



KAAP AGULHAS MUNISIPALITEIT  
CAPE AGULHAS MUNICIPALITY  
U MASIPALA WASECAPE AGULHAS

# **CAPE AGULHAS MUNICIPALITY**

## **MAINTENANCE MANAGEMENT POLICY**

**MARCH 2020**

**POLICY GOVERNANCE**

<b>Policy Title</b>	<b>MAINTENANCE MANAGEMENT POLICY</b>	
<b>Policy Version</b>	<b>V1.01</b>	
<b>Role &amp; Process</b>	<b>Responsible Individual</b>	<b>Responsibility Accepted Signature</b>
<b>Director: Infrastructure Services</b>	<b>Abdul Aziz Jacobs</b>	
Policy Custodian		
Policy Author		
LLF Consultation Date		
LLF Consultation Reference		
Council Approval Date		
Council Approval Reference		
<b>MUNICIPAL MANAGER</b>	<b>Dean O'Neill</b>	
Policy Approved		
Policy Inception Date		
Pre – implementation Checklist Completed		
Policy Maintenance		
Review Cycle Period		
Review Start Date		
Review Completion Date		
Legislative References		
Policy Review “Triggers”		
Comments		

## Table of Contents

1. OBJECTIVE.....	4
2. PURPOSE.....	4
3. ABBREVIATIONS.....	4
4. DEFINITIONS.....	5
5. STATUTORY AND REGULATORY FRAMEWORK .....	6
6. COMPILATION OF MAINTENANCE MANAGEMENT PLANS.....	6
7. UNDERTAKE ASSET MAINTENANCE OPERATIONAL PLANNING .....	7
8. PREPARATION OF ASSET MAINTENANCE BUDGETS .....	8
9. GENERAL.....	9
10. ESTABLISHMENT OF ASSET MAINTENANCE SYSTEMS.....	10
11. ESTABLISHMENT OF ASSET MAINTENANCE PERFORMANCE INDICATORS AND REPORTING MECHANISMS .....	10

DRAFT

## 1. OBJECTIVE

- 1.1. To ensure the proper maintenance of the assets of the Municipality as captured in the Asset Register are executed.
- 1.2. To benchmark the maintenance management approach of the Municipality in the relevant Government guidelines.
- 1.3. The policy shall apply to the on-going maintenance of assets,
- 1.4. Alignment with the international best practice Asset Management Standard ISO55000/1/2.

## 2. PURPOSE

This policy describes the maintenance responsibility for facilities, assets and infrastructure when maintenance is required and how it is performed. It also defines the terms used, describes the decision making process governing the assignment of maintenance priorities, the selection of cost analysis processes, and quality assurance.

## 3. ABBREVIATIONS

Term	Description
CIDMS	Cities Infrastructure Delivery and Management System
CMMS	Computerised Maintenance Management System
DPLG	Department of Provincial & Local Government
IIMM	International Infrastructure Management Manual (2006)
KPI	Key Performance Indicator
MFMA	Municipal Finance Management Act
NIMS	National Infrastructure Maintenance Strategy
O&M	Operation and Maintenance

## 4. DEFINITIONS

Term	Description
Asset Life Cycle	The cycle of activities that an asset goes through including planning, design, initial acquisition and/or construction, cycles of operation and maintenance and capital renewal, and finally disposal.
Asset Management System	A management system whose function it is to establish the asset management policy and objectives, as well as processes and organisational arrangements inclusive of structure, roles and responsibilities to achieve asset management objectives.
Availability	The proportion of total time that an asset is capable of performing its intended functions.
Benchmarking	The process of comparing the performance of with other municipalities, as well as leading practice in order to identify performance gaps.
Condition Assessment Survey	Maintenance performed because of the condition of an asset. Condition based maintenance is a type of planned maintenance activity. Periodic inspections used to determine their current condition and any estimated cost to correct deficiencies.
Corrective Maintenance	Maintenance actions performed because of failure of an asset including the modification or re-design of the asset.
Deferred Maintenance	<ol style="list-style-type: none"> <li>1. Any scheduled maintenance that is not performed on schedule, unless it is determined from the material condition of the assets that the scheduled maintenance does not have to be performed until the next scheduled maintenance.</li> <li>2. Any non – scheduled maintenance that would render the property or assets non – operational and is not scheduled and performed in a reasonable time. In either case, circumstances such as, but not limited to, non – availability of parts or funding would be considered reasons for reporting the maintenance as deferred maintenance activities that were not carried out.</li> </ol>
Maintenance	Maintenance is the act of keeping assets in acceptable condition or at a prescribed level of performance. It includes preventive maintenance, other types of maintenance, and replacement of parts of components and other activities needed to preserve the asset so that it continues to provide acceptable services and achieves its expected life. Maintenance excludes activities aimed at expanding the capacity of an asset or otherwise upgrading it to serve needs different from or significantly greater than, those originally intended.
Maintenance Plan	Information, policies and procedures for the optimal maintenance of an asset or group of assets.
Maintenance Standards	The standards set for the maintenance service, usually contained in preventative maintenance schedules, operation and maintenance manuals, estimating criteria, statutory regulations and mandatory requirements, in accordance with the maintenance outcomes.
Operation	The process of utilizing an asset, which will consume resources such as labour, energy, chemicals and materials.

Planned Maintenance	Planned maintenance falls into three categories: 1. Periodic – Activities necessary to ensure the reliability or to sustain the design life of an asset. This includes the regular services required for certain assets. 2. Predictive – Condition monitoring activities used to predict failure. 3. Preventative – Maintenance that can be initiated without routine or continuous checking and is not condition-based.
Maintenance/Refurbishment	Actions that shall restore or maintain the originally assessed future economic benefits or service potential that an entity can expect from an asset and is necessary for the planned life to be achieved.
Reliability Centered Maintenance	A structured process to determine the maintenance strategies required for an asset to ensure that it continues to fulfil its intended functions within the current operating context.
Routine Maintenance	Day to day operational activities to keep the asset operating and which form part of the annual operating budget.
Run to Failure	A maintenance strategy where no routine maintenance is performed and the asset is used until it fails.
Unplanned Maintenance	Corrective or reactive work required in the short-term to restore an asset to a working condition.

## 5. STATUTORY AND REGULATORY FRAMEWORK

5.1 The following documents are relevant and are used as key inputs for this policy:

- (a) MFMA Local Government Capital Asset Management Guideline published by the National Treasury Department (2008);
- (b) DPLG “Guidelines for Infrastructure Asset Management in Local Government” (2007);
- (c) NIMS, approved by the National Cabinet (2006);
- (d) International Infrastructure Management Manual co-authored by Institute of Municipal Engineering of Southern Africa IMESA (2006);
- (e) CIDMS developed by National Treasury (2015).

## 6. COMPILATION OF MAINTENANCE MANAGEMENT PLANS

6.1 In terms of the Maintenance Management Policy, maintenance management plans shall be compiled for all services included under the policy. The Maintenance Management Plans shall address the following five aspects:

- (a) Establishment of asset maintenance operational plans;
- (b) Preparation of asset maintenance budgets;
- (c) Establishment of an asset maintenance organization;
- (d) Establishment of asset maintenance systems; and
- (e) Establishment of asset maintenance performance norms and standards and reporting mechanisms.

6.2 Sections 7 to 11 of this policy, provides details of the contents of the Maintenance Management Plans for each of the five aspects.

## 7. UNDERTAKE ASSET MAINTENANCE OPERATIONAL PLANNING

7.1 Asset maintenance operational planning shall be undertaken for all assets covered by this Policy with due consideration of the following:

- (a) Definition of maintenance outcomes;
- (b) Conducting a maintenance analysis for all assets, including:
  - 1. Identification of all assets;
  - 2. Identification of critical assets based upon the risk of failure to the municipality;
  - 3. Analysing the maintenance options and determining the preferred option in terms of the lowest life-cycle cost.
- (c) Development and implementation of a maintenance operational plan;
- (d) Analysis of asset performance.

7.2 Maintenance outcomes

- (a) Maintenance outcomes shall be agreed and documented for every service.
- (b) The maintenance outcomes shall be documented for each of the following categories:
  - 1. Statutory compliance, e.g. adherence with outflow quality requirements;
  - 2. Availability of the service, e.g. time taken to restore service after a disruption;
  - 3. Reliability of the service, e.g. the number of times within a period that consumers do not have access to the service;
  - 4. Cost of maintenance; and
  - 5. Risk management.

7.3 Maintenance analysis

- (a) Identification of assets
  - 1. The existing asset register shall be used as the basis for the identification of all assets, and care shall be taken to update the register to reflect any new assets created, retired or changed in any way.
  - 2. Assets shall be grouped into categories for which the maintenance actions are similar as guided in the asset hierarchy tree in the CIDMS document.
- (b) Identification of critical assets based upon the risk of failure to the municipality
  - 1. Assets shall be evaluated to determine the consequence of failure with regards to the following impacts:
    - i. Environmental impact;
    - ii. Public health & safety impact;
    - iii. Financial impact; and
    - iv. Service delivery impact.
  - 2. The impact with regards to each of the criteria shall be rated using a 5 point scale.
  - 3. The individual ratings shall be combined into a combined rating, which shall be used to identify the relative criticality of maintaining specific assets.

- (c) Analysing the maintenance options and determining the preferred option in terms of the lowest life-cycle cost.
  - 1. A maintenance strategy shall be selected for each of the asset groups defined in 7.3 (a) 2.

#### 7.4 Maintenance operational plan development

- (a) The maintenance activities for each asset group defined shall be combined in an activity maintenance plan that shall list the following:
  - 1. Description of the asset in sufficient detail for the accurate identification of the asset;
  - 2. Description of the type of activity to be performed, e.g. testing, inspection, oil change etc.;
  - 3. The criticality of the activity; and
  - 4. The base period of the activity, e.g. monthly, annually etc.
- (b) Maintenance activities recorded in existing documents shall be incorporated into the activity list. These include:
  - 1. Activities recorded in current checklists and operating manuals; and others as identified.

#### 7.5 Analysis of asset performance.

- (a) Tools shall be used to monitor the performance of assets, where it is appropriate for such tools to be employed. These could include:
  - 1. Root Cause Analysis tools to assess the underlying reasons for asset failure;
  - 2. Undertaking Reliability Centered Maintenance assessments; and
  - 3. Others as identified.

## **8. PREPARATION OF ASSET MAINTENANCE BUDGETS**

- 8.1 The costs associated with the maintenance activities in the Maintenance Activity Plan shall be calculated.
- 8.2 The individual maintenance activity costs shall be summarised per department and used to inform the required maintenance budgets.
- 8.3 Where available maintenance budgets are inadequate, the criticality of the individual activities shall be used to prioritise the maintenance actions to be performed.
- 8.4 Maintenance activities that cannot be funded shall be classified as deferred maintenance and recorded as such.
- 8.5 Expenditure on maintenance shall be recorded against the assets, facilities and cost centres where the cost is incurred.

## 9. GENERAL

9.1 The maintenance activity schedule shall be used to inform the maintenance organisational structure required to perform the maintenance work to be executed.

9.2 The maintenance activity schedule shall also be used as the basis to determine the tools required to perform the required maintenance.

9.3 The outsourcing or use of alternative delivery mechanisms to perform tasks, or groups of maintenance tasks, shall be considered as an alternative.

### 9.4 New Assets

If assets are new to the inventory, manufacturer's recommendations in respect of maintenance should be used. However, if similar assets exist, an option between experience based on historical maintenance information and manufacturers suggestions could be used, if it does not impact or influence on the manufacturers product warranty conditions.

### 9.5 Inventory

At the time of procurement of a new asset requiring maintenance, consumable and manufacturer recommended spares in sufficient quantities to initially support the assets shall be ordered. Unless the asset already exists in the inventory, an adequate supply of spares shall be procured by the purchasing department. If the asset does exist in inventory, then the asset spare parts inventory should be reviewed and spares ordered as deemed necessary.

### 9.6 Condition assessment surveys and life cycle costing

When an asset, having an anticipated replacement cost of more than R25 000 approaches the end of its life-cycle, or is at a state that major maintenance or renovation is required, or required maintenance may be delayed, a condition assessment survey or a life cycle analyses shall be performed. The result of the survey of analyses should be compared to the replacement costs and expected future maintenance costs. If the result of the survey or analysis reflects a net saving of one alternative (maintenance or replacement) over another, then the lower cost alternative should be recommended.

### 9.7 Deferred maintenance

Deferred maintenance results in higher long – term costs. This higher cost is due to the repair cost being higher than if regular maintenance had been performed at appropriate points in the life cycle of assets. In addition, when maintenance is deferred, the life cycle of the assets is decreased and complete reconstruction may be necessary at an earlier date resulting in additional costs. As such, performing maintenance shall avoid deferred maintenance.

## **10. ESTABLISHMENT OF ASSET MAINTENANCE SYSTEMS**

- 10.1 The maintenance activities shall be scheduled and controlled using an appropriate system(s), such as a CMMS.
- 10.2 The maintenance system(s) shall include the following functionality:
- (a) Recording of progress against activities and activities closed or re-scheduled;
  - (b) Recording of maintenance costs, time and other resources consumed against assets and facilities;
  - (c) Include links to the financial management system so that reconciliation of maintenance budgets can be done;
  - (d) Built-in maintenance analysis tools or ability to export information to other applications, to enable maintenance analyses to be undertaken; and
  - (e) Analysis of asset performance to be used as an input to maintenance planning.
- 10.3 A link shall be established between the Computerised Maintenance Management System and the Customer Complaints System (Collaborator), which is one of the main originating points for unplanned maintenance activities.
- 10.4 Where practical, assets should be captured on a Geographical Information System (GIS), where assets are geospatially depicted, to improve the efficiency of the maintenance conducted.

## **11. ESTABLISHMENT OF ASSET MAINTENANCE PERFORMANCE INDICATORS AND REPORTING MECHANISMS**

- 11.1 Appropriate Key Performance Indicators (KPI's) shall be identified and used to monitor the maintenance performance of assets.
- 11.2 The maintenance management KPI's shall be managed in the Service Delivery & Budget Implementation Plan and Performance Management System, where possible.

DRAFT