arching Legislation	8
1.7.3 Strategic Planning	9
1.7.4 Occupational Health and Safety	10
1.7.5 Sector-Specific Legislation	10
1.7.6 Asset Management	10
1.8 Challenges in Developing Standardised Asset Registers across Municipalities	11
1.8.1 Legislation and Regulations	11
1.8.2 Cross Sectoral	11
1.8.3 Capacity	11
1.8.4 Standardisation	11
1.9 MISA Assistance to Municipalities	11
<b>2 REQUIRED INFORMATION TO GO INTO AN ASSET REGISTER</b>	<b>13</b>
2.1 Local Government Capital Asset Management Guideline - NT	13
2.1.1 Acquisition	13
2.1.2 Identification	13
2.1.3 Accountability	13
2.1.4 Performance	13

2.1.5	Disposal	14
2.1.6	Accounting	14
2.1.7	Management and risk information	15
<b>2.2</b>	<b>Guidelines for Infrastructure Asset Management in Local Government – DPLG</b>	<b>16</b>
<b>2.3</b>	<b>Maintenance Management Standard for Immovable Assets - CIDB</b>	<b>17</b>
<b>2.4</b>	<b>Accounting Guideline - Property, Plant and Equipment - GRAP 17</b>	<b>18</b>
2.4.1	Separation of assets into significant parts as per GRAP17	19
<b>3</b>	<b>REQUIRED INFORMATION FOR A COMPLIANT ASSET REGISTER</b>	<b>20</b>
<b>3.1</b>	<b>Asset Identification</b>	<b>21</b>
3.1.1	Unique Asset Identification Number	21
3.1.2	Detailed Asset Description	22
3.1.3	Acquisition	26
3.1.4	Accountability	26
3.1.5	Performance	26
3.1.6	Disposal	27
3.1.7	Accounting	27
3.1.8	Management and risk information	27
<b>4</b>	<b>CONTENT OF MISA DEVELOPED ASSET REGISTER</b>	<b>32</b>
<b>4.1</b>	<b>List of Data Field with in the MIPMIS Asset Register</b>	<b>32</b>
4.1.1	Risks	34
<b>5</b>	<b>MIPMIS REPORTS ON ASSET REGISTER</b>	<b>35</b>
<b>5.1</b>	<b>Infrastructure Overview Report</b>	<b>35</b>
<b>5.2</b>	<b>Infrastructure Financial Status</b>	<b>36</b>
<b>5.3</b>	<b>Infrastructure Indicators</b>	<b>36</b>
<b>5.4</b>	<b>Detailed Infrastructure Condition Report</b>	<b>37</b>
<b>5.5</b>	<b>Value of Assets</b>	<b>38</b>
<b>5.6</b>	<b>Infrastructure Replacement and Renewal Cost</b>	<b>40</b>
<b>5.7</b>	<b>GRAP 17</b>	<b>40</b>
<b>6</b>	<b>UNDERSTANDING OF MIPMIS REPORT AND USE</b>	<b>41</b>
6.1.1	Report Toolbar	42
6.1.2	Parameters	43
6.1.3	Credentials	43
<b>7</b>	<b>BIBLIOGRAPHY</b>	<b>43</b>



# 1 Introduction

## 1.1 The Need for an Asset Register

Effective management of municipal infrastructure is central to municipalities providing an acceptable standard of services to the community. Infrastructure impacts on the quality of our living environment and opportunities to prosper.

Not only is there a requirement to be effective, but the manner in which municipalities discharge their responsibilities as public entities is also important. Municipalities must demonstrate good governance and customer care, and the processes adopted must be efficient and sustainable. Councillors and officials are custodians on behalf of the public of infrastructure assets, the replacement value of which even in a small municipality, can amount to several hundred million Rand, and in larger ones, to several billion Rand.

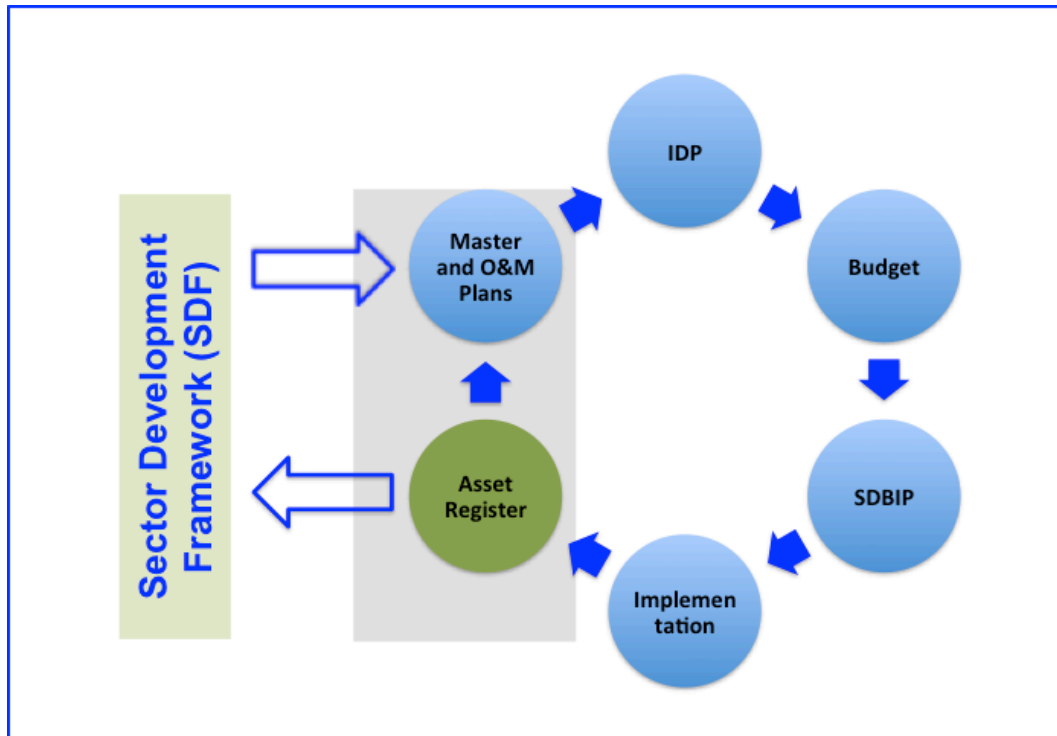
The Asset Register is the **foundation** that municipalities use to effectively manage and plan their Asset Management.

## 1.2 The Importance of an Asset Register

Without a correct and up to date Asset Register all municipal planning and service delivery will be based on faulted assumptions. This can lead to inaccurate budget spending, strategic planning and major inequality in service delivery to the community.

An incorrect and out of date Asset Register must be seen by municipalities as a high risk that must be mitigated immediately. The importance of an asset register may be understood better by the following diagrammatic presentation.



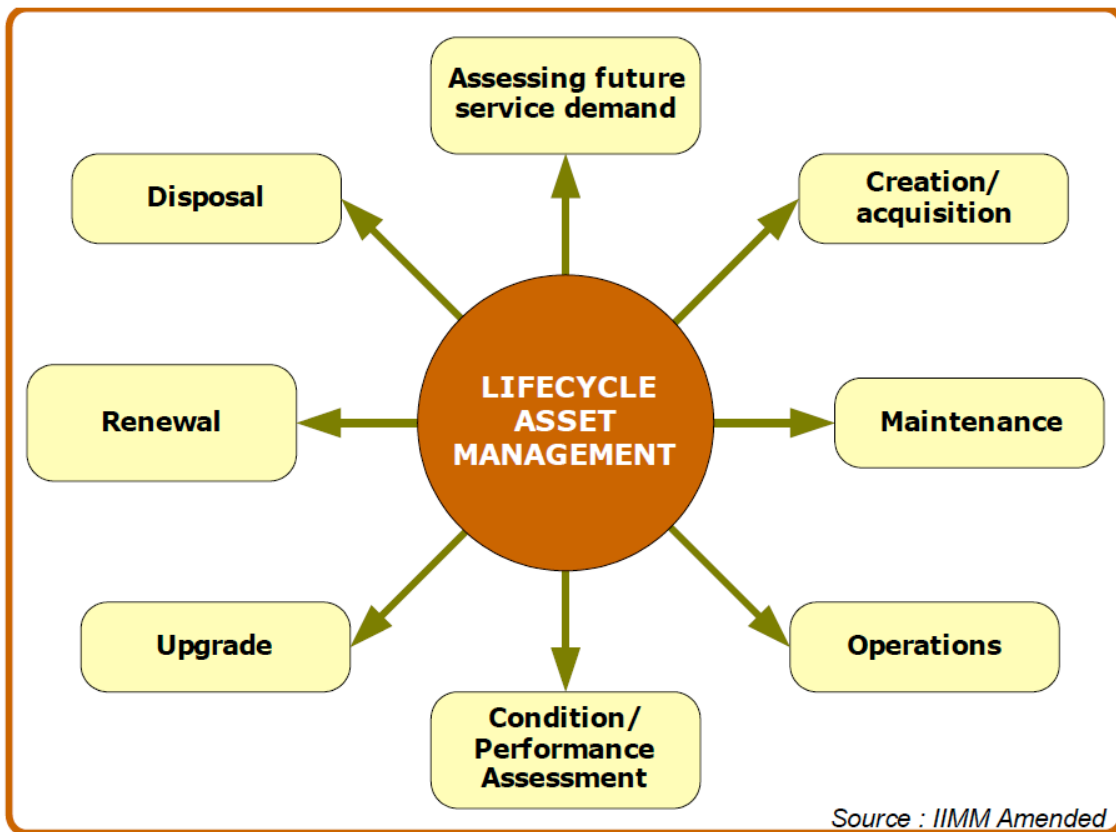


The development and operation & maintenance planning of infrastructure requires a proper knowledge of the existing infrastructure. Municipality's should therefore have a proper asset register in place.

### 1.3 Lifecycle Asset Management

The leadership of a municipality is required to prioritise its service delivery priorities, enforcement tactics, and tolerance to risk in shaping its vision. This process is informed by political objectives, legal compliance, and community consultation. The challenge to officials is to effectively communicate relevant and holistic information to the decision-makers to inform this process.

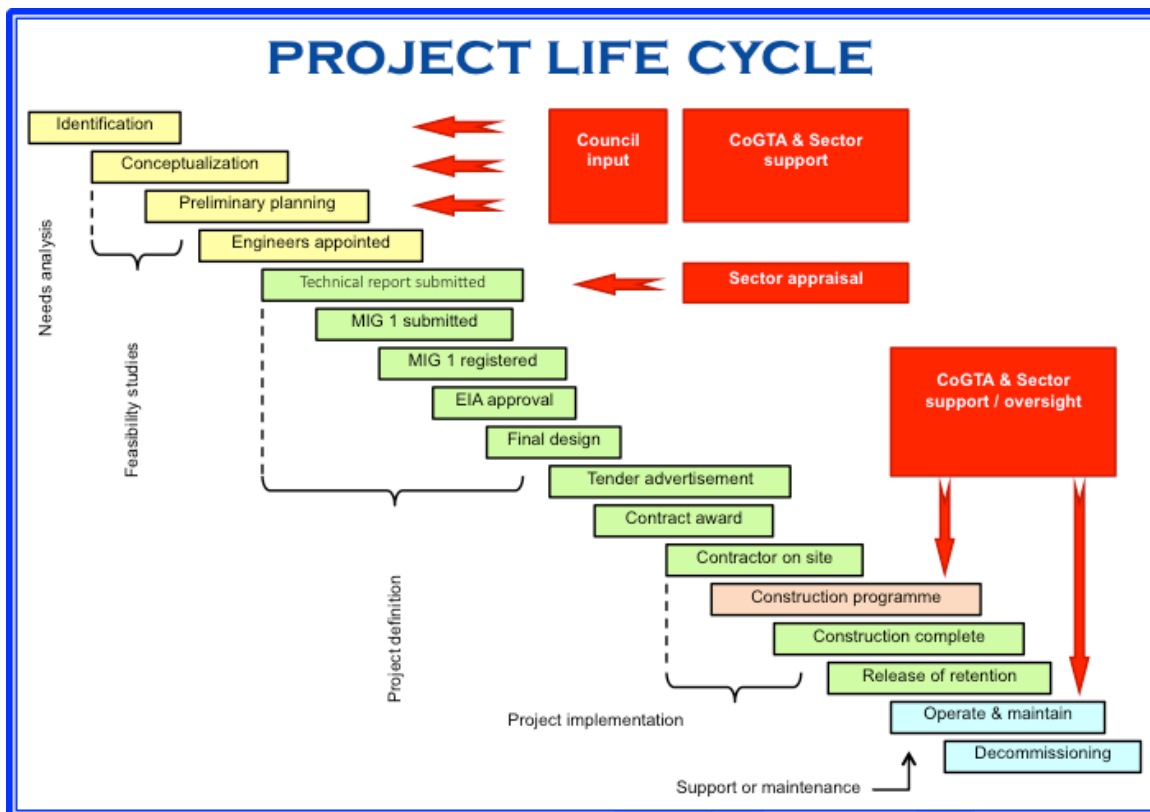
Asset management planning provides a sound framework within which these decisions can take place. The asset management objective is often stated as "to provide affordable levels of service that have been agreed with customers in the most cost-effective way for present and future customers". As such, it can be agreed that asset management is the link between strategic and operational planning in order to meet community requirements with the resources available.



The figure above shows the range of activities encompassed in 'lifecycle asset management'. The asset manager is concerned with planning activities around the asset lifecycle such as forecasting future level of service and demand needs, analysing the gap between current capability of the assets and that needed to meet future demands, and developing a works programme to close that gap. None of these activities would be possible without an up to date Asset register

#### 1.4 Infrastructure Project Life Cycle

Proper and efficient management of development and operation & maintenance of infrastructure are dependent on how best the relevant projects' implementation is managed. The phases of project life cycle according to the Municipal Infrastructure Grant guidance of Department of Cooperative Governance is presented in the following figure.

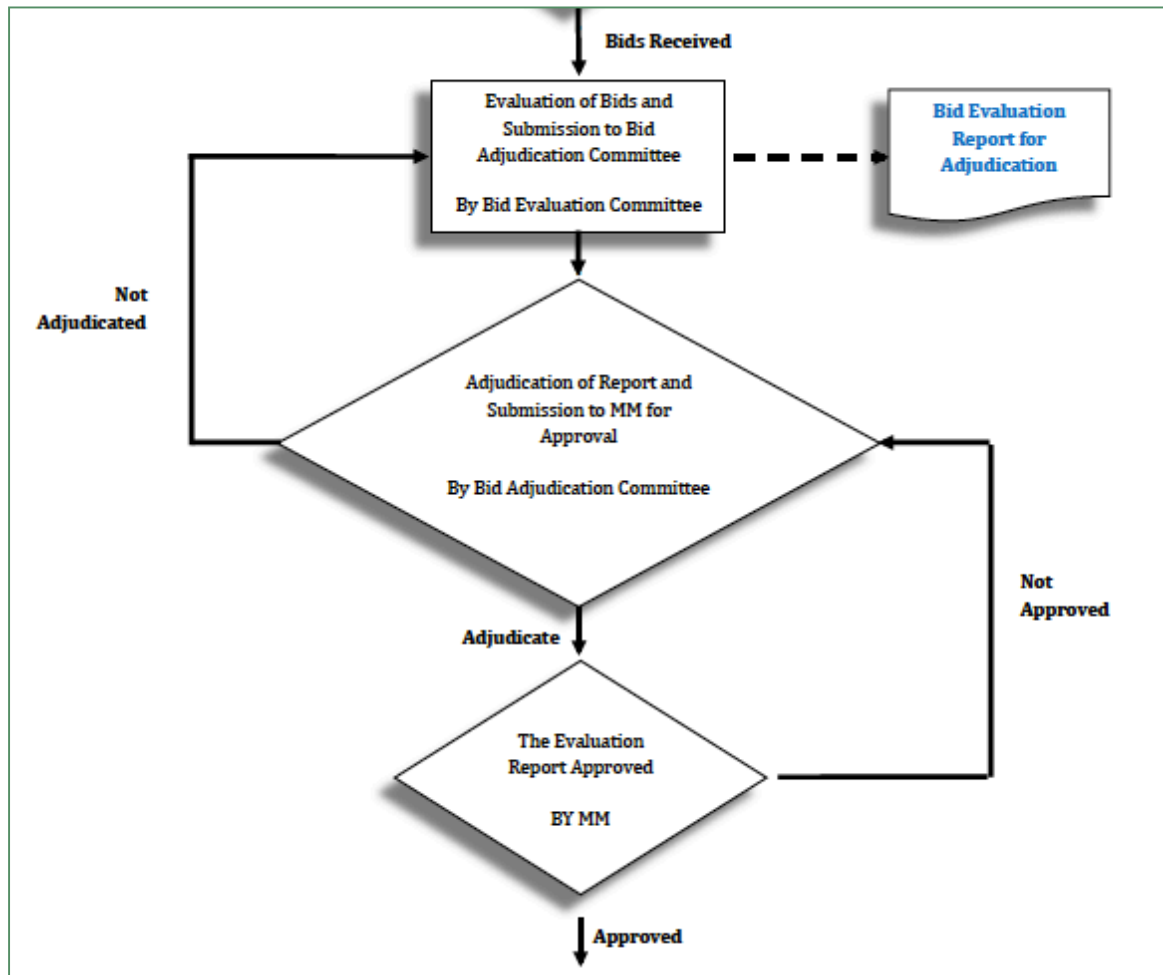


The figure illustrates the numerous steps that must be followed, and in particular highlights the steps that precede any actual construction. Many municipal staff and more so councillors do not understand the long lead times required for planning and approvals, prior to project implementation and delivery.

### 1.5 Infrastructure Implementation Planning

A project that has six (6) months of construction, requires, on average, eighteen (18) months of preparation prior to the start of construction and six (6) months after completion of construction to close-out the project. All together this is on average thirty (30) months. These are the minimum requirements and assumes no delays.

A typical infrastructure implementation process step is shown below. A delay in the adjudication process, for example, can add on months to the project timeframe.



The community will only derive benefit at the end of the construction period. The Operations and Maintenance (O&M) kicks in at the end of construction, at the beginning of the Defects Liability period and continues until the design period of the infrastructure. The Municipality needs to arrange the Funds and the Structure for O&M to get the optimum and reliable service and benefit out of the infrastructure.

A typical schedule for an Infrastructure Development Plan is shown below. Take note of the milestones and the average duration, which for a typical project is three (3) years.



- Vandalism
- Mistakes in installation
- Uninsured theft
- Damage during unpacking and installing
- Fines for not obtaining proper permits from government agencies
- Training

### 1.6.2 Capital and Revenue Expenditure

Expenditures that benefit only the current period are called **revenue expenditures**. Expenditures that improve the asset or extend its useful life are **capital expenditures**.

<b>REVENUE EXPENDITURES</b>	<b>CAPITAL EXPENDITURES</b>
Normal and ordinary repairs and maintenance	<ol style="list-style-type: none"> <li>1. Additions/Replacements/Rehabilitation</li> <li>2. Improvements</li> <li>3. Extraordinary repairs</li> </ol>

#### Ordinary Maintenance and Repairs

On April 9, the firm paid R300 for a tune-up of a delivery truck.

Apr. 9	Repairs and Maintenance Exp.	300 00					
	Cash					300 00	

This is a revenue expenditure

#### Asset Improvements

On May 4, a R5,500 hydraulic lift was installed on the delivery truck to allow for easier and quicker loading of heavy cargo.

May	4	Delivery Truck		5 500 00			
		Cash				5 500 00	

This is a capital expenditure

### Leasing Fixed Assets

A **capital lease** is accounted for as if the lessee has, in fact, purchased the asset. The asset is then amortized over the life of the capital lease.

A lease that is not classified as a capital lease for accounting purposes is classified as an **operating lease** (an operating lease is treated as an expense).

## 1.7 Legislative Framework

### 1.7.1 Constitution

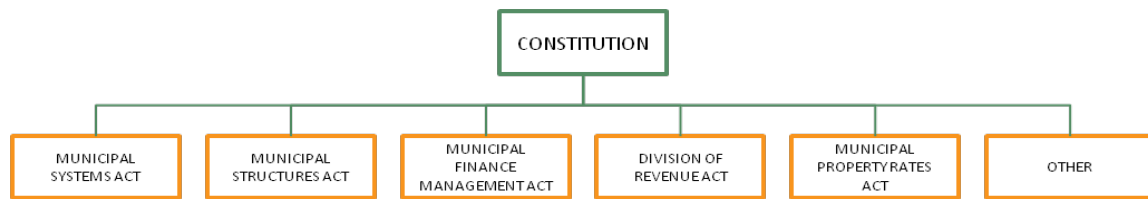
The Constitution indicates the following objectives of local government:

- provide democratic and accountable government for local communities;
- ensure the provision of services to the community in a sustainable manner;
- promote social and economic development;
- promote a safe and healthy environment; and
- encourage the involvement of communities and community organisations in the matters of local government.

The Constitution however cites an important caveat: municipalities should strive for the above objectives within their financial and administrative capacity. This highlights capacitating of municipalities as a fundamental and core need and places responsibility on all spheres of government to promote, monitor and support the building of such capacity.

### 1.7.2 Over-arching Legislation

Figure indicates the suite of local government specific legislation. Municipalities must also comply with sector specific and cross-cutting legislation.



Source: DPLG - GUIDELINES FOR INFRASTRUCTURE ASSET MANAGEMENT IN LOCAL GOVERNMENT 2006 - 2009

### 1.7.3 Strategic Planning

The Municipal Systems Act establishes the IDP of a municipality and is the principal strategic planning instrument that guides and informs all planning and development, and all decisions with regard to the planning, management and development in the municipality. It links, integrates, and coordinates all municipal plans into a single strategic plan for the development of the municipality. It provides a basis for determining the level and extent of municipal resources and capacity required, and for formulating budgets.

Every municipal council has to approve an annual municipal budget that includes provision for capital expenditure on projects over not more than 3 years. In terms of the Municipal Systems Act, the Council must also approve a financial plan linked to an IDP that is prepared for a period of 5 years (and updated annually).

The preparation of an IDP is a legal requirement, and in terms of the Municipal Systems Act, it must include the following:

- the municipal council's long-term development vision;
- the existing level of development, identifying communities that do not have access to basic municipal services;
- the municipal council's development priorities and objectives for its elected term, including its local economic development aims and its internal transformation needs;
- the municipal council's development strategies which must be aligned with any national or provincial sectoral plans and planning requirements binding on the municipality in terms of legislation;
- a spatial development framework which includes the provision of basic guidelines for a land use management system for the municipality;
- the council's operational strategies;
- applicable disaster management plans;
- a financial plan, which must include a budget projection for at least the next three years;
- and
- the key performance indicators and performance targets.

The Municipal Systems Act (section 78 & 79 processes) deals with infrastructure investment planning in the sense that the cost of ownership must be known and appropriate delivery strategies identified and implemented. DPLG, which is the custodian of this Act, views the preparation of a CMIP as a key mechanism to achieve this end.



#### 1.7.4 Occupational Health and Safety

The Occupational Health and Safety Act (85 of 1993, Construction Regulations) requires the owner of any “structure” (including municipal infrastructure such as bridges, waterworks, reservoirs, buildings, drainage works and roads) to maintain such structure in such a manner that “the structure remains safe for continued use and such maintenance records shall be kept and made available to an inspector upon request.”

#### 1.7.5 Sector-Specific Legislation

Municipalities must also comply with sector specific legislation, indicated in table:

Sector	Legislation
<b>Water and Sanitation</b>	Water Services Act, 1997 (Act No. 108 of 1997)
	National Water Act, 1998 (Act No. 108 of 1998)
<b>Electricity</b>	Electricity Act, 1987 (Act No. 41 of 1987)
	Electricity Distribution Industry Restructuring Bill, 2003
<b>Roads and Stormwater</b>	National Land Transport Transition Act, 2000 (Act No. 22 of 2000)
	Urban Transport Act, 1977 (Act No. 78 of 1977)
<b>Waste Management</b>	National Environmental Management Act, 1998 (Act No. 107 of 1998)
	Environment Conservation Act, 1989 (Act No. 73 of 1989)

#### 1.7.6 Asset Management

Government policy has increasingly focussed on the need to balance the delivery of new infrastructure in the short term, with the need to strive for sustainability. National Treasury has prepared Asset Management Framework for national and provincial spheres of government that largely focuses on movable assets. The Department of Public Works produced the Government Immovable Asset Management Act (GIAMA) 19 of 2007. GIAMA prescribes the need for public entities to prepare Asset Management Plans for immovable assets.

## 1.8 Challenges in Developing Standardised Asset Registers across Municipalities

### 1.8.1 Legislation and Regulations

With the wide variety of legislation in place that affects the Asset Register, confusion can be created if municipalities do not have a clear understanding of all the legislation and regulations.

### 1.8.2 Cross Sectoral

To achieve a standardised Asset Register across sectors can be challenging as each sector has their own unique legislation, regulations and needs.

### 1.8.3 Capacity

Capacity within municipalities differs and to achieve the same quality and accuracy of Asset Registers is currently a major challenge.

### 1.8.4 Standardisation

There is still a lack in nationwide standards for/ or the use of existing standards related to;

- Terminology,
- Category - Sub-category, Asset Class and Asset Descriptors,
- Replacement equivalents,
- Expected useful life,
- Measurement criteria for condition of assets and
- Risk indicators

## 1.9 MISA Assistance to Municipalities

Municipal Infrastructure Support Agent (MISA), a government component, accountable to the Executive Authority of the Cooperative Governance and Traditional Affairs (COGTA) was formed as a Special Purpose Vehicle (SPV) as part of implementing the Local Government Turn Around Strategy (LGTAS) in May 2012.

Thus, MISA's priorities and imperatives are directly aligned to the strategic objectives of Outcome 9 in achieving ***"A Responsive, Accountable, Effective and Efficient Local Government System"*** in South Africa.

As part of achieving the set strategic objectives and as part of continuation of MISA's intervention to support municipalities that was initiated since MISA's establishment, MISA has developed a web-enabled Asset Register residing in its Municipal Infrastructure Performance Management Information System (MIPMIS).

It is expected that municipalities will enjoy this completely free service from MISA in managing their basic service delivery and assist in better planning in infrastructure development and Operations and Maintenance.

Draft

## 2 Required information to go into an Asset Register

### 2.1 Local Government Capital Asset Management Guideline - NT

#### 2.1.1 Acquisition

- Transaction Date
- Amount
- Supplier / Contractor
- Reference (invoice/contract/payment/order number).

#### 2.1.2 Identification

- Asset class: should facilitate GRAP financial reporting requirements, e.g. PPE, investment property, intangible asset, etc.
- Asset sub-class: should facilitate management and reporting, e.g. motor vehicle, furniture, road infrastructure, etc.
- Asset functional group (if relevant): e.g. clinic, warehouse, hall.
- Parent asset or standalone asset: if parent then must have links to separately depreciable parts. For separately depreciable parts: link to parent asset.
- Asset number: a unique system-generated identifier, bar code or other unique number so that the individual asset can be distinguished from others.
- Asset specific identifiers (where applicable): e.g. serial numbers, registration number, erf number.
- Asset description: e.g. 2005 Toyota Corolla 140i, brown wooden six-seater boardroom table, etc.
- Asset dimensions/capacity (if relevant): e.g. 200 litre (tank), 4000 sq metre (building/land)
- Asset construction (if relevant): e.g. brick, wood, cast iron
- Location: e.g. Office 123, Store Abc, Erf. Xyz
- Zoning: residential, agricultural, industrial, etc.
- GPS: recommended for easy location (where relevant).

#### 2.1.3 Accountability

- Department / division: (depends upon organisation). Section / unit (depends upon organisation). Sub-section (depends upon organisation). Cost centre
- Custodian: e.g. user of the asset or person responsible for safeguarding the asset in his/her possession: for laptop, custodian is Mr Jones (Financial Manager).
- Restrictions (if any) in use or changing of an asset
- Ownership (if legal title is not with the municipality)
- Licence or permits
- Transfers: (to record date and transferor).

#### 2.1.4 Performance

- Capacity (where relevant), e.g. 2 tonne, 2000 sq metres, 200 ml/day
- Performance measures (where relevant)

- Condition Assessment (date, rating, person doing assessment, file no – for details)
- Warranties, guaranties or certification
- Useful life: e.g. years/hours/units/mileage, etc. of expected use
- Residual value: to be evaluated annually.

### 2.1.5 Disposal

- Date
- Amount: proceeds received
- Capacity: at date of disposal
- Condition: e.g. good, fair, bad, etc.
- Remaining useful: if sold earlier than originally planned
- Residual value: to compare with proceeds
- Reason for disposal.

### 2.1.6 Accounting

- Historical cost (or fair value where cost not available for initial recognition)
- Funding source
- Useful life: (original)
- Remaining useful life: (assessed, date of assessment)
- Residual value: (original, assessed and date of assessment)
- Depreciation method: (straight line, sum of units, diminishing balance, etc.)
- Revaluation: (amount, date, method, by whom): if revaluation model adopted by entity, should continue revaluing for subsequent measurement.
- Impairment. (amount, date assessed)
- Depreciation: value and rate: current year
- Accumulated depreciation: life to date
- Carrying amount
- Disposal (where relevant): (date, realised amount, details on disposal, Council resolution).

### Accounting for Depreciation

Over time, fixed assets such as equipment, buildings, and land improvements lose their ability to provide services. The periodic transfer of the cost of fixed assets to expense is called **depreciation**.

**Physical depreciation** occurs from wear and tear while in use and from the action of the weather. **Functional depreciation / Impairment losses** occur when a fixed asset is no longer able to provide services at the level for which it was intended.

### Factors in Computing Depreciation

The three factors in determining the amount of depreciation expense to be recognized each period are: (a) the fixed asset's initial cost, (b) its expected useful life, and (c) its estimated value at the end of the useful life.

The fixed asset's **estimated value** at the end of its useful life is called the **residual value, scrap value, salvage value, or trade-in value**. A fixed asset's residual value and its **expected useful life** must be estimated at the time the asset is placed in service.

### Straight-Line Method

The **straight-line method** provides for the same amount of depreciation expense for each year of the asset's useful life.

$$\text{Annual depreciation} = \frac{\text{Cost} - \text{estimated residual value}}{\text{Estimated life}}$$

A depreciable asset cost R24,000. Its estimated residual value is R2,000 and its estimated life is 5 years.

$$\text{Annual depreciation} = \frac{\text{Cost} - \text{estimated residual value}}{\text{Estimated life}}$$

$$\text{Annual depreciation} = \frac{\text{R24,000} - \text{R2,000}}{5 \text{ years}}$$

$$\text{Annual depreciation} = \mathbf{R4,400}$$

The straight-line method is widely used because it is simple and it provides a reasonable transfer of cost to periodic expenses if the asset is used about the same from period to period.

#### 2.1.7 Management and risk information

- Criticality rating: prioritisation in terms of service delivery within a programme f  
Service type: e.g. Administration, Water, Electricity
- Maintenance history: (summarised from maintenance systems)
- Operational history: (summarised from maintenance systems)
- Risk assessment: (may reference other documentation).

## 2.2 Guidelines for Infrastructure Asset Management in Local Government - DPLG

- Identification Reference (using a documented referencing convention)
- General Ledger Code
- Movable or Immovable Asset
- Asset Category and Sub-category (PPE: land, infra, community, heritage, or other; investment property; or inventory property)
- Heritage status (indicate if culturally, environmentally, or historically significant)
- Asset Class (in accordance with a documented convention)
- Asset Group (group of assets for reporting purposes e.g. network in a particular area, or a specific facility)
- Description of Asset (clear description e.g. name of facility, asset type, make and model/file ref to plans)
- Ward Number
- Asset Location (Erf, street, room – as applicable)
- Take-on Date (date of delivery or beneficial use)
- Municipal ownership or lease (owner or lessee and file ref for title deed/lease/rights/restrictions details)
- Supplier (company name, contact details)
- Work-in-progress (capital expenses prior to beneficial use of the asset)
- Original Cost (check treatment of VAT – e.g. invoice ref)
- Funding Source (name and type of funding of original construction – surplus cash, loans, grants, donations, reserves)
- Responsible Department (name of department)
- Asset Custodian (name of person)
- Effective Date of Custodianship (date person became custodian)
- Basic Municipal Service (Yes or No, based on municipal policy)
- Applicable Contracts (encumbrances, warranties, guarantees, maintenance contracts, etc.)
- Date Asset Last Renewed (full renewal - not partial)
- Expected Useful Life (years)
- Age (years from take-on or last renewal)
- Remaining Useful Life (years - initially, expected useful life minus age – superceded by RUL determined on latest renewal or on re-valuation)
- Method of depreciation (usually straight line)
- Residual Value (usually taken as zero for infrastructure assets)
- Capitalised Costs (expenses incurred in asset enhancement)
  - This month
  - This Financial Year
  - Since take-on/re-valuation
- Depreciation (original cost or re-valued amount plus subsequent capitalised expenses/RUL)
  - This month
  - This Financial Year

- Since take-on/re-valuation
- Impairment losses (as assessed in re-valuation exercise or ad-hoc impairment event)
  - This month
  - This Financial Year
  - Since take-on/re-valuation
- Carrying value (original cost or re-valued amount plus subsequent capitalised expenses, less subsequent depreciation and impairment)
- Disposal method (disposed, alienated, lost, stolen, destroyed, or decommissioned)
- Disposal expense/revenue
- Date of write-off (date asset physically removed or decommissioned)
- Re-valuation data (immovable assets only)
  - Latest re-valuation date
  - Next re-valuation date
  - Re-valuation method
  - PPE: DRC (or market valuation for applicable buildings)
  - Unit measure of asset extent (e.g. m; sqm, kW, Mℓ, etc.)
  - Extent of asset (number)
  - Latest unit rate for replacement (Rand per unit)
  - Replacement value (current replacement cost: Unit Rate x Extent)
  - Latest re-valued amount (PPE: Replacement value x remaining useful life/expected useful life)
  - Change in value in current financial year due to re-valuation (latest re-valued amount minus carrying value on date of re-valuation)
  - Re-valuation reserve (accumulated change in value due to re-valuations)
- Infrastructure Management Data (immovable assets only)
  - Criticality (based on documented grading convention)
  - Asset Condition (based on a documented grading convention and linked to remaining useful life)
  - Maintenance history (key information to support lifecycle decisions or link to Maintenance System)
  - Asset performance (based on a documented grading convention)
  - Asset utilisation (based on a documented grading convention)
  - Data accuracy (based on a documented grading convention)

### 2.3 Maintenance Management Standard for Immovable Assets - CIDB

Each entity shall establish, maintain and update asset registers supportive of asset care planning, in the following manner:

- Segment and classify its immovable asset portfolio(s) to at least the level of maintenance-significant item in accordance with a predetermined asset hierarchy, and shall furthermore, for purposes of maintenance and renewals planning, determine and record the following information against each asset in its asset register:



- asset identification number;
- physical description;
- physical parameters;
- estimated useful life;
- actual and minimum acceptable asset failure mode ratings (condition, performance, capacity and cost-of-operations);
- remaining useful life;
- current and depreciated replacement cost;
- asset criticality rating;
- any statutory obligations regarding the operation and maintenance of the asset; and
- responsible person(s).
- The entity shall, in maintaining and updating asset registers, update asset failure mode status and current replacement cost data for each asset on an annual basis.

## 2.4 Accounting Guideline - Property, Plant and Equipment - GRAP 17

- In order to comply with above, a
- GRAP compliant asset register should be prepared which should consist of the following information as a minimum:
  - Detail asset description;
  - Bar code, unique identifier, serial number (where applicable), erf number (where applicable) (or other number to distinguish it from other assets);
  - Location;
  - Purchase price;
  - Acquisition date;
  - Estimated useful life (original);
  - Estimated residual value;
  - Remaining useful life;
  - Depreciation;
  - Accumulated depreciation;
  - Disposal – date, proceeds, depreciation up to date of disposal;
- Information on a change in accounting estimate as a result of change in useful life or residual value – date reassessed, etc.;
  - Impairment loss recognised or reversed;
  - (NT, Accounting Guideline - Property, Plant and Equipment - GRAP 17, 2012) Carrying amount at the beginning and end of the reporting period;
  - Funding source;
  - Condition of the asset – this can assist in determining the remaining useful life of an asset and whether it may possibly be impaired; and
  - Person responsible for safeguarding and maintaining the asset(s).
- This information should be provided for each type of asset e.g. property, plant and equipment, intangible assets, investment property, and each class e.g. buildings, office

equipment, computer equipment, and preferably for the current and prior period simultaneously.

### 2.4.1 Separation of assets into significant parts as per GRAP17

Parts of assets only have to be depreciated separately if:

- the part identifiable has a cost that is significant in relation to the total cost of the item; and;
- the part has a different useful life than that of the item (or other parts).

Management should assess all assets which might have significant separately identifiable parts in order to identify which parts should be depreciated separately.

Notwithstanding the above, management can decide to depreciate separately the parts of an item of property, plant and equipment that does not have a cost that is significant in relation to the total cost of the item.

As an example, most infrastructure assets have significant parts and different useful lives from other parts of the related asset and should therefore be identified and depreciated separately. Note that to the extent that an entity depreciates separately some parts of an asset, it should also depreciate separately the remainder of the asset (the remainder will consist of the parts of the asset that are individually not significant).

The thought-process in deciding whether a part of an asset should be depreciated separately should be properly documented in the entity's policy on assets (the details need not be included as part of the accounting policy).

#### **Example: Significant parts - Building with other assets**

Entity B acquired a building on 1 September 2009 for R6,000,000 and which includes 5 air conditioners and an elevator. Assume that the fair value of the air conditioners is R500,000 and of the elevator R1,200,000 at acquisition date.

The useful life of the building is estimated to be 20 years and has a residual value of R1,000,000.

The air conditioners have an expected useful life of 5 years with no residual values.

The elevator has an expected useful life of 10 years with no residual value.

If one follows the approach that the identifiable assets attached to the building have different useful lives and their costs are significant in relation to the total cost of R6,000,000, the air conditioners and elevator should be treated as separate parts of the building and depreciated over their estimated useful life of 5 and 10 years respectively.

On the other hand, if one follows the approach that the costs of the identifiable assets attached to the building are not significant in relation to the total cost of R6,000,000, only the building will be recognised at R6,000,000 and depreciated over 20 years.

Whichever approach is followed, it should be properly justified.

**Example: Significant parts – Asset consisting of different parts**

An entity acquires an aeroplane at a cost of R10,000,000. At the acquisition date, the replacement values of the different parts of the aeroplane are as follows:

- Engine: R4,000,000
- Airframe: R4,000,000
- Seats: R2,000,000

The entity estimates that the airframe and seats will have a residual value of zero at the end of its useful life and also estimates that the engine will have a residual value of R500, 000. The entity assesses the useful lives as follows:

- Engine: 5 years
- Airframe: 20 years
- Seats: 10 years

Each of the different parts are significant in relation to the total cost of the aeroplane and the residual values and useful lives also differ significantly and therefore the different parts will have to be depreciated separately in accordance with GRAP 17.

Note that each part that will be depreciated separately will need to be shown separately in the fixed asset register and add up to the total cost of the asset.

For example, extract out of an entity’s fixed asset register:

Asset description	Cost	Useful life	Residual value	Depreciation
<b>Aeroplane</b>	<b>10,000,000</b>			
Engine	4,000,000	5 years	500,000	xxx
Airframe	4,000,000	20 years	0	xxx
Seats	2,000,000	10 years	0	xxx

### 3 Required Information for a compliant Asset Register

## 3.1 Asset Identification

### 3.1.1 Unique Asset Identification Number

Every asset must have a unique number that are used across all departments with no duplication.

It is recommended that this number have a meaningful structure that can ensure no duplication and make the assets easy to identify. MIPMIS use the Department of Provincial and Local Government's guidelines for the Unique Asset Identification Number as follows;

*Category - Sub-category / Asset Class / Asset Descriptor - Sequential Number for the asset type*

Example of how the categories can be broken down into sub-categories for ease of reference and reporting:

Category	ID	Sub-Category	ID
<b>Land</b>	LA	Sub-categories based on zoning	
<b>Infrastructure Assets</b>	IA	Roads Network	RDS
		Storm-water Network	STW
		Water Network	WAT
		Sanitation Network	SAN
		Solid waste disposal	SOW
		Electricity Network	ELE
<b>Community Assets</b>	CA	Sport & Recreation Facilities	SPR
		Community Facilities	COF
<b>Heritage Assets</b>	HA	Sub-categories as necessary – e.g. nature reserves, memorials, historic sites etc.	
<b>Other Assets</b>	OA	Buildings	BUI
		Vehicles	VEH
		Operational Plant and Equipment	OPE
		Office Furniture and Equipment	OFE

Source: DPLG - GUIDELINES FOR INFRASTRUCTURE ASSET MANAGEMENT IN LOCAL GOVERNMENT 2006 - 2009

Assets (both movable and immovable) are further classified according to asset class. The classifications need to be reviewed to ensure they cover all the types of assets in the municipality, and are defined in such a way that will enable effective management reporting.

An asset class will often comprise a number of similar assets that can be grouped together for ready identification using an asset descriptor. In the case of movable assets, this can be on the basis of asset type (e.g. vehicle types), and, for immovable assets, location (e.g. reticulation in Aganang, boreholes in village 6, mechanical plant at Pump Station 3).

Examples:

- “IA-WAT/MEC/PS6 – 9” is the identification for: Infrastructure Assets - Water Network / Mechanical Plant / at Pump Station No6 – Asset number nine;
- “CA-SPR/BG/SEL – 2” is the identification for: Community Assets – Sport & Recreation / Bowling Green / Seleka – Asset number two; and
- “IA-SAN/RET/MA2 – 3” is the identification for: Infrastructure Asset – Sanitation Network / Reticulation / Marapong Extension 2 – Asset number 3

### 3.1.2 Detailed Asset Description

Every asset must have a detailed description. This includes;

- Asset Name
- Model
- Serial Number
- Material Type
- Size
- Asset Class
- Location
- Zoning

#### 3.1.2.1 Asset Class

The asset class makes use of a hierarchy to portray a clear, holistic and logical breakdown of infrastructure in each of the services, using a structure that is consistent with the asset categories and classes used in financial management. Financial reporting will typically be required at the Facility/Asset Group level.

Network	Facility or Asset Group	Asset
Roads	Paved Arterial and Distributor Roads	Formation
		Pavement structure
		Pavement surface
		Kerbs and channels
	Paved Collector and Residential Roads	Formation
		Pavement structure
		Pavement surface
		Kerbs and channels
	Gravel Roads	Formation
		Gravel surface
Structures	Bridges	

Network	Facility or Asset Group	Asset		
		Retaining walls		
		Major culverts and subways		
		Overhead gantries		
		Footpaths	Hardened footpath surface	
		Traffic Management	Street signs	
			Traffic lights	
		Street Lights	Street lights	
		Street furniture	Commuter shelters	
			Guard rails	
		Buildings	Buildings	
		Fences	Fences	
		<b>Storm-water</b>	Interception and conveyance	Pipelines
				Culverts
Open channels				
Nodes, transitions				
Attenuation	Earth wall			
	Site			
	Perimeter protection			
Hydrological Monitoring Stations	Building			
	Specialist Equipment			
Pump Stations	Civil works			
	Building			
	Electrical Plant			
	Mechanical Plant			
	Perimeter Protection			
<b>Water supply</b>	Dams		Dam wall	
		Site		
		Perimeter Protection		
	Spring protection	Pipes		
		Dam wall		
		Tanks		
		Perimeter protection		
	Boreholes	Building		
		Casing		
		Perimeter Protection		
		Electrical plant		
		Mechanical plant		
		Meter		
	Water treatment works (may be broken down per process element)	Civil Works		
		Mechanical plant		
		Electrical plant		
		Buildings		
Pipes				
Meters				
Site				
Perimeter protection				
Pump station	Civil works			
	Building			
	Electrical Plant			

Network	Facility or Asset Group	Asset
		Mechanical Plant
		Telemetry
		Meter
		Site
		Perimeter Protection
	Bulk water pipelines	Pipelines
		Valves
		Meters
	Storage	Civil works - reservoirs, towers
		Tanks
		Support structure for tanks
		Mechanical plant
		Chlorinator
		Meters
		Hydrants
		Perimeter protection
		Site
	Distribution	Reticulation
		Hydrants
		Meters
		Communal standpipes
	Collection	Sewerage reticulation
		Vehicles (e.g. Honey sucker, tractor/trailer)
	Bulk pipelines (outfall sewer)	Rising mains
		Gravity mains (outfall)
	Pump station	Civil works
		Building
		Electrical plant
		Mechanical plant
		Telemetry
		Meter
		Site
		Perimeter protection
	Wastewater Treatment Works (may be broken down per process)	Civil Works
		Mechanical plant
		Electrical plant
		Buildings
		Meters
		Site
		Perimeter protection
<b>Solid waste disposal</b>	Collection	Vehicles
		Containers/bins
	Transfer stations, and processing facilities	Buildings
		Electrical plant
		Mechanical plant
		Site
		Perimeter protection
	Landfill site	Earthmoving and compaction equipment
		Landfill preparation

Network	Facility or Asset Group	Asset
		Perimeter protection
		Building
		Mechanical - weighbridge
		Electrical - weighbridge
<b>Electricity supply</b>	HV Transmission Network (>22kV)	Overhead lines
		Underground lines
		Site
	HV Substations (>22kV)	Site
		Building
		HV outdoor equipment
		HV GIS equipment
		HV transformers
		MV indoor equipment
	MV Network (<22kV)	Site
		MV overhead
		MV underground
	MV Substation (<22kV)	Site
		Building
		MV outdoor equipment
		MV indoor equipment
		MV transformers
	LV Network	LV underground
		LV overhead
		Consumer meters
Network Management	Workstations	
	Software	
	Telemetry	
	Load Control	
<b>Sports-fields, Parks and Cemeteries</b>	Roads	Paved areas (vehicles)
		Gravel areas (vehicles)
	Hardened surface (pedestrian)	Hardened footpath surface
		Tennis/basketball court
	Buildings	Buildings
	Swimming Pool	Swimming Pool
	Storm-water	Pipes
		Culverts
		Open channels
		Nodes, transitions
		Earth retention wall
		Storm-water nodes/ transitions
	Open Space	Grass, shrubs and trees
		Park furniture
		Spectator stands
		Lighting
Perimeter protection/fencing		
<b>Community Buildings and Administration Offices</b>	Each Community Building Type	Site
		Structure and building fabric
		Building finishes
		Plumbing



Network	Facility or Asset Group	Asset
		Electrical
		Air conditioning
		Lifts
		Fire prevention and protection
		Equipment for theatres and council chambers
		Gas installations
		Perimeter protection

Source: DPLG - GUIDELINES FOR INFRASTRUCTURE ASSET MANAGEMENT IN LOCAL GOVERNMENT 2006 - 2009

### 3.1.3 Acquisition

- Transaction Date
- Amount
- Supplier / Contractor
- Reference (invoice/contract/payment/order number).

### 3.1.4 Accountability

- Department / division: (depends upon organisation). Section / unit (depends upon organisation). Sub-section (depends upon organisation). Cost centre
- Custodian: e.g. user of the asset or person responsible for safeguarding the asset in his/her possession: for laptop, custodian is Mr Jones (Financial Manager).
- Restrictions (if any) in use or changing of an asset
- Ownership (if legal title is not with the municipality)
- Licence or permits
- Transfers: (to record date and transferor).

### 3.1.5 Performance

- Capacity (where relevant), e.g. 2 tonne, 2000 sq metres, 200 ml/day
- Performance measures (where relevant)
- Condition Assessment (date, rating, person doing assessment, file no – for details)
- Warranties, guaranties or certification
- Criticality
- Useful life: e.g. years/hours/units/mileage, etc. of expected use
- Residual value: to be evaluated annually.

#### 3.1.5.1 Condition

The approach adopted for determining condition needs to:

- be standardised so that it can be consistently applied across all municipalities to enable effective benchmarking, trend monitoring, and data aggregation;
- be cost effective, repeatable and objective;
- be linked to the expected failure pattern of the specific assets (wherever practicable);
- modelled on performance criteria rather than visual inspection of condition where such is not practicable or inappropriate (e.g. pipelines, power cabling);
- align with existing industry norms in each sector;
- support robust valuation; and

- support the modelling of renewal budget needs.

A simple generic five-point grading can be adopted.

Grade	Description	Detailed description	Indicative RUL
1	Very good	Sound structure, well maintained. Only normal maintenance required.	71-100% EUL
2	Good	Serves needs but minor deterioration (<5%). Minor maintenance required.	46-70% EUL
3	Fair	Marginal, clearly evident deterioration (10-20%). Significant maintenance required.	26-45% EUL
4	Poor	Significant deterioration of structure and/or appearance. Significant impairment of functionality (20-40%). Significant renewal/upgrade required.	11-25% EUL
5	Very poor	Unsound, failed needs reconstruction/ replacement (> 50% needs replacement)	0-10% EUL

Source: DPLG - GUIDELINES FOR INFRASTRUCTURE ASSET MANAGEMENT IN LOCAL GOVERNMENT 2006 - 2009

### 3.1.6 Disposal

- Date
- Amount: proceeds received
- Capacity: at date of disposal
- Condition: e.g. good, fair, bad, etc.
- Remaining useful: if sold earlier than originally planned
- Residual value: to compare with proceeds
- Reason for disposal.

### 3.1.7 Accounting

- Historical cost (or fair value where cost not available for initial recognition)
- Funding source
- Useful life: (original)
- Remaining useful life: (assessed, date of assessment)
- Residual value: (original, assessed and date of assessment)
- Depreciation method: (straight line, sum of units, diminishing balance, etc.)
- Revaluation: (amount, date, method, by whom): if revaluation model adopted by entity, should continue revaluing for subsequent measurement.
- Impairment. (amount, date assessed)
- Depreciation: value and rate: current year
- Accumulated depreciation: life to date
- Carrying amount
- Disposal (where relevant): (date, realised amount, details on disposal, Council resolution).

### 3.1.8 Management and risk information

- Criticality rating: prioritisation in terms of service delivery within a programme f
- Service type: e.g. Administration, Water, Electricity
- Maintenance history: (summarised from maintenance systems)
- Operational history: (summarised from maintenance systems)
- Risk assessment: (may reference other documentation).

### 3.1.8.1 Criticality

Identifying critical assets is often the first step in managing asset risk. It is necessary to have some form of measurement of the consequence of failure, and therefore an indicator of the “criticality” of the assets. This will enable the following:

- focusing of the level of detail and accuracy of data collection exercise;
- crafting of focused maintenance responses;
- prioritisation of asset renewal;
- prioritisation of asset-level risk mitigation actions; and
- measurement of the overall risk exposure of each network.

A basic approach is for example, where the impacts of asset failure are contemplated using a simple rating approach. The potential impacts are aggregated, resulting in the allocation of a criticality grading on a simple 3 point scale. The criteria and rating attributed to each impact, and the criticality grading bands will need to be tested and adjusted over time, based on application.

#### Consequence of Failure

Area of Impact	Measure	Rating
<b>Public and municipal employees’ health and safety</b>	Loss of life or multiple illness/injury	15
	Single illness/minor injury	5
	No effect	0
<b>Financial losses (cost of repairs and/or loss of revenue)</b>	More than R100,000	6
	Between R20,000 and 100,000	4
	Less than R20,000	2
<b>Service delivery performance</b>	Major impact	8
	Minor impact	4
	No effect	0
<b>Environment</b>	Major	10
	Minor	5
	No effect	0

Source: DPLG - GUIDELINES FOR INFRASTRUCTURE ASSET MANAGEMENT IN LOCAL GOVERNMENT 2006 - 2009

#### Criticality Grading

Consequence of Failure Score	Description	Criticality Grading
≥15	Critical	1
11 – 14	Important	2
≤10	Non-critical	3

Source: DPLG - GUIDELINES FOR INFRASTRUCTURE ASSET MANAGEMENT IN LOCAL GOVERNMENT 2006 - 2009

### 3.1.8.2 Risk Assessment

#### 3.1.8.2.1 Risk Identification

Risk events should be identified by officials who are familiar with the assets and their operating environment. This can be done by an individual, but there are benefits in discussing potential risk events on a collective basis. A schedule of commonly encountered risks that can be used to stimulate discussion of potential risk events.

<b>Physical</b>	Condition-based failure
	Vandalism
	Theft/illegal connections
	System losses
<b>Operational</b>	Operator error
	Misuse
	Theft
	Sabotage
	Inadequate safety measures
	Insufficient skills & capacity
	Delays in contracts
	Under or over utilisation
	<b>Technical</b>
Inadequate data	
Inadequate systems capability	
Inadequate design	
Fitness for purpose	
Inadequate construction standards	
Insufficient infrastructure capacity	
Infrastructure obsolescence	
Inadequate maintenance	
<b>Legal</b>	Loss of rights/license
	Change in legislation
	Fines
<b>Natural/environmental</b>	Flood
	Drought
	Storms
	Sinkholes
	Fire
<b>External</b>	Power cuts
	Availability of consumables (e.g. diesel, chemicals)
	Availability of parts supplies

	Reliability of bulk
	Quality of bulk
	Capacity of bulk
<b>Financial</b>	Inadequate CAPEX budget
	Inadequate OPEX budget
	Inefficient collection
	Prohibitive O&M costs
	Unforeseen budget cuts
<b>Institutional</b>	Poor morale
	Inadequate or cumbersome processes
	Ineffective strategic leadership
	Unclear targets/goals
<b>Social</b>	Change in expectations
	Change in demand

Source: DPLG - GUIDELINES FOR INFRASTRUCTURE ASSET MANAGEMENT IN LOCAL GOVERNMENT 2006 - 2009

### 3.1.8.2.2 Consequences of Risk Events

A consequence rating has to be allocated to each risk event. Whilst sophisticated techniques exist that attempt to quantify these consequences, a more qualitative approach is often more practical, using a guide such as shown in the table below. Consequence tables are very specific to the size and type of assets, and organisational needs – thus the table should be developed with inputs from senior management of the municipality.

Consequence Rating	Qualitative Description	Direct costs (repair, lost income, third party damage)	Service delivery performance	Effect on public health, safety and property	Environmental Damage	Municipal Image
<b>1</b> Insignificant	Is readily absorbed under normal operating conditions	<R20,000	Less than 50 customers without potable water for up to 8 hrs	No health or safety impact, minor property damage	Minor transient environmental damage, visual effects only	Individual interest only, no community concern
<b>2</b> Minor	Can be managed under normal operating conditions	R20,000- R100,000	Less than 50 customers without water for up to 24 hours	Minor health impact on small number of people	Minor damage to environment, longer effect	Minor community interest, minor local media report
<b>3</b> Moderate	Can be managed but requires additional resources and management effort	R100,000- R500,000	Less than 50 customers without potable water for up to 48 hrs	Serious health impact on small number or minor impact on large	Moderate environmental damage, local importance	Public community discussion, major local media interest

					number of people		
4	Major	Will have a prolonged impact and extensive consequences	R500,000- R5,000,000	More than 50 customers without potable water for a period of over 48 hours	Extensive injuries or significant health impacts, single fatality	Major long term environmental impact. Prosecution expected	Major loss in community confidence
5	Catastrophic	Irreversible and extensive impacts, or significantly undermining key business objectives	>R5,000,000	More than 500 customers without potable water for a period of over 48 hours	Multiple fatalities	Serious damage of national importance and irreversible impact. Prosecution expected.	National media

Source: DPLG - GUIDELINES FOR INFRASTRUCTURE ASSET MANAGEMENT IN LOCAL GOVERNMENT 2006 - 2009

### 3.1.8.2.3 Probability of Risk Events

A probability rating is allocated for each risk event. Whilst statistical probabilities may be used, municipalities may find it more practical to use subjective criteria.

Rating	Probability	Condition
A	Rare	Very Good
B	Unlikely	Good
C	Moderate	Fair
D	Likely	Poor
E	Almost certain	Very Poor

Source: DPLG - GUIDELINES FOR INFRASTRUCTURE ASSET MANAGEMENT IN LOCAL GOVERNMENT 2006 - 2009

### 3.1.8.2.4 Risk Exposure

The risk exposure of a municipality to a particular event can be considered to depend on the consequences and the probability of that event. A matrix such as the one indicated in Table can be used to rank events as low, moderate, significant or high risk exposure to the municipality.

		Consequence				
		1 Insignificant	2 Minor	3 Moderate	4 Major	5 Catastrophic
Probability	A Rare	L	L	L	M	M
	B Unlikely	L	L	M	M	S
	C Moderate	L	M	M	S	H
	D Likely	M	M	S	H	H
	E Almost certain	M	S	H	H	H

Risk Exposure	
L	LOW
M	MODERATE
S	SIGNIFICANT
H	HIGH

Source: DPLG - GUIDELINES FOR INFRASTRUCTURE ASSET MANAGEMENT IN LOCAL GOVERNMENT 2006 - 2009

## 4 Content of MISA developed Asset Register

### 4.1 List of Data Field with in the MIPMIS Asset Register

**Organisation** – This is the organisation responsible for the Infrastructure Asset.

**Number** - All infrastructure assets must have a unique identification reference number. A common approach must be used across all departments in the municipality, such as the following:

*Category - Sub-category / Asset Class / Asset Descriptor - Sequential Number for the asset type*

**Model** - The model of an asset must be inserted. E.g. 2500 Ford.

**Serial Number** - Standard serial number of an asset. E.g. serial numbers, registration number, erf Number or other number to distinguish it from other assets.

**Description** - A Descriptive name for the asset.

**Material Type** - The type of material of an asset. E.g. brick, wood, cast iron, pvc.

**Class Description/Nature** - This field is a dropdown, where you are able to select the required Class Description/Nature from a pre-loaded list.

**Size** - The size of an asset must be inserted. E.g. 150mm pipe, 240l Wheelie Bin.

**Capacity** - The capacity of the asset. E.g. number of kiloliters, 200 litre (tank), 4000 sq metre (building/land), 65 l/s (water pipe)

**Quantity** - Quantity of the asset. E.g. 100m of pipe, 1 Solid Waste Truck.

**Utilisation** - The extent to which an asset is being productively used – measured as a percentage of its capacity.

**Replacement Equivalent** - The replacement equivalent of an asset must be inserted. E.g. A 300mm clay sewer pipe needs to be replaced and the replacement equivalent will be a 300mm concrete pipe.

**Year Constructed/Purchase Date** – The date the asset was completed or purchased.

**Supplier Name** - The supplier name.

**Criticality Grade** - This field is a dropdown, where you are able to select the required Criticality Grade from a pre-loaded list.

**Condition** - This field is a dropdown, where you are able to select the required Condition Grade from a pre-loaded list.

**Condition Index/Grade** - Once the condition is chosen, this field is displayed according to the selected condition.

**Ward** - This field is a dropdown, where you are able to select the required Ward from a pre-loaded list.

**Latitude** - GPS coordinates to be inserted in these fields, the format should be as follows: -26.7627 Decimal Degrees (DD), but MIPMIS also caters for Degrees Minutes Seconds (DMS) as well by pressing the  the user can capture the latitude in the DMS format

**Longitude** - GPS coordinates to be inserted in these fields, the format should be as follows: 35.1627 Decimal Degrees (DD), but MIPMIS also caters for Degrees Minutes Seconds (DMS) as well by pressing the  the user can capture the longitude in the DMS format.

**Custodian** - The person responsible for safeguarding the asset.

**Replacement Cost per Item** - A Rand Value. The cost of replacing an existing asset item with a modern asset item of equivalent capacity.

**Purchase Price** - A Rand Value. Costs should be used for newly or recently acquired assets for which clear evidence of costs can be determined from transactional records, e.g. Invoices.

**Actual/Deemed Cost** - A Rand Value. If the Purchase Price for an asset is not available Deemed Cost should be selected, and the measured value should be inserted, the date on which the measurement was made should then be inserted in the Year Constructed/Purchase Date. Deemed Cost is determined by using the guidance and provisions in Directive 7 on The Application of Deemed Cost on the Adoption of Standards of GRAP.

**Depreciated Replacement Cost** - A Rand Value. A measure of current value of an asset, based on its current replacement cost less an allowance for deterioration of condition to date (based on the fraction of Remaining Useful Life/Expected Useful Life).



$$DRC = CRC * \left(\frac{RUL}{EUL}\right)$$

**Current Replacement Cost** - A Rand Value. The cost of replacing an existing asset with a modern asset of equivalent capacity.

**Addition Amount** - A Rand Value. Capex on additions made to an asset.

#### 4.1.1 Risks

**Description** - Enter a short description of the Risk. This description could be the same as the Risk Type.

**Risk Type** - This field is a dropdown, where you are able to select the required Risk Type from a pre-loaded list. E.g. Insufficient skills and Capacity, Condition-based failure, Vandalism, etc.

**Risk Consequence** - This field is a dropdown, where you are able to select the required Risk Consequence from a pre-loaded list. E.g. Insignificant, Minor, Moderate, etc.

**Risk Probability** - This field is a dropdown, where you are able to select the required Risk Probability from a pre-loaded list. E.g. Rare, Unlikely, Moderate, etc.

**Risk Exposure** - This is a calculated field using; Consequence and Probability. According to the selection you made for Risk Consequence and Risk Probability, this field is calculated automatically.

**Cost of Risk** – This field is to indicate the cost if this risk will happen.

**Risk Response** - Insert a Risk response in this field.

## 5 MIPMIS Reports on Asset Register

### 5.1 Infrastructure Overview Report

Brick Structure,PUBLIC OPEN SPACE / PARK SEBOKENG EXT 21

<b>Description</b>	
Infrastructure Number	INF_ELE_LVN13978_MUN_ELE.1146
Model	
Serial Number	
<b>Type</b>	
Material Type	
Class Description/Nature	Parks
Size	0
Capacity	
Quantity	
Utilisation (%)	0
Replacement Equivalent	
Year Constructed / Purchase Date	1905-03-16T00:00:00
Supplier Name	
<b>Classification</b>	
Criticality Grade	Non-critical
Condition	Fair
Condition Index	3
Ward Id	
Custodian	
<b>Costs</b>	
Purchase Price	22000
Deemed Cost	0
Depreciated Replacement Cost	14666.67
Current Replacement Cost	22000
Addition Amount	0

⚠ Risks



📍 Location

## 5.2 Infrastructure Financial Status

Home > MIPMISReports > Infrastructure Financial Status

Province: Eastern Cape District: Buffalo City Metropolitan Municipality  
 Organisation: Buffalo City Metropolitan Municipality

1 of 3 Find | Next

### Infrastructure Financial Status



Sector	Asset Class	Eastern Cape			
		Price	DRC	CRC	Additional
		Buffalo City Metropolitan Municipality			
		Buffalo City Metropolitan Municipality			
Agriculture and Environmental Management	Buildings - EUL 50	R14125852.00	R7380286.05	R14125852.00	R0.00
	Moveables - EUL 5	R25320676.66	R13674576.54	R32671604.10	R1055903.87
	Parks - EUL 50	R2378517.00	R1580343.31	R2378517.00	R0.00
	Site (access roads, parking,	R30493304.50	R18904737.07	R30506854.50	R0.00
Education	Community Buildings	R61285253.00	R34370319.40	R61285253.00	R0.00
Emergency Services	Community Buildings	R61667364.42	R24048825.20	R53184366.95	R0.00
	Moveables - EUL 5	R6596109.74	R2725727.65	R6664491.04	R140408.81
	Paved collector and	R1077234.66	R294449.71	R442458.72	R0.00
Energy	HV Substation Equipment -	R121550454.59	R50704279.21	R180978709.26	R0.00
	LV Network (overhead) -	R286764914.82	R203514897.79	R494041294.44	R48871941.71
	Moveables - EUL 5	R9178490.00	R7187509.76	R18341404.65	R4598498.78
	MV Substations Switch	R1220786061.77	R520611658.24	R1247984044.24	R8869068.35
	MV Transformers	R290056355.45	R126121846.02	R294652758.82	R1718851.93
	Network Management -	R1159956831.08	R428772445.07	R2303296766.36	R35528581.30
	Streetlights - EUL 25	R56524306.68	R43941324.67	R56810820.21	R7929460.74

## 5.3 Infrastructure Indicators

Home > MIPMISReports > Infrastructure Indicators

Province: Eastern Cape District: Buffalo City Metropolitan Municipality Organisation: Buffalo City Metropolitan Municipality

1 of 3 Find | Next

**Infrastructure Indicators**

Sector	Asset Class	Eastern Cape Buffalo City Metropolitan Municipality Buffalo City Metropolitan Municipality			
		Average Criticality	Average Criticality	Average Condition	Average Condition
Agriculture and Environmental Management	Buildings - EUL 50	2.00	★	2.00	★
	Moveables - EUL 5	2.00	★	2.00	★
	Parks - EUL 50	2.00	★	2.00	★
	Site (access roads, parking, footpaths, lighting, landscaping, irrigation) - EUL 15	2.00	★	2.00	★
Education	Community Buildings (Abattoirs, Care Centres, Clinics, Community Centres, Disaster Management Centres etc) - EUL 50	2.00	★	2.00	★

## 5.4 Detailed Infrastructure Condition Report

Province: Eastern Cape District: Buffalo City Metropolitan Municipality  
 Organisation: Buffalo City Metropolitan Municipality Criticality: Critical, Important  
 Condition: Poor, Very poor Asset Class: Paved arterial and distributor roads

1 of 327 Find | Next



MUNICIPAL  
INFRASTRUCTURE  
SUPPORT AGENT



### Detailed Infrastructure Condition Report

Organisation	Province	District	Asset Class	Number	Description	Criticality	Condition	CRC
Buffalo City Metropolitan Municipality	Eastern Cape	Buffalo City Metropolitan Municipality	Paved collector and residential roads, and parking areas - EUL 50	BLD_BLD_DEP2 5306_PAV1_EAR. 0	Depots / workshops Pavements Bisho Depot	Important	Very poor	R27,166.00
	Eastern Cape	Buffalo City Metropolitan Municipality	Paved collector and residential roads, and parking areas - EUL 50	BLD_BLD_DEP2 5306_PAV1_ROA. 0	Depots / workshops Pavements Bisho Depot	Important	Very poor	R41,234.00
	Eastern Cape	Buffalo City Metropolitan Municipality	Paved collector and residential roads, and parking areas - EUL 50	BLD_BLD_DEP2 5306_PAV1_ROA 1.0	Depots / workshops Pavements Bisho Depot	Important	Very poor	R83,715.00
	Eastern Cape	Buffalo City Metropolitan Municipality	Paved collector and residential roads, and parking areas - EUL 50	BLD_BLD_OFF2 5312_PAV_ROA1. 0	Offices and Precincts Pavements Beaconbay Civic Center	Important	Poor	R44,648.00
	Eastern Cape	Buffalo City Metropolitan Municipality	Paved collector and residential roads, and parking areas - EUL 50	BLD_BLD_OFF2 5332_PAV_EAR.0	Offices and Precincts Pavements Gompo Post Office Building	Important	Poor	R92,725.00

## 5.5 Value of Assets

Report Level **Municipal** Province **Eastern Cape**  
 District **Buffalo City Metropolitan Municipality** Organisation **Buffalo City Metropolitan Municipality**

Report Date: 2017-05-01

### Municipal Report

Eastern Cape

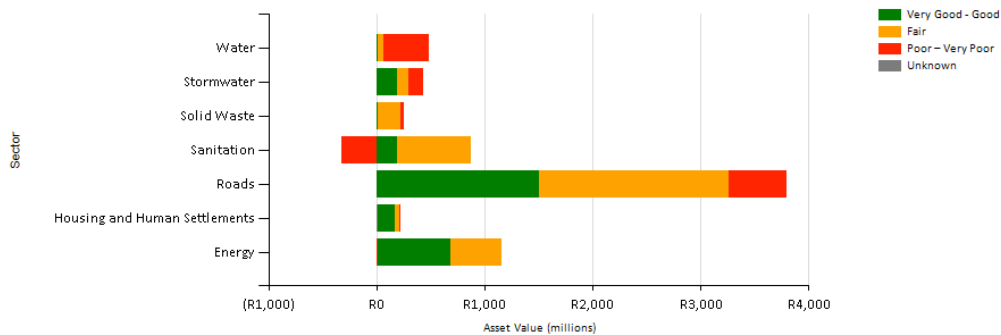
Buffalo City Metropolitan Municipality

Buffalo City Metropolitan Municipality



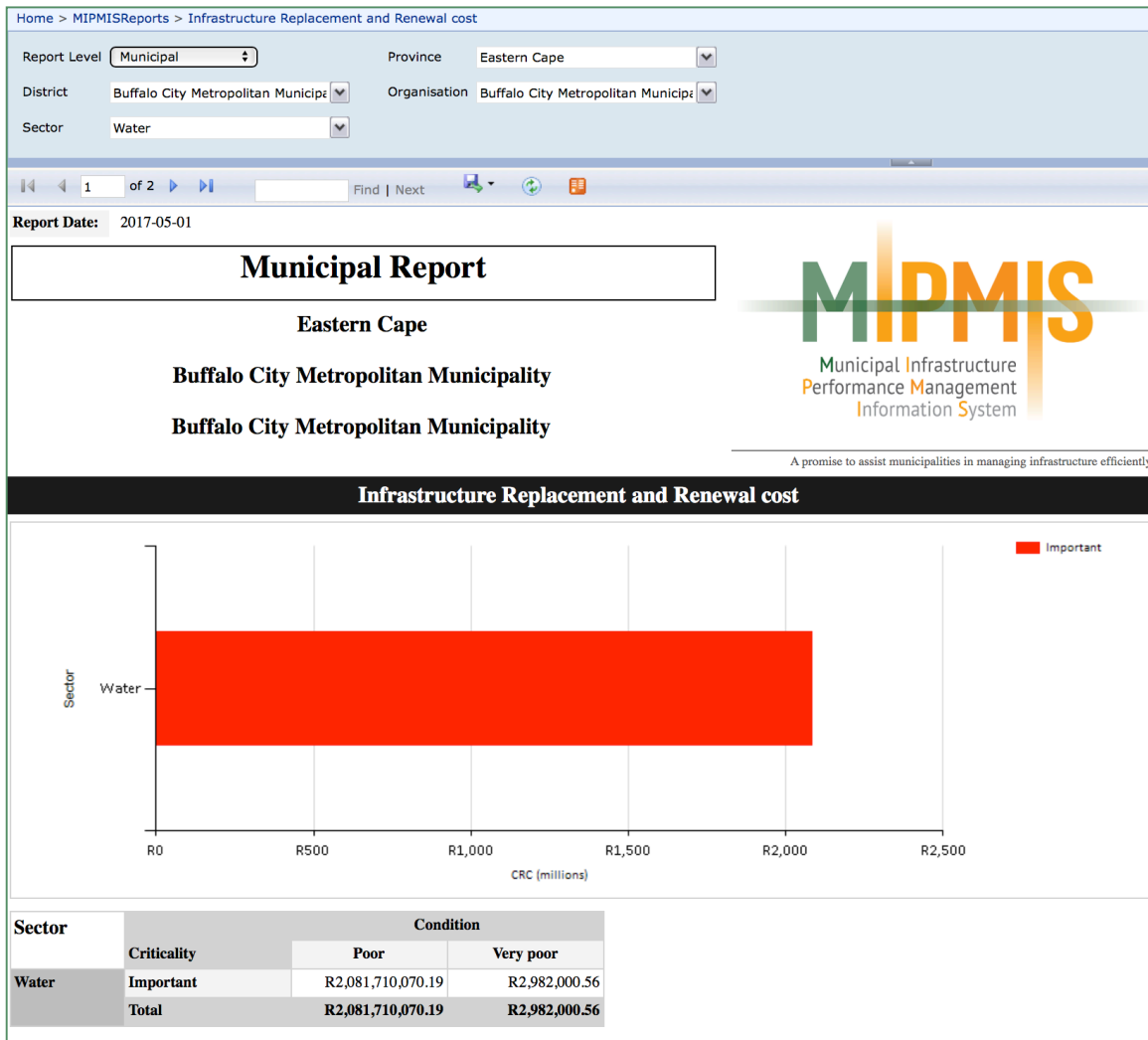
A promise to assist municipalities in managing infrastructure efficiently

#### Values of Assets



Sector	Criticality	Condition			
		Very Good - Good	Fair	Poor - Very Poor	Unknown
Energy	Important	R681,587,728.38	R474,298,907.06	(R1,280,265.88)	
	<b>Total</b>	<b>R681,587,728.38</b>	<b>R474,298,907.06</b>	<b>(R1,280,265.88)</b>	
Housing and Human Settlements	Important	R170,417,150.84	R42,888,480.82	R9,991,327.38	(R168,838.68)
	<b>Total</b>	<b>R170,417,150.84</b>	<b>R42,888,480.82</b>	<b>R9,991,327.38</b>	<b>(R168,838.68)</b>
Roads	Important	R1,497,507,086.71	R1,756,899,251.08	R543,675,667.73	
	<b>Total</b>	<b>R1,497,507,086.71</b>	<b>R1,756,899,251.08</b>	<b>R543,675,667.73</b>	
Sanitation	Important	R188,821,877.28	R683,346,889.51	(R326,727,737.18)	
	<b>Total</b>	<b>R188,821,877.28</b>	<b>R683,346,889.51</b>	<b>(R326,727,737.18)</b>	
Solid Waste	Important	R6,095,497.58	R217,456,407.69	R25,612,734.27	
	<b>Total</b>	<b>R6,095,497.58</b>	<b>R217,456,407.69</b>	<b>R25,612,734.27</b>	
Stormwater	Important	R183,215,318.38	R108,736,754.03	R133,308,809.63	
	<b>Total</b>	<b>R183,215,318.38</b>	<b>R108,736,754.03</b>	<b>R133,308,809.63</b>	
Water	Important	R4,686,583.22	R60,697,506.03	R419,968,095.51	
	<b>Total</b>	<b>R4,686,583.22</b>	<b>R60,697,506.03</b>	<b>R419,968,095.51</b>	

## 5.6 Infrastructure Replacement and Renewal Cost



## 5.7 GRAP 17

Home > MIPMISReports > GRAP 17

Report Level:  Province:

District:  Organisation:

Sector:

Report Date: 2017-05-01


**GRAP 17**

**Municipal Report**

Eastern Cape

**Buffalo City Metropolitan Municipality**

**Buffalo City Metropolitan Municipality**



A promise to assist municipalities in managing infrastructure efficiently

Number	Description	Serial Number	Purchase Price	Acquisition Date	Estimated Useful Life	CRC	DRC	Condition	Custodian	Location
78160	Switchgear Equipment NAVADA	Unknown	R390899.70	1905-03-16	45	R390899.70	R17373.32	Good	Unknown	-32.999432 S, 27.906665 E
76471	Transformer Kiosks MDANTSANE	Unknown	R140729.85	1905-03-16	45	R140729.85	R40655.29	Fair	Unknown	-32.944762 S, 27.768825 E
76597	Transformer Kiosks MDANTSANE	Unknown	R140729.85	1905-03-16	45	R140729.85	R82874.24	Good	Unknown	-32.938944 S, 27.776951 E
77695	Switchgear Equipment DOLPHIN ENGINEERING	Unknown	R390900.15	1905-03-16	45	R390900.15	R69493.36	Fair	Unknown	-33.012958 S, 27.899439 E
71837	Electricity Supply & Reticulation CHISELHURST / AMALINDA	Unknown	R74136.75	1905-03-16	20	R127821.99	R61354.56	Fair	Unknown	Not Available
76166	Transformer Kiosks FCU	Unknown	R218909.70	1905-03-16	45	R218909.70	R0.00	Fair	Unknown	-33.020901 S, 27.902435 E
72608	Electricity Supply & Reticulation AMALINDA / SUMMERPRIDE	Unknown	R18826.54	1905-03-16	20	R125510.29	R6275.51	Fair	Unknown	Not Available
INF_ELE_SUB24876__38	Substations	EA_MS_QV04019	R161408.00	1905-03-16	45	R161408.00	R161180.83	Very good	Unknown	-32.998400 S, 27.900600 E

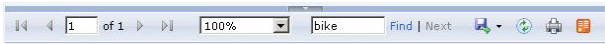
## 6 Understanding of MIPMIS report and use

MIPMIS provides a Viewer that is used to display reports on demand as they are requested from the MIPMIS server. It includes a report toolbar, a parameter section, a credentials section, and a document map. The report toolbar includes features you can use to work with your report,



including export options so that you can view your report in formats other than HTML. The parameter section and document map appear only when you open reports that are configured to use parameters and a document map control.

### 6.1.1 Report Toolbar



The report toolbar provides page navigation, zoom, refresh, search, export, print, and data feed functionality for reports.

Print functionality is optional. When it is available, a Printer icon appears on the report toolbar. Clicking the Printer icon opens a Print dialog box so that you can select from the printers that are configured for your computer.



**Page navigation controls** - Open the first or last page of a report, scroll through a report page by page, and open a specific page in a report. To view a specific page, type the page number and press ENTER

**Page display controls** - Enlarge or reduce the size of the report page. In addition to percentage-based changes, you can select **Page Width** to fit the horizontal length of a report page in the browser window, or **Whole Page** to fit the vertical length of a report in the browser window. A **Zoom** option is supported by Microsoft Internet Explorer 5.5 and later.



**Search field** - Search for content in the report by typing a word or phrase that you want to find (the maximum value length is 256 characters). The search is case-insensitive and starts at the page or section that is currently selected. Only visible content is included in a search operation. To search for subsequent occurrences of the same value, click **Next**.



**Export formats** - Open a new browser window and render the report in the selected format. The formats that are available are determined by the rendering extensions that are installed on the report server. TIFF is recommended for printing. Click **Export** to view the report in the selected format.



**Document map icon** - Show or hide the document map pane in a report that includes a document map. A document map is a report navigation control similar to the navigation pane on a Web site. You can click on items in the document map to navigate to a specific group, page, or sub-report.



**Printer icon** - Open a Print dialog box so that you can specify print options and print a report. On first use, clicking this icon prompts you to download the print control.



**Report refresh icon** - Refresh the report. Data for live reports are refreshed. Cached reports are reloaded from where they are stored.

### 6.1.2 Parameters

Parameters are values that are used to select specific data (specifically, they are used to complete a query that selects the data for your report, or to filter the result set). Parameters that are commonly used in reports include dates, names, and IDs. When you specify a value for a parameter, the report contains only the data that matches the value; for example, employee data based on an Employee ID parameter. Parameters correspond to fields on the report. After you specify a parameter, click **View Report** to get the data.

The report author defines the parameter values that are valid for each report. A report administrator can also set parameter values. To find out which parameter values are valid for your report, ask your report designer or administrator.

### 6.1.3 Credentials

Credentials are user name and password values that grant access to a data source. After you specify your credentials, click **View Report** to get the data. If a report requires you to log on, the data that you are authorized to see might differ from the data that another user sees. Consequently, two users can run the same report and get different results. In addition, some reports contain hidden areas that are revealed based on user logon credentials or selections made in the report itself. Hidden areas in the report are excluded from search operations, producing different search results than when all parts of the report are visible.

## 7 Bibliography

NT. (2012). Accounting Guideline - Property, Plant and Equipment - GRAP 17.

CIDB. (2015). MAINTENANCE MANAGEMENT STANDARD for immovable assets under the custodianship of National and Provincial Departments of Works.

NT. (n.d.). LOCAL GOVERNMENT CAPITAL ASSET MANAGEMENT GUIDELINE.

DPLG. (2009). Guidelines for Infrastructure Asset Management in Local Government .

Draft



**Municipal Infrastructure Support Agent (MISA)**  
Cooperative Governance & Traditional Affairs (CoGTA)

## MIPMIS Nerve Centre



☎ Phone: +27 12 848 5301/+27 12 848 5356

✉ Email: [mipmis@misa.gov.za](mailto:mipmis@misa.gov.za)



MUNICIPAL ACTION NETWORK