Mandeni Local Municipality

ASSET MANAGEMENT PLAN

SECTOR:	**ROADS AND STORMWATER**
PERIOD:	**2019-2028**
DATE:	**02 AUGUST 2019**
VERSION NUMBER:	**0.8**
PREPARED BY:	**ADHNAAN BHABHA**

edtea
Department: Economic Development, Tourism and Environmental Affairs
PROVINCE OF KWAZULU-NATAL

Schweizerische Eidgenossenschaft
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Vuthela
ILEMBE LED PROGRAMME

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APPROVED:

02/08/2019

Adhnaan Bhabha BEng (Civil) CWEP

Date

Asset Management Engineer

02/08/2019

Nonjabulo Ngwane

Date

(Roads and Stormwater)

ACRONYMS

AFS	**Annual financial statement**
AM	**Asset management**
AMIS	**Asset management information system**
AMP	**Asset management plan**
AR	**Asset register**
CAPEX	**Capital expenditure**
CBD	**Central business district**
CRC	**Current replacement cost**
DRC	**Depreciated replacement cost**
EPWP	**Extended public works programme**
EUL	**Expected useful life**
FMECA	**Failure modes, effects and criticality analysis**
GDS	**Growth and development strategy**
GIS	**Geographical information system**
GRAP	**Generally, recognized accounting practice**
HR	**Human resources**
IAM	**Infrastructure asset management**
IAMP	**Infrastructure asset management plan (also see AMP)**
ICT	**Information and communication technology**
IDP	**Integrated development plan**
IIF	**Infrastructure investment framework**
IIMM	**international Infrastructure Management Manual**
ISO	**International Standards Organisation**
IT	**Information technology**
km	**Kilometre**
km2	**Square kilometre**
LOS	**Level of service**
m	**Metre**
MFMA	**Municipal Finance Management Act**

MIG	**Municipal infrastructure grant**
Mill	**Million**
MIS	**Management information system**
MLM	**Mandeni Local Municipality**
MSA	**Management Services Act**
mSCOA	**Municipal Standard Chart of Accounts**
MTREF	**Medium term revenue and expenditure framework**
OHS	**Occupational health and safety**
O&M	**Operations and maintenance**
OPEX	**Operational expenditure**
PPE	**Property, plant and equipment**
R	**Rand**
RUL	**Remaining useful life**
SANS	**South African National Standard**
SCM	**Supply chain management**
SDBIP	**Service delivery and budget implementation plan**
SDF	**Spatial development framework**
SLA	**Service level agreement**
SOS	**Standards of service**
USDG	**Urban Settlements Development Grant**

SUMMARY

This report indicates the outcomes of the roads and stormwater Asset Management Plan (AMP) conducted as part of the Vuthela-Ilembe LED Programme. The Asset Management Plan (AMP) will enable the municipality to have an overview of its infrastructure assets' worth, condition and suitability to meet current and future service requirements based on the assets' life cycle. The AMP will enable the development of a strategy to support the optimal, functional management of existing assets whilst considering the financial and technical decision-making aspects for future service requirements

The AMP will assist in project identification and selection, thereby integrating planning and development needs to ensure efficient and effective budgeting and implementation of projects. It will aid the municipality in project prioritisation when considering available budget, service levels and required service levels.

The AMP should further be aligned to the available budget and revenue of the municipality and the development objectives of the municipality.

INTRODUCTION AND APPROACH

This report is the Close-Out Report for the contract to deliver the following documentation - Portion A: asset management plans & Portion B: scoping study for an asset management system for iLembe District and KwaDukuza, Mandeni Local Municipalities as set out in the Scope of Work (SoW).

The project forms part of the Vuthela LED Programme which was officially launched on 29 November 2017 by the iLembe District Municipality, together with the Switzerland State Secretariat for Economic Affairs (SECO) and the KwaZulu-Natal Department of Economic Development, Tourism and Environmental Affairs (KZN DETEA).

The Vuthela iLembe LED Programme footprint comprises the iLembe District Municipality (IDM) and its local municipalities of KwaDukuza (KDM), Mandeni (MLM), Ndwedwe and Maphumulo. The primary purpose of the programme is improvement of the economic future of the iLembe District residents through sustainable economic growth of the local economy and the creation of higher, better and more inclusive employment and income generating opportunities. The programme comprises five components, namely:

- Public Financial Management Component.
- Municipal Infrastructure Component.
- Private Sector Development Component.
- Building Inclusive Growth Component.
- Partnership and Coordination Component.

This contract falls under the Municipal Infrastructure Component (MIC). The MIC focuses on the improvement and development of municipal infrastructure and services and has three sub-components:

- Reduced infrastructure constraints (improved scope and quality of basic infrastructure
- services);
- Increased planning capacity and financing strategies for an integrated and systematic expansion of (urban) infrastructure, as a basis for sustainable development of regional centres; and
- Enhanced planning and management of key infrastructure sectors.

The initial project was conducted as part of the Inception Phase of the Vuthela LED Programme, which focussed on the scoping, preparation and assessment of implementation-readiness for support projects during the Implementation Phase.

PROJECT CONSULTANT AND SUB-CONSULTANTS / CONTRACTORS

The project consultant was IMQS Software (Pty) Ltd and the Sub-Contractor was Amaqhawe Asset Management Solution. The workshare percentage split was 90/10 respectively.

OBJECTIVES OF THE ASSIGNMENT AS PER THE TOR

The appointment is for two particular assignments, consisting of Portion A for the development of asset management plans and Portion B for the scoping of an asset management system. Both assignments relate to the particular infrastructure functions of the IDM, KDM and MLM.

OBJECTIVES OF THE ASSET MANAGEMENT PLAN (AMP)

The Asset Management Plan (AMP) should enable the municipality to have an overview of its infrastructure assets' worth, condition and suitability to meet current and future service requirements based on the assets' life cycle. The AMP should enable the development of a strategy to support the optimal, functional management of existing assets whilst considering the financial and technical decision-making aspects for future service requirements.

The AMP should assist in project identification and selection, thereby integrating planning and development needs to ensure efficient and effective budgeting and implementation of projects. It should aid project prioritisation when considering available budget, service levels and required service levels.

The AMP should further be aligned to the available budget and revenue of the municipality and the development objectives of the municipality.

OBJECTIVES OF THE ASSET MANAGEMENT SYSTEM

References in this document to an Asset Management System (AMS), are considered as reference to each participating municipality's AMS. It was assumed at the time of writing the scope of work for this assignment, that there will be separate, but similar systems planned, designed and implemented in each municipality. Cognisance should however be given to the potential of information sharing, across platforms and between municipalities.

The AMS should enable the municipality to have access to detailed information on infrastructure assets' worth, condition and suitability to meet current and future service requirements based on the assets' life cycle. This means the incorporation or maintenance of the asset register, for financial and technical compliance and planning.

The AMS should enable the development of an Asset Management Plan (AMP) and strategy to support the optimal, functional management of existing assets whilst considering the financial and technical decision-making items for future services.

The AMS, through the AMP, should assist with project identification and prioritisation when considering available budget, existing service levels and required service levels. The AMS should further allow for integration with the financial management and planning of the municipality.

MAIN PROJECT COMPONENTS OR DELIVERABLES

The main deliverables as extracted on the tender document page 30 are as follows:

- Inception Report.
- Ilembe District Municipality AMP, three hard copies, one electronic copy.
- Kwadukuza Local Municipality AMP, three hard copies, one electronic copy.
- Mandeni Local Municipality AMP, three hard copies, one electronic copy.
- Workshop per municipality, to discuss the financial plan and prioritisation, for inclusion in the municipal budget.
- Workshop per municipality (IDM, KDM, MLM) to present and discuss the final AMP and results of the scoping for an asset management system.
- Scoping Report, for the design and implementation of an asset management system (applies to three municipalities
- Attendance of tri- weekly progress meetings and provision of meeting notes.
- Submission of weekly progress reports.
- Close-out report.
- Presentation to the Vuthela Programme PSC.

CONTRACTUAL DATES

IMQS Software (Pty) Ltd was officially appointed on the 08th August 2018. Project duration was for 5 months.

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E EXECUTIVE SUMMARY

Summary of the main aspects of the plan: scope and objectives. strategic context and status. key challenges, risks and opportunities. and proposed short, medium, and long-term tactical responses.

1	**PLAN OBJECTIVES**	• To plan effective and efficient infrastructure-based service delivery for the Roads and Stormwater Department in Mandeni Local Municipality (MLM), utilising available resources. It considers tactics for the management of the municipality's infrastructure assets, as well as the establishment of the required management practices, over a period of 10 years.
2	**OPERATIONAL CONTEXT**	
2.1	Municipal mandate	• The key mandate of local government is to provide appropriate levels of service at least in line with national minimum standards, within the resources available. • MLM's mandate as a municipality includes the management of municipal roads and stormwater services in their area of jurisdiction. In addition to the municipal roads, there are other roads in the municipal area that are under the jurisdiction of others , such as the N2 National Road, the Provincial Main Roads, and District roads.

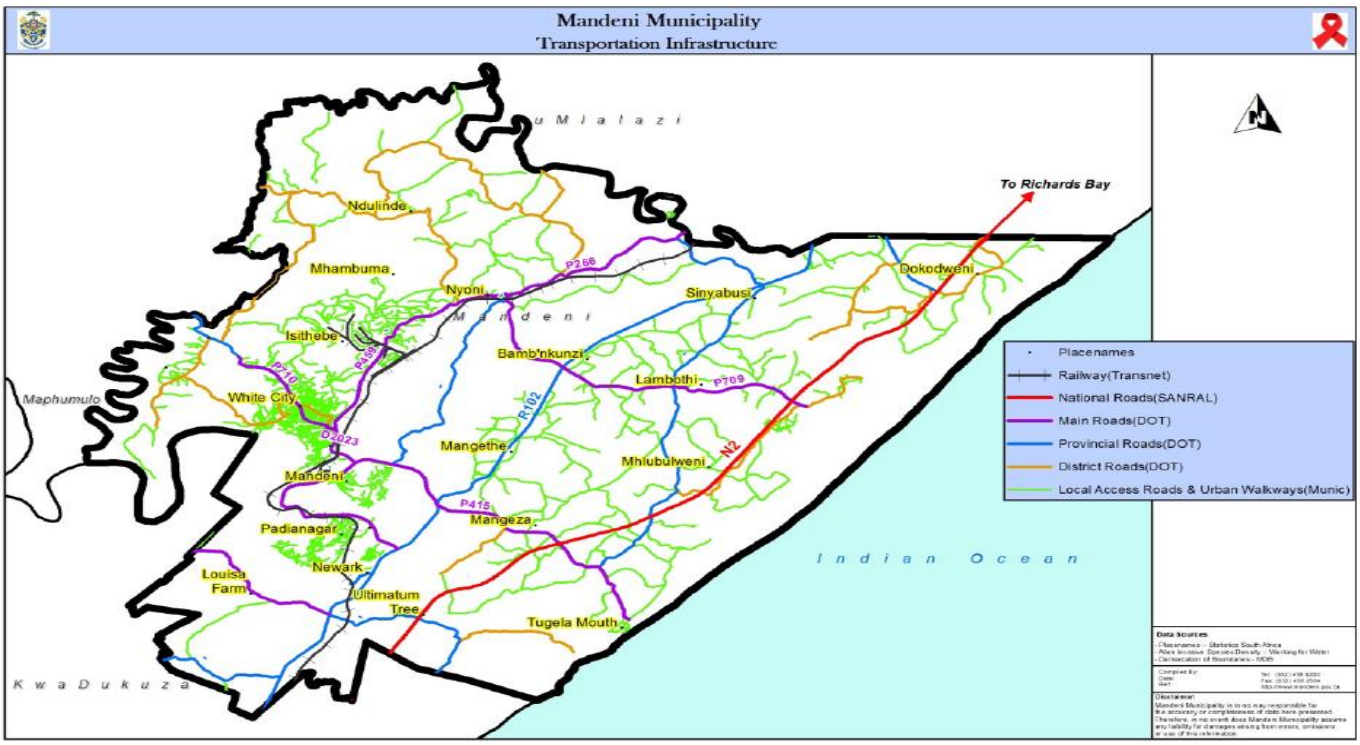

Figure 0.1: Overview of the Roads Network in MLM

2.2	Asset scope	• The roads and stormwater asset portfolio comprises:
		  ○ Bridges and river crossings;
		  ○ Roads (gravel roads and paved)
		  ○ Road furniture (sidewalks, road signs and guardrails); and
		  ○ Stormwater infrastructure.
		• MLM has approximately 700km of roads network of which 100km is tarred.
		• **Figure 0.2** below shows that 14,2% of the asset composition (tarred roads) make up 62% of the asset portfolio value, illustrative of the severe limits of affordability on road on the road standards within MLM.

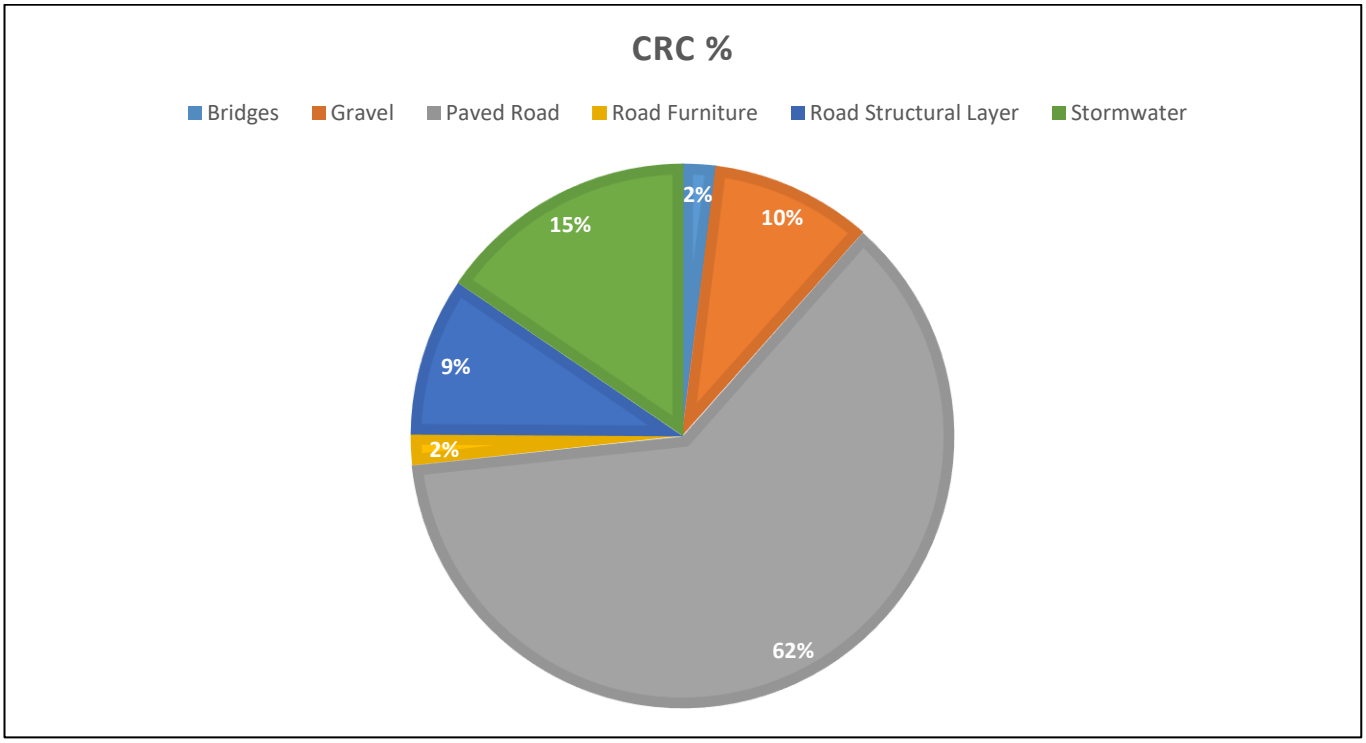

Figure 0.2: Distribution of the roads and stormwater portfolios asset replacement value

2.3	Developmental context of the municipality and key statistics	• MLM has an urban population of 21% and a rural population of 79%. • The district covers an area of 545 km² and has a total population of approximately 148 636 people (46 449 households) and a population density of 272.7 people per km². Its strategic location is acknowledged in the Provincial Spatial Framework which has identified Mandeni/Isithebe as growth nodes on the north coast corridor. • The existing settlement structure is substantially influenced by prevailing topographic conditions, physical access and access to land - consequently, a series of settlement bands developed parallel to the coast. The prevailing settlement structure is also influenced by the existence of major commercial agricultural activities in the east, the existence of a series of east–west linkages and the opportunities of the coast. Another contributing factor to the settlement

		pattern is land tenure and customary allocation of households by the Traditional Authorities through Amakhosi.
2.4	Stakeholders	• Community - users of buses, mini bus taxis and private vehicles, cyclists and pedestrians. • Business sector - users of roads for transportation of goods which plays a pivotal role in the local economy. • Government departments contribute in decision making as the drivers of provincial and national initiatives, and often serve as funders of roads projects in support of these initiatives. • Farmers use roads for transportation of goods which impact on the local economy. • Finance and planning office of the municipality. • Department of Transport (DoT), Provincial Roads Department, and Ilembe District Municipality (IDM).
2.5	Plan maturity (and implications on its use)	• MLM, a class B municipality, is developing its physical asset management system, from a low base, as is the case with many municipalities. This initial asset management plan (AMP) is a high-level document that is intended to help steer the municipality towards implementing quality asset management and asset management planning (to support improved service delivery). Due to this being the first AMP, and the fact that it is based on limited existing data, it is regarded as rudimentary, though a platform for improved plans in the future. • The main input documents include the Integrated Development Plan (IDP), the annual performance reports as well as the 2018 asset register (AR). The data that has been used in compiling the AMP has been graded in terms of data confidence in the respective chapters of this report.
3	**CURRENT STATUS**	
3.1	Infrastructure status	• **Table 0.1** indicates the status of the assets according to the current financial asset register. • Based on the financial asset register, the portfolio depreciates at R23 million per annum (ie 7% of the portfolio is consumed annually – based on the asset register values). • The current replacement cost (CRC) is estimated to be R1.1 billion. • Overall the portfolio, according to existing available data in the register, is in good health. The assets range from fair to very good condition depending on the asset group. Acuracy and completeness of the data was not verified.The gravel roads are in the worst condition of the asset groups, equivalent to “Fair” Portfolio Health, and this asset group makes up the bulk of the asset extent.

Table 0.1: Condition Grade per Asset Group

ASSET GROUP	COST (Rmil)	CARRYING VALUE	EXTENT	EXTENT UNIT	DEPRECIATION (Rmil)	CV/COST	CONDITION
Bridges	6,59	4,72	26	No.	0,27	72%	Very Good
Gravel Road	35,93	15,29	600	km	5,35	43%	Fair
Paved Road	231,04	162,09	100	km	13,64	70%	Good
Road Furniture	6,64	4,41	No Data	No Data	0,51	66%	Good
Stormwater	61,15	47,54	No Data	No Data	3,38	78%	Very Good
Grand Total	**341,36**	**234,05**	**726**		**23,15**	**69%**	**Good**

3.2	Spatial structure	• Main urban centres, important nodes and development routes are shown in **Figure 0.3**. A theme of development along the major transport routes is clear, with mixed use nodes identified to promote densification and allow for equity of access to facilities as highlighted in the spatial development framework (SDF). The municipality places a focus on tourism and has highlighted the need to regenerate existing industrial areas.

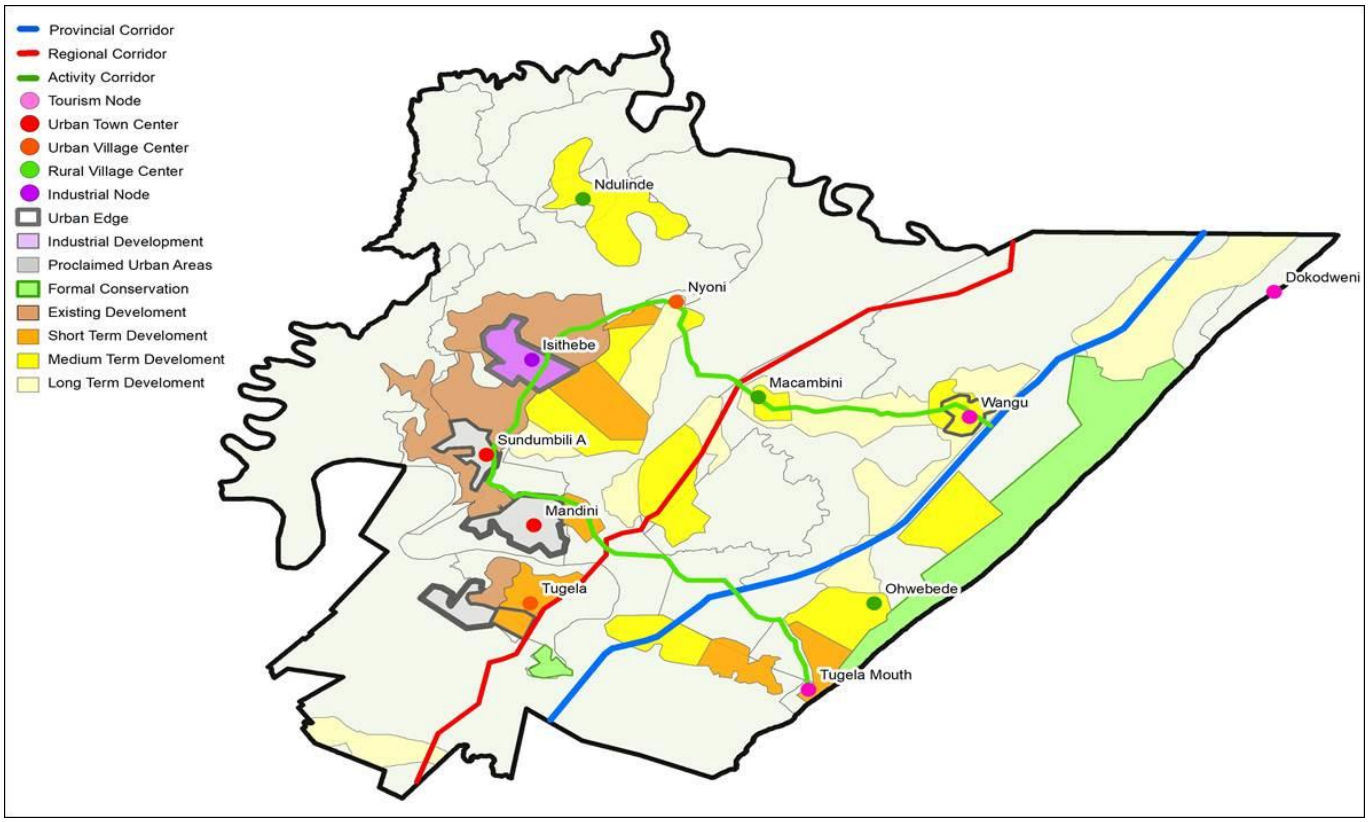

Figure 0.3: Major developments and nodes within Mandeni Local Municipality

3.3	Service delivery operations	• MLM currently owns its own yellow plant and the majority of the minor maintenance is done in house. • MLM has one borrow pit which is reaching its end of life. MLM is in the process of procuring additional borrow pits but are in negotiations with the Traditional Authority to gain access to them. • All major roads projects are contracted to local contractors, and for other works when in house expertise / capacity is not sufficient. Limited maintenance carried out on some assets – though records are limited. • A strategic approach to packaging and scheduling of capital and operational activities needs to be developed and implemented in the sector.
3.4	Levels and standards of service	• MLM provides a range of levels of service to its customers. The current backlog – on the assumed target of paved surfaces- is 600km of roads (gravel roads and tracks) – and applies to 86% of customers. • Whilst MLM's goal is to provide every household with the highest level of service which is level of service 3 (paved roads) there are very significant constraints on available funding. • The focus of addressing the backlog are those areas where the municipality intends to promote growth, the development nodes identified in the SDF. The constraint with providing service is the associated capital budget. • Due to resource constraints the targets are not likely to be achievable in the report period. Priority will be directed to strategic areas (developmental nodes) and strategic routes (major public transport routes), with the remainder of the areas receiving a minimum LOS 2. • The capital cost of eradicating backlogs is estimated to be R2 534 million (1 056 mainly rural households with LOS 0 need to be upgraded to LOS 2 and 3 831 households with LOS 2 need to be upgraded to LOS 3). • Optimisation and prioritisation will be key strategies to manage the life-cycle plan. This can only be tackled effectively with a complete and reasonably accurate vision of the total needs.
3.5	Financial status	• The roads and stormwater sector is a non-income generating portfolio. • The total expenditure for the roads and stormwater sector amounted to R49.8 million in the last financial year (R13.1 million - Repairs and Maintenance and R36.7 million – Capital). • The municipality relies largely on grant funding and has a notable challenge in terms of revenue collection, with the gross debtors' balance increasing yearly. • During 2016/17 the actual expenditure was 64% higher than the budget. A cost containment strategy is being implemented. • The cost coverage ratio indicates that the municipality will find it difficult to meet its monthly fixed operating commitments without collecting additional revenue. • Total bad debts increased by 50% during 2017/18 indicating an affordability challenge for consumers.
3.6	Reported risk exposure	• MLM has a risk management framework in place, and the risk register is reviewed periodically. The top risks and their responses within MLM are:

		○ Poor storm water management - Storm water assessment lists must be compiled, flood prone areas should be monitored, and current infrastructure upgraded. ○ Inability to maintain municipal roads - additional plant and machinery are procured and others outsourced. MLM also needs to keep its Customer Complaints Register and Quarterly Performance Plans up to date.
3.7	Reported performance	• MLM has formal KPIs for the roads and stormwater sector stated in their annual performance report that are aligned with the IDP objectives. • These KPI's are linked to capital projects prioritised in the IDP process. The following are annual KPI's: • 250km of gravel roads to be repaired and maintained. • 40 stormwater catch-pits to be repaired. • 400m of v-drains to be constructed • 8 - 10km of new paved roads with associated stormwater to be constructed.
3.8	Infrastructure management maturity	• MLM, in line with many small municipalities, is coming off a low AM practice base. It has engaged in this initial project with a view to improve its infrastructure management practices. Part of the process is to prepare a practices improvement plan and to prepare initial rudimentary AMPs for its infrastructure (of which this is one).
4	**FUTURE DEMAND**	
4.1	Demand forecast	• MLM is classified as a Quaternary Node and in terms of functionality this node should provide services to the local community and respond to community needs. • Growth for the municipality has been forecast at a rate of 0.28% per annum based on previous census data. The 46 449 households in 2018 are estimated to increase to 47 766 households in 2028 (average growth of 131 households per annum).
4.2	External bulk infrastructure implications	• There are no new major district or provincial roads, or upgrades planned in the municipal area in the forecast period.
4.3	Municipal infrastructure implications	• Over the 10-year planning period, the number of households is expected to increase by 1317, with a commensurate increase in traffic. • The total capital required to provide services to new customers is estimated to be R34 million (whereas and R2 534 million is estimated to be required to address all existing service backlogs in line with the municipality's target level of service). • Densification around developmental nodes can reduce this requirement but will require higher order roads and stormwater infrastructure to adequately deal with higher traffic volumes. • The increased demand will have an impact on the current infrastructure, requiring upgrades (provided for in the estimated budget implications noted above).

		• In addition to the increased demand for the provision of road infrastructure, there will also be an increase in the maintenance needs. The maintenance budget need for the forecast period would equate to approximately R395 million if all the backlogs were to be addressed and expected growth accommodated.
5	**LIFE-CYCLE PLAN**	
5.1	Short and medium-term plan	• The short-term plan comprises those activities that need to be accomplished within a one-year period and can address immediate issues in strategic areas. MLM should focus on providing some level of service to those without any level of service in the short term, those households That only have access to tracks. • The medium-term plan comprises those activities that need to be accomplished within a three-year period. Funds permitting, there is a need to address the major bus and taxi routes during this period as this will benefit a larger customer base and achieve relevant municipal KPI's. • MLM currently applies the budget allocation primarily on maintenance (and capital renewal) activities. • The Human Settlements Department assists in eradicating some of the backlogs through the development of the road and stormwater infrastructure associated with their development initiatives.
5.2	Long term lifecycle plan	• Long term plans are those activities that need to be accomplished after the MTREF period and within the ten-year forecast period. • **Table 0.2** provides an overview of the long-term life cycle needs. It comprises the access backlog, asset renewals, asset upgrades as well as future growth. • As indicated in **Table 0.2** and **Figure 0.4**, for MLM to accomplish all its targets (including addressing the backlog over this period) it would require a very substantial increase in its yearly budget availability and spend- To the extent that this is not affordable, projects need to be prioritized (and, as previously noted, this is best viewed from a perspective of the total needs)..

Table 0.2: Overview of lifecycle needs (Millions)

	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28
Access Backlog	253	253	253	253	253	253	253	253	253	253
Renewals (Existing)	33	38	43	49	55	61	68	75	83	92
Growth	3	3	3	3	3	3	3	3	3	3
Maintenance	16	20	25	30	35	41	47	53	60	68
Total Lifecycle need	306	315	325	335	347	359	372	385	400	416

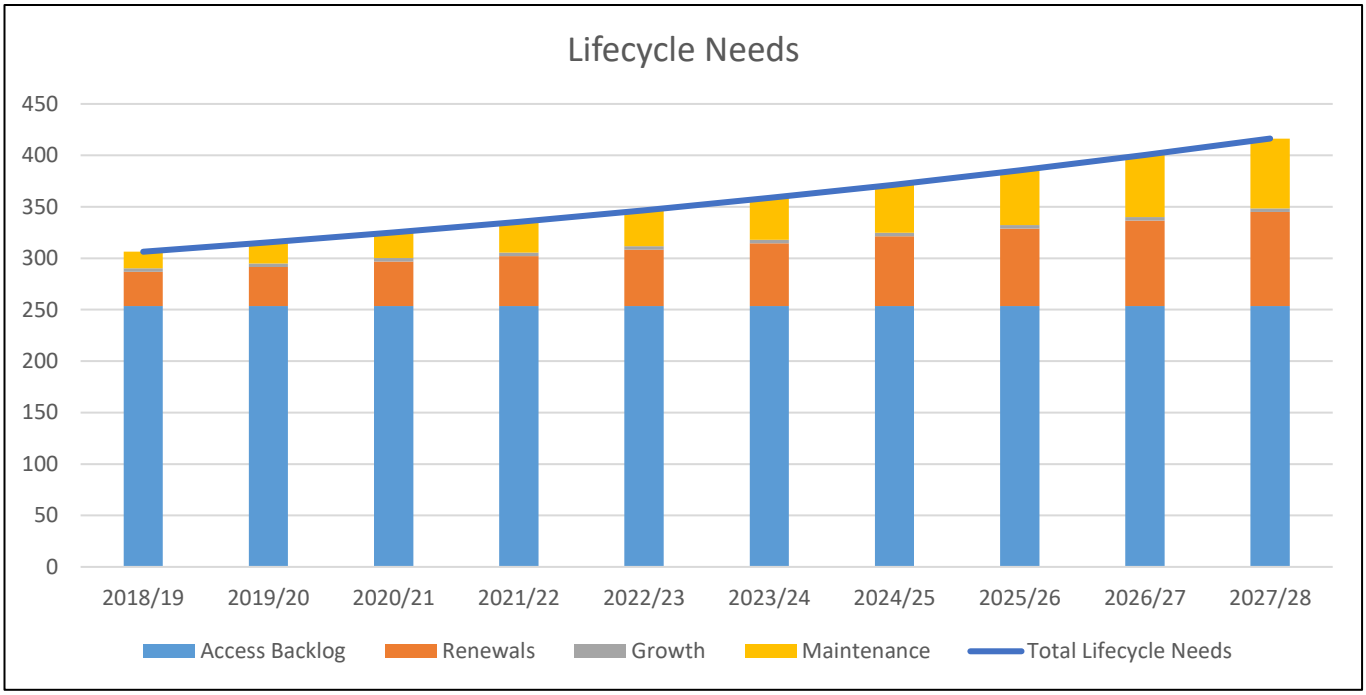

Figure 0.4: Lifecycle needs

6	**FINANCIAL PLAN**	
6.1	Financial health, budget availability, trends, forecast	• The MLM Roads and Stormwater Department is primarily reliant on grant funding. • Overall MLM has a low rate of debt and revenue collection. • Municipal wide operational grants and transfers totaled R148.4 million in the 2017/18 financial year and were forecast to steadily increase to R162.7 million in 2018/19. • MLM does not have any current or planned borrowings. However, it could consider borrowing in the future to increase its budget availability, provided there are demonstrable returns.
6.2	Revenue management status	• The roads and stormwater sector is a non-revenue generating portfolio. • Rates and services revenue accounts for about 26% of the total revenue mix. • In the 2017/18 financial year, revenue from rates and services charges totaled R56.5 million. • MLM was not collecting revenue as billed. It has introduced revenue enhancement strategies and debt collection strategies to increase the revenue streams.
6.3	Cost management	• The total expenditure for the roads and stormwater sector amounted to R49.8 million in the baseline financial year 2018/19 (R13.1 million - Repairs and Maintenance and R36.7 million – Capital). • The current MTREF was prepared with a focus of cost saving. • As part of the process of identifying f cost efficiencies, a business process reengineering project commenced in the 2018/19 financial year to identify alternative practices and procedures, including building in-house capacity for certain activities that are currently being contracted out. The outcome of this

		exercise needs to be factored into the budget cycle and it is envisaged that additional cost savings could be realised.
6.4	Financial management strategy and plan	• The overall financial health of the municipality needs to be improved to improve service delivery. • The internal revenue of the municipality needs to be increased for sustainable operations to take place. • The roads and stormwater infrastructure life cycle plan for the 10-year planning period, including access backlog eradication, would need R2 534 million capital, and, in addition, total capital required for the growth of the new customers of R34 million and total capital for renewals of R 597 million. In view of current budget availability, including external grant support, it is evident that the targets are not close to being achievable in the report period.
7	**ASSET MANAGEMENT PRACTICES**	
7.1	Asset management practice context	• MLM is a Category B municipality, coming off a low asset management practices base, however MLM has demonstrated its commitment to improving its practices by partnering in the implementation of the Vuthela-Ilembe LED project. As part of this project, a practices assessment was carried out and an improvement plan suggested as an output. The assessment found a relatively low level of asset management practice maturity, especially in the field of physical asset management, in the municipality, in line with many municipalities in SA.
7.2	Current and target performance	• Current practice is assessed to be predominantly at the "awareness" level. The municipality aims to move towards a level of "competence" as shown in **Figure 0.5.** The proposed 3-year phased approach will be dependent on funding availability.

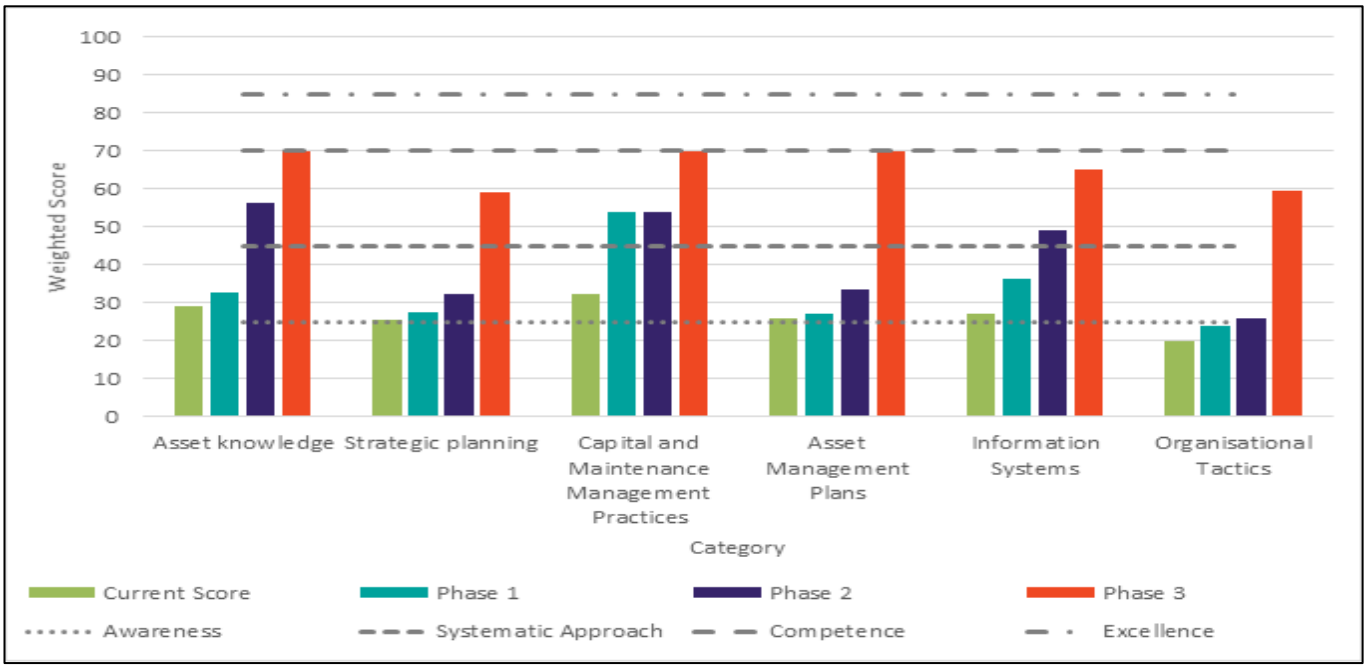

Figure 0.5: Overview of the proposed improvement in AM Practice

7.3	Priority improvement needs	• The improvement plan prioritises an improvement of the maintenance management process, including the adoption of a Computerised Maintenance Management System (CMMS) with spatial reporting capability to ensure accuracy and completeness of data) to achieve better control of activities and improve records to inform lifecycle planning and efficiency improvements. This is envisaged to be further enhanced with systems (and improved data) for more effective control on projects (and associated reporting and decision-making).
8	**CONCLUSIONS AND RECOMMENDATIONS**	
8.1	Objectives, challenges, and proposed response strategies	• The Roads and Stormwater Department aims to continue to provide a sustainable service to customers while also servicing new customers – within the available resources. • The objective of the sector is to protect the existing infrastructure whilst also prioritising the eradication of backlogs (with a focus on development nodes to further encourage a focus of densification in those areas).
8.2	Proposed programmes and budgets	• The main expenditure in the sector is capital (including renewals). The sector has not been spending sufficiently on repairs and maintenance according to benchmarks, nor effectively ring-fencing such expenditure. • Increased emphasis on providing adequate maintenance (including renewal of existing roads and stormwater infrastructure) is planned to continue throughout the planning period with a small (relative to the need) budget provided to meet growth and access eradication.
8.3	Recommendations	It is recommended that Council: a) Note the content of this first rudimentary AM Plan, which has been prepared through the Vuthela-Ilembe LED Programme; b) Confirm that the report findings be used to inform; ▪ the preparation of budgets, strategies and plans relating to the lifecycle management of the Roads and Stormwater Department; and ▪ proposed improvements to the management of the Roads and Stormwater Department, subject to securing the required funds.

1 INTRODUCTION

The purpose and scope of the plan, its stakeholders, an overview of relevant internal and external context, the asset and asset management system status, and approach to reporting the level of confidence in the plan's outputs.

1	Plan objectives	• To plan effective and efficient infrastructure-based service delivery for the roads and stormwater department in Mandeni Local Municipality, using available resources. It considers tactics for the application of the municipality's infrastructure assets, as well as the establishment of the required management practices, over a period of 10 years.
2	Mandate	• The key mandate of local government is to provide the highest levels of service as rapidly as possible so that equal services will be provided to all residents. • MLM roads and stormwater are mandated to operate and maintain all municipal roads within the MLM boundary.
3	Stakeholders	• Community members represent the everyday road users (buses, pedestrians, mini bus taxis and private vehicles). • The business sector uses roads for transportation of goods which plays a pivotal role in the local economy. • Government departments contribute in decision making as the drivers of provincial and national initiatives, and often serve as funders of roads projects in support of these initiatives. • Farmers use roads for transportation of goods which, in the case of Mandeni impact on the local economy. • IDP office, finance and planning offices (from a coordinated planning perspective). • .Department of Transport (DoT), Provincial Department of Transport, and the District that provide other, generally higher order, roads in the network.
4	Social context	• There is a dispersed rural population providing a challenge in terms of service access. • High rate of unemployment, poor access to productive resources, lack of marketable skills and a general lack of job opportunities. • Settlement patterns in the remaining areas occur in the form of scattered, unevenly spread rural settlements, reflecting the previous neglect of the former KwaZulu Homeland areas in spatial planning and development initiatives. These settlements owe their genesis to the natural environment, particularly grazing and arable land. Patterns and low densities that are not conducive to the provision of infrastructure services. Smaller rural nodes, such as tribal courts, trading stores or clinics are scattered through the rural area. Traditional housing dominates, but a range of other formal and informal structures proliferates in these predominantly rural areas.
5	Political context	• In terms of legislation, the IDP is the principal strategic planning instrument which must guide and inform all planning, budgeting, management and decision-making

		in a municipality. The IDP provides a rolling 5-year plan that is updated and where required amended – annually, to guide Council. It should give effect to the developmental responsibility of the municipality to improve the quality of life and this includes the provision of basic services as well as the creation of jobs, promoting democracy and accountability, and poverty eradication. • MLM covers approximately 545.48km2 and is made up of 18 electoral wards. The municipality is predominantly rural in character, with Ingonyama Trust land accounting for most of its land mass There are four Traditional Council areas • Sikhonyane (eLangeni) • Mathonsi • Macambini • Hlomendlini (Ngcobo) • Ward councillors chair the ward committees and ought to rely on them for support in ensuring that the issues and needs of residents are well represented in the municipal council. However, the functionality and effectiveness of the ward committees remains a major challenge. The number of people per ward and the geographic size of the wards influence democratic representation and participation, as well as the costs of the operations and effective functioning.
6	Economic context	• MLM is in pursuit of a stronger articulation of macro and micro economic policies, stronger alignment of industrial policies and programmes with further investment and export promotion programs. It further involves better alignment to general and specific sector strategies. • Job drivers need to facilitate the creation of employment opportunities and the SDF identifies maintenance and upgrading of infrastructure as one of these.
7	Technical context	• The municipal roads system substantially provides an opportunity for social and economic mobility of the communities.
8	Financial context	• Although MLM is financially stable, the low revenue base is a high risk that threatens its continuity. It is a rural municipality characterised by high levels of poverty and low levels of economic activity. The revenue base has remained stagnant for a long period and shows signs of decline. • There has been no major private sector investment since the development of the Isithebe Industrial Area or significant expansion of commercial and residential space. This highlights the need to develop viable strategies to stimulate economic growth and facilitate private sector investment in the area
9	Legal context	Several statutory documents govern roads and stormwater services in municipalities, including: • The South African Constitution – requires that all citizens have access to basic services; • the Government Municipal Systems Act -details the municipal responsibilities in relation to provision of basic services; • The National Land Transport Transition Act (NLLTTA) (Act No.22 of 2000) – provides for a municipality to voluntarily form a transport authority; and

		• Kwa-Zulu Natal Provincial Roads Act (Act No.4 of 2001) - describes interaction between local authorities and the MEC.
10	Institutional context	• MLM roads and stormwater conducts minor maintenance through its own resources and outsources more major maintenance contracts. • MLM has a project management unit which implements capital projects.
11	Procurement strategy	• The municipality adopted a Contractor Development Policy and Implementation Strategy aiming at uplifting and empowering previously disadvantaged entrepreneurs by providing them with opportunities in the civil, construction and municipal infrastructure sectors. This programme seeks to achieve the following: o To increase the active participation of MLM SMME's and cooperatives in the local economy by 5% every year through sustainable black economic empowerment programme. o To formulate a policy that enables MLM to impact significantly in improving the quality of life of most of its citizens/customers, by optimising employment and Economic Empowerment in all its dealings. o To mainstream the local and previously disadvantaged SMMEs and cooperatives development in the affairs and structures of the municipality through annualised planning, implementation, monitoring and evaluation of black economic empowerment programme. o The Contractor Development Programme is aimed at uplifting and empowering previously disadvantaged entrepreneurs and emerging contractors by providing them with opportunities in the building/construction industry.
12	Sector strategic objectives	• The Roads and Stormwater Department aims to provide the target level of service to as many inhabitants as it can within the resources available. • The department strives to align the provision of these services to strategic zones where maximum growth across economic and social goals can be achieved.
13	AM objectives - AMS	• To establish and maintain robust processes, with appropriate supporting technology, relevant and accurate data, and competent staff to manage the lifecycle of infrastructure under its control in an effective and efficient manner to meet the sector objectives.
14	AM objectives - Infra	• Roads infrastructure to provide all-weather accessibility to residents, business and industry, in line with the Spatial Development Framework (SDF). • Storm-water infrastructure to prevent flooding in developed areas in line with the SDF. • More specific and measurable objectives need to be developed, in line with the establishment of a more robust asset management system.
15	Key developmental themes	• Significant focus ihas been placed on establishing a complete picture of the status quo and reviewing what levels of service are appropriate and affordable. Given the extensive and complex nature of the infrastructure in this and other sectors, it is essential that a structured approach is adopted so that decision-making can

		be consistent and optimised within the sector, and indeed across the whole municipality. • The asset management plan specifies approaches, programmes, projects, activities, resources, responsibilities and time frames over the short and medium term. A 10-year time frame is considered appropriate for life-cycle planning of infrastructure assets as they typically have long lives. Appropriate solutions need to be well considered (especially given the large investments required and the potential critical impacts on community well-being now and in the future), the long periods associated with implementing infrastructure projects, and the need to pursue long term sustainability. • The future should not simply be an extrapolation of the past, and significant shifts in the municipality-scape may often take many years to accomplish. • Actions in the short term however need to be planned to give effect to achieving those longer-term goals and objectives. • The plan provides a complete picture of the needs (current and future), identifies priorities in terms of managing risk and performance linked to available resources, and proposes strategic direction and programmes to be implemented.
16	Spatial structure, ongoing development initiatives	• Tribal land covers 63% of the area of MLM. • Population growth in MLM exerts pressure on existing services and leads to the densification of settlements located around Mandeni Town and along major transport routes. Most of these settlements have not benefitted from spatial planning. • Settlements have, however, undergone change and are highly influenced by accessibility and proximity to public transport routes, basic services and social facilities. The net effect is a complex migration pattern that involves population decline in remote, rural parts of the municipality and a phenomenal increase in the population along major transport and access routes and around development nodes. • Other strategies include: • Encouraging settlement within the rural context along road networks and existing infrastructure, • Introducing incentives that attract development initiatives, • Preserving and protecting the natural environment and applying conservation management, and • Ensuring the regular maintenance and upgrade of existing infrastructure. • There is a need for improved administration of land use on the periphery of the urban areas. The SDF highlights a move towards nodal development that increases density of settlement and promotes compactness. • Main urban centres, village centres and tourism centres are shown in **Figure 1.1.** The **Figure** also shows municipal planning for development as set out in the SDF. From the **Figure** the large areas of urban development can be seen which threaten the natural high agriculture potential land in MLM. Part of the spatial plan is to define urban development edges and protect the natural resources. MLM has the

		highest proportion of urban area out of all the local municipalities in the district which is shown in **Figure 1.2.**

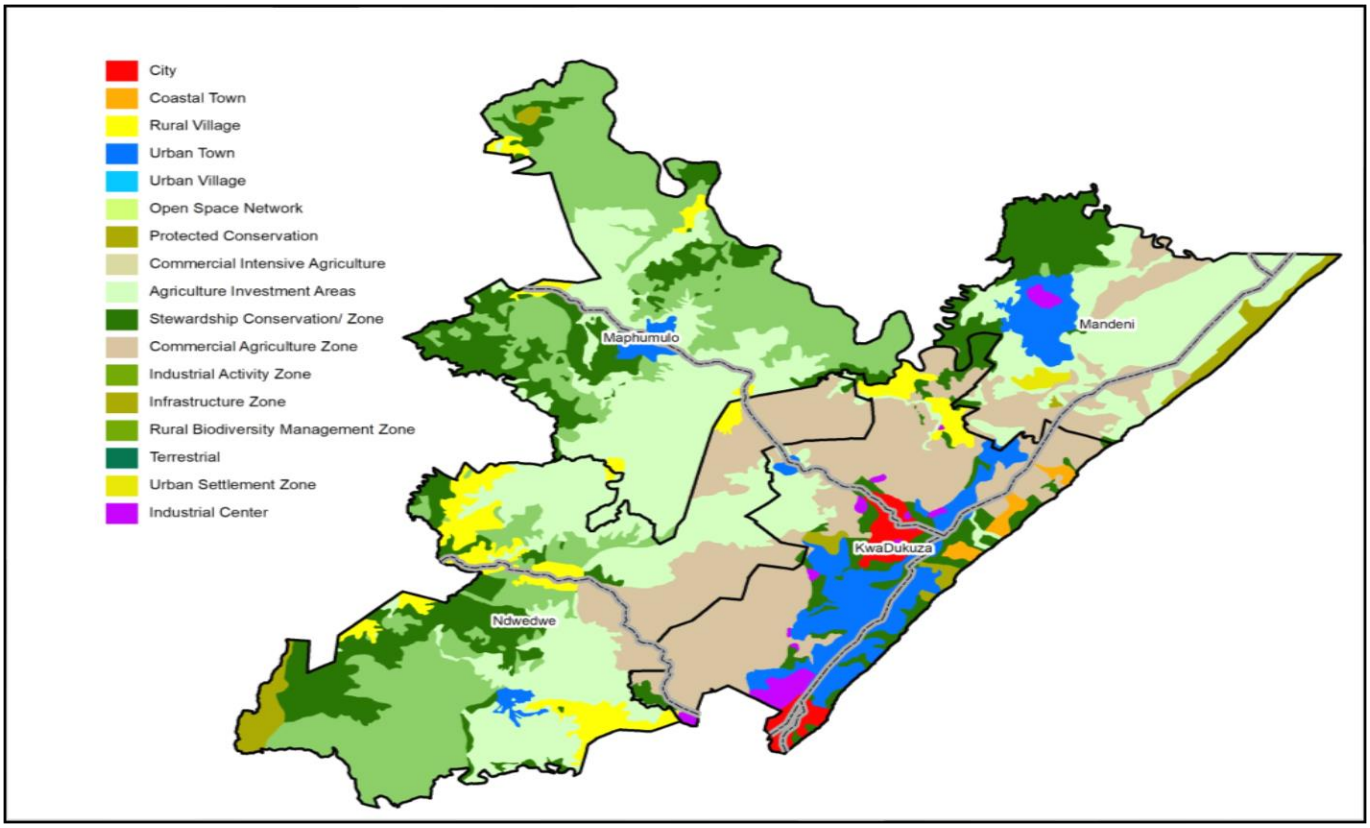

Figure 1.1: Land uses across Ilembe District Municipality

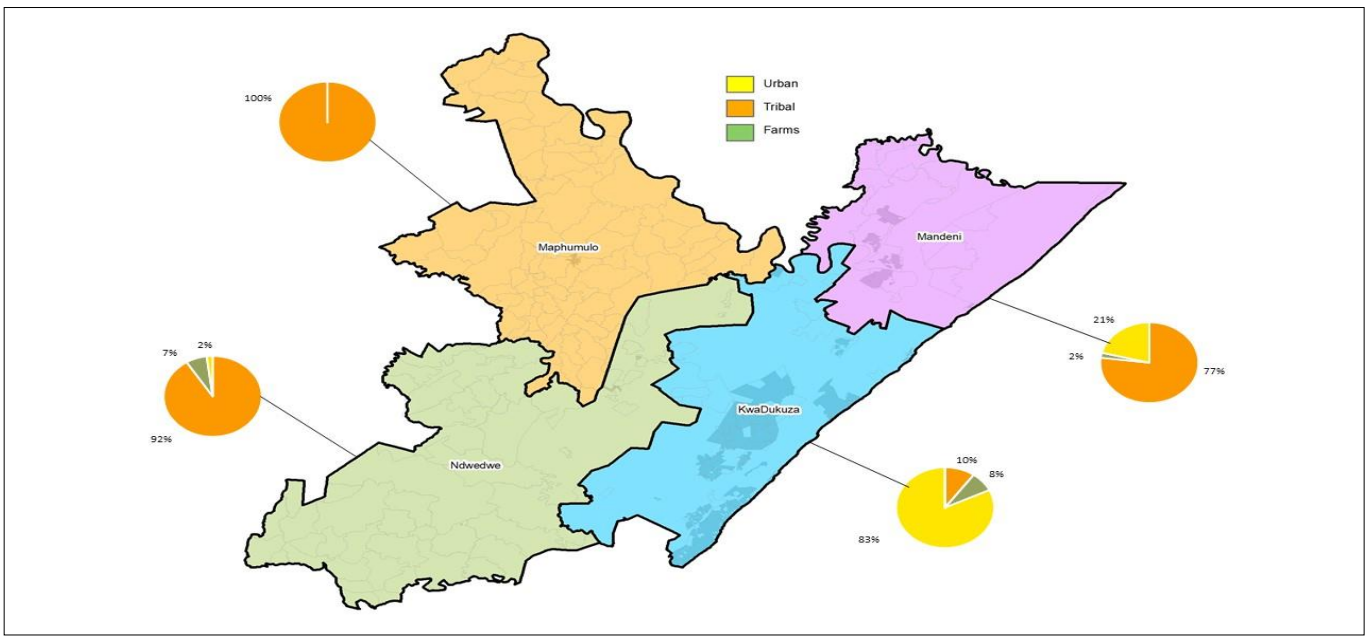

Figure 1.2: Urban, Tribal and Farm areas

17	Key sector AM roles (and suppliers)	• A financial asset manager exists but not a dedicated physical asset manager (to oversee and coordinate physical asset management) within the Roads and Stormwater Department. • MLM has its own borrow pits and conducts most of the maintenance activities in house.
18	Overview of infrastructure	• The **Table** below represents the status of the assets according to the current financial asset register. • Based on the financial asset register the entire portfolio depreciates at R23 million per annum - reflecting 6,7% of the portfolio is consumed annually. • The current replacement cost (CRC) of the portfolio (based on the number of households served) is estimated to be R1.1 billion. • The gravel roads need attention as it is currently in the worst condition of the asset groups. • Overall the entire portfolio is considered to be in good health (though the accuracy of data needs to be verified).

Table 1.1: Asset group types, associated values and health

ASSET GROUP	COST (Rmil)	CARRYING VALUE	EXTENT	EXTENT UNIT	DEPRECIATION (Rmil)	CV/COST	CONDITION
Bridges	6,59	4,72	26	No.	0,27	72%	Very Good
Gravel Roads	35,93	15,29	600	km	5,35	43%	Fair
Paved Roads	231,04	162,09	100	km	13,64	70%	Good
Road Furniture	6,64	4,41	No Data	No Data	0,51	66%	Good
Stormwater	61,15	47,54	No Data	No Data	3,38	78%	Very Good
Grand Total	**341,36**	**234,05**	**726**		**23,15**	**69%**	**Good**

19	Overview of the level of performance	• The Sector's main focus is on retaining a good standard of service through addressing maintenance (and renewal) requirements whilst the annual target is to upgrade roads, with a focus on secondary roads, to paved standard but this is funding-constrained. • Some key sector risks include: • Financial constraints. • Contractors demanding work in areas that are not of immediate attention. • High cost of addressing backlog due to sparse rural population. • Poor road conditions further hinder service provision in some areas.
20	AM maturity	• MLM is a category B municipality and is coming of a low asset management practices base, however MLM has demonstrated its commitment to improving its practices by implementing the Vuthela-Ilembe LED project. There is a relatively low level of asset management practice maturity, especially in the field of physical asset management within MLM. This AMP is a high-level initial document to start

		steering the municipality towards implementing quality asset management and asset management planning.
21	Availability and quality of key data and information, lifecycle models	• In general, the reliability of the data used to prepare this chapter is considered to be low to moderate. Although a lot of effort has been spent validating the accuracy of the information, much of this information has been gained from multiple sources with different grades of confidence and has not been independently verified. • There is a shortage of basic infrastructure data (a mSCOA aligned asset register). Due to this, infrastructure indicators and masterplans will need review and confirmation in future stages. • MLM does not have comprehensive GIS records for all roads and stormwater infrastructure within their area of supply which poses a threat to data quality and accuracy.
22	Key data / modelling assumptions	• Population growth • Household size • Current capital expenditure • Roads and stormwater LOS and SOS targets • Cost of services provision per household • Maintenance cost or target per year
23	Chapter summary	• MLM has a substantial road network, the vast majority of which are gravel roads. According to the asset register, the gravel roads are generally in poor to very poor condition, and the municipality would benefit substantially from improvements in operations in this regard to ensure effectiveness and efficiency in applying the severely limited resources available.

2 LEVELS OF SERVICE

An overview and assessment of the prevailing levels and standards of service. current backlogs, historic and existing initiatives. summary of needs, challenges, associated strategic risks, opportunities and priorities. and proposed strategic and tactical responses.

1	Existing levels and standards	• The majority of customers within the MLM area are at LOS 1 (Tracks and Sub-Standard Stormwater). • MLM controls approximately 700km of road network which comprises of approximately 100km of paved (black top) and the rest are gravel roads and tracks. These are primarily access roads and are highlighted in green in the **Figure** below. • The **Table** below depicts the different road categories in MLM.

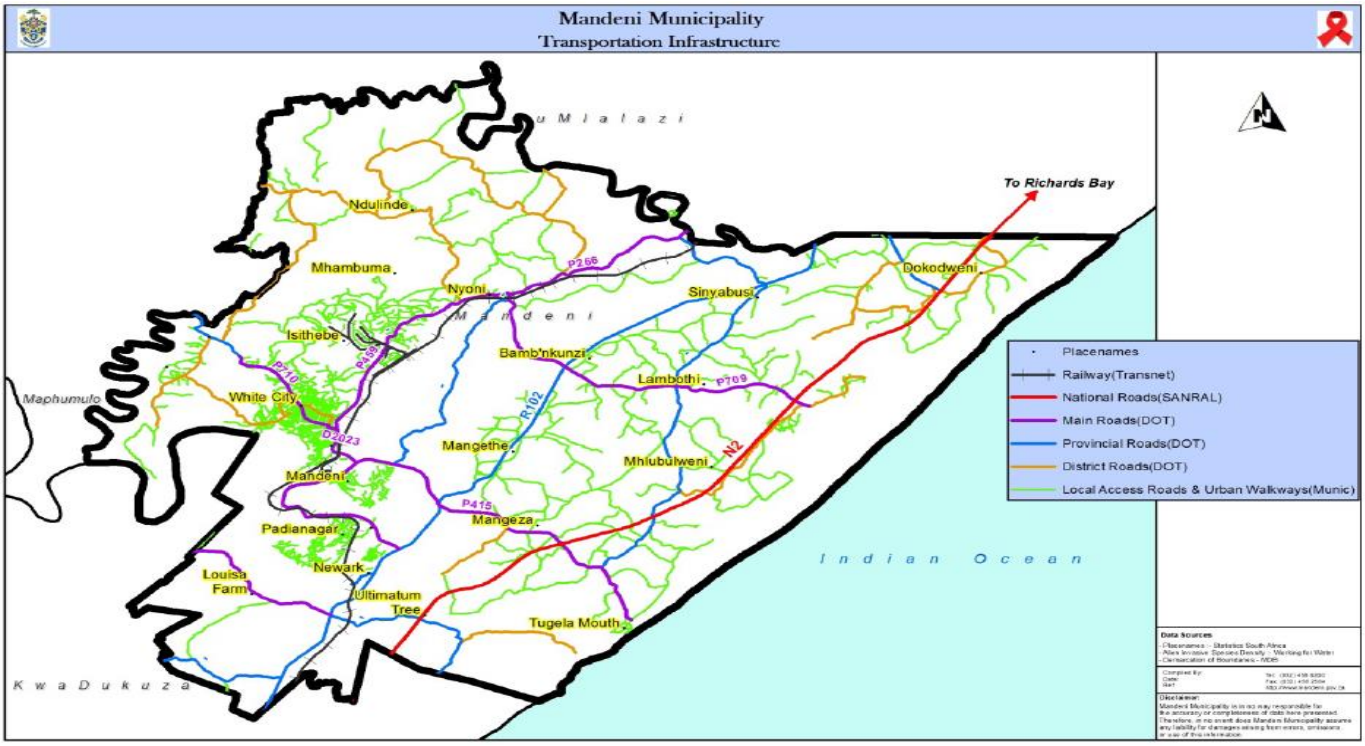

Figure 2.1: Transportation Infrastructure

Table 2.1: Levels of Service Distribution

Roads Service	Level of Service	% of Customers	No. of Households
None	0	2.3%	1 056
Tracks (institu material, compaction/ grading to make passable).	1	77%	35 369
Gravel Roads	2	6.4%	2 940
Paved Roads	3	14.3%	6 569
Paved heavy capacity	4	0	0

2	Historic trends and ongoing initiatives	• MLM is characterised and is highly influenced by rural settlement dynamics, and these did not necessarily develop according to predetermined systems and procedures. • The majority of MLM developed and emerged in the context of social identity and livelihood strategies. Settlements have, however, undergone change and are highly influenced by accessibility and proximity to public transport routes, basic services and social facilities. • The net effect is a complex migration pattern that involves population decline in remote, rural parts of the municipality and a phenomenal increase in the population along major transport and access routes and around development nodes. • The inland rural communities are experiencing population decline. • The population in 2018 stood at 148 636 (46 449 households).

Table 2.2: *Increase in population and households per year*

	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Population	149 053	149 470	149 889	150 309	150 729	151 152	151 575	151 999	152 425	152 852
Household	46 579	46 710	46 840	46 971	47 102	47 235	47 367	47 499	47 632	47 766

3	Strategic directives	• Due to the need to prioritise the expenditure of limited available capital, the majority of the spend is proposed to be targeted around the development nodes indicated in the SDF. • Urban areas are substantially on the highest target level of service which is Level 3 (paved). • The target level for public transport roads (secondary roads) in the rural areas is Level 3 (paved). • All problematic stormwater drainage areas are being addressed and will continue to be addressed, these include but are not limited to stormwater pipes and stormwater channels. • Human settlements guide the increase in paved roads with their development areas and provide a Level 3 level of service (paved).

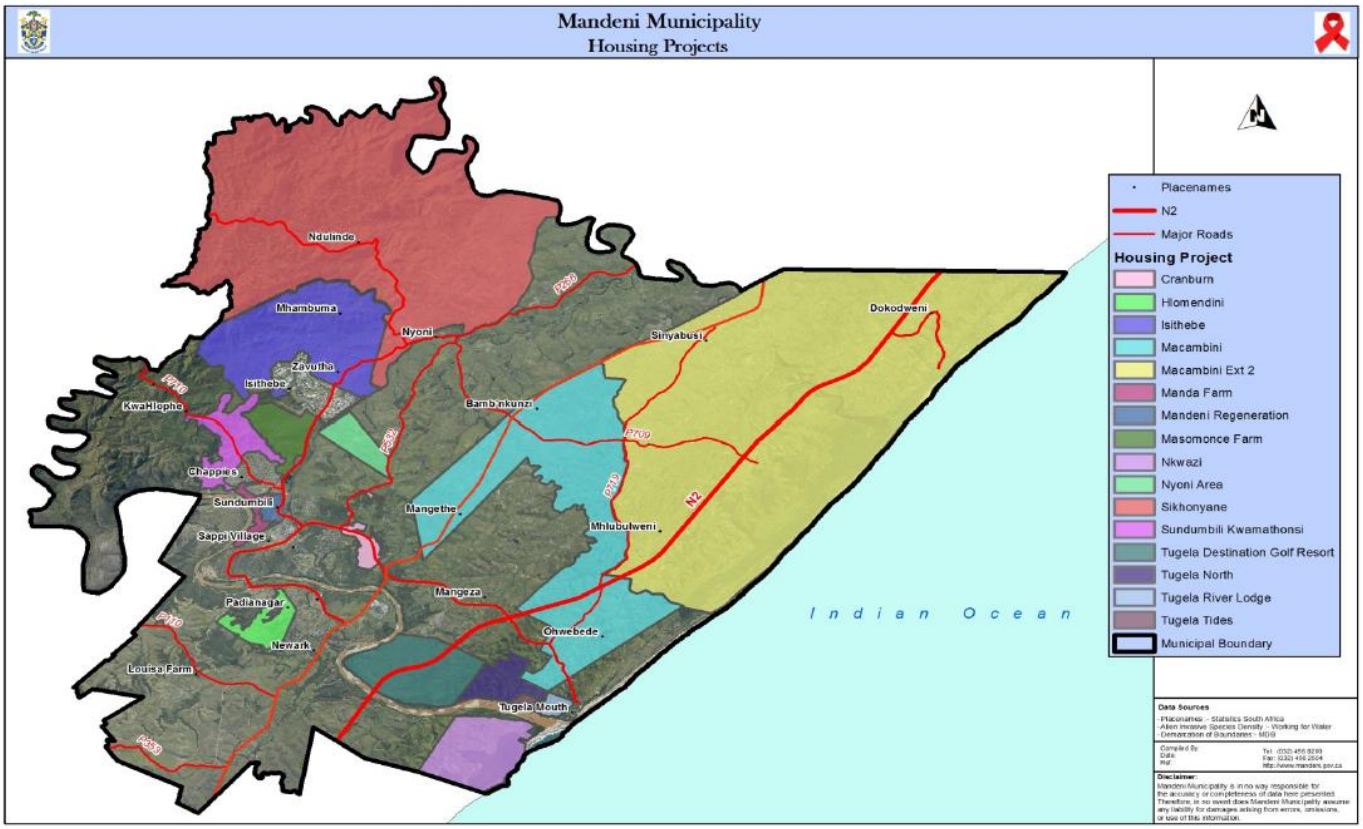

Figure 2.2: Human Settlements priority areas

4	LOS / SOS criteria	• The **Tables** below indicate the model used to annotate the levels of service for the different type of roads and stormwater within the municipality: • Road classes are as follows: • Primary roads (high volume, no direct access, public transport routes, moderately high speeds). • Secondary roads (district distributors and collectors, limited access). and • Tertiary roads (local access roads, full access)

Table 2.3: Level of service definitions for Roads

Roads Service	Level of Service
None	0
Tracks (institu material, compaction/ grading to make passable).	1
Gravel Roads	2
Paved Roads	3
Paved heavy capacity	4

Table 2.4: Level of service definitions for Stormwater

Roads Service	Level of Service
No Stormwater Provision	0
Sub Standard Stormwater Provision in Roadway and ditches, not to a specific design standard	1
Basic Unlined Channels to a minor system design standard of maximum 1:2-year return period	2
Lined Channels to a minor system design standard of maximum 1:2-year return period	3
Kerbs, gutters and pipes and canal systems to a minor and major system design standard of maximum 1:20 year period	4

5	Targets	• The assumption made is that the stormwater level of service is linked to the roads level of service provided. • The target level of service for all urban areas are paved roads and lined channels (Level 3). • The target level of service for existing and new customers are unpaved roads and unlined channels (Level 2). • It is assumed for modelling purposes that the aim is to eradicate all backlogs within the planning period.

Table 2.5: Level of service Target and Cost

LOS Definitions	Current LOS (km)	Target LOS		Backlog Cost(R'000)
		Gravel Road(km)	Paved(km)	
None	16	16	0	11 225
Tracks	539	0	539	184 589
Gravel Roads	45	0	45	15 411
Paved Roads	100	0	0	0
Paved heavy capacity	0	0	0	0

6	Lifecycle cost implications	• The primary source of funding for roads and stormwater projects are Municipal Infrastructure Grants (MIG). • The funding will have to increase significantly to address current service level targets however due to this being unrealistic, prioritization of spend needs to be allocated to strategic areas. • Human settlements are developing areas and planned future developments and some of the capital strain is absorbed by their development. • Human Settlements apply a level of service of Level 3.

Table 2.6: Level of service Target and Cost

Upgrading from no level of service to some level of service 2										
	2019	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**
Backlog (Households)	1 056									
SW Backlog (Households)	1 056									
Capital for Access Backlog (Rm)	22									

Table 2.7: Level of service Target and Cost

Upgrading level of service 2 to level of service 3										
	2019	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**
Backlog (Households)	3 831	3 831	3 831	3 831	3 831	3 831	3 831	3 831	3 831	3 831
SW Backlog (Households)	3 831	3 831	3 831	3 831	3 831	3 831	3 831	3 831	3 831	3 831
Capital for Access Backlog (Rmil)	251	251	251	251	251	251	251	251	251	251

7	Service delivery backlogs	• Primary backlogs exist on access roads within the rural/tribal areas. • Priority needs to be given to maintenance to protect the serviceability of key existing roads, and to prevent significant deterioration that will be costly to repair. • Backlogs exist mainly in rural and farm areas and need to be addressed on a prioritised basis, within the funding available.
8	LOS / SOS backlog reduction tactics	• Lifecycle optimization to ensure effective use of available funds through periodic condition surveys and analysis. • Densification of developmental nodes – maximizing the service provided by road and stormwater investment.

		• Promotion of private sector investment.
9	Chapter confidence	• In general data reliability in this chapter is considered to be moderate. Although effort has been spent validating the accuracy of the information, much of this information has been gained from multiple sources with different grades of confidence and has had not been independently verified.
10	Chapter summary	The level of service in the municipality can be characterised as follows: • Low level of service in most of the tribal and farm areas, as well as backlogs generally in the rural areas. • 600km of existing gravel roads infrastructure in a poor to fair condition. • Insufficient stormwater infrastructure. • The infrastructure is considered essential for enabling productivity of the local economy. • Areas where major service backlogs exists are adjacent to areas where full services exist. • The perception amongst stakeholders is that budget is available for new infrastructure and upgrading of existing infrastructure, with little focus on maintenance. The Municipality has therefore, recognised the need to address the backlogs, whilst also maintaining an acceptable level of services in the already serviced areas.

3 FUTURE DEMAND

An overview of customer growth trends. existing and proposed demand management techniques. associated infrastructure implications. summary of needs, challenges, risks and opportunities, and proposed strategic and tactical responses.

1	Historic growth trends	Several factors, some of which are indicated below, influence the demand for roads and associated infrastructure: • Population growth – increase in population increases vehicle ownership and influences trends in the mode of transport used by the community. • Changes in economic activity, leading to growth in industrial and commercial traffic. • The need for access to new residential sites – driven by the pace at which the housing backlog is addressed and economic growth. and • The extent to which control measures are adopted and successfully implemented to constrain and/ or direct growth (for example to areas where there is existing bulk infrastructure capacity).

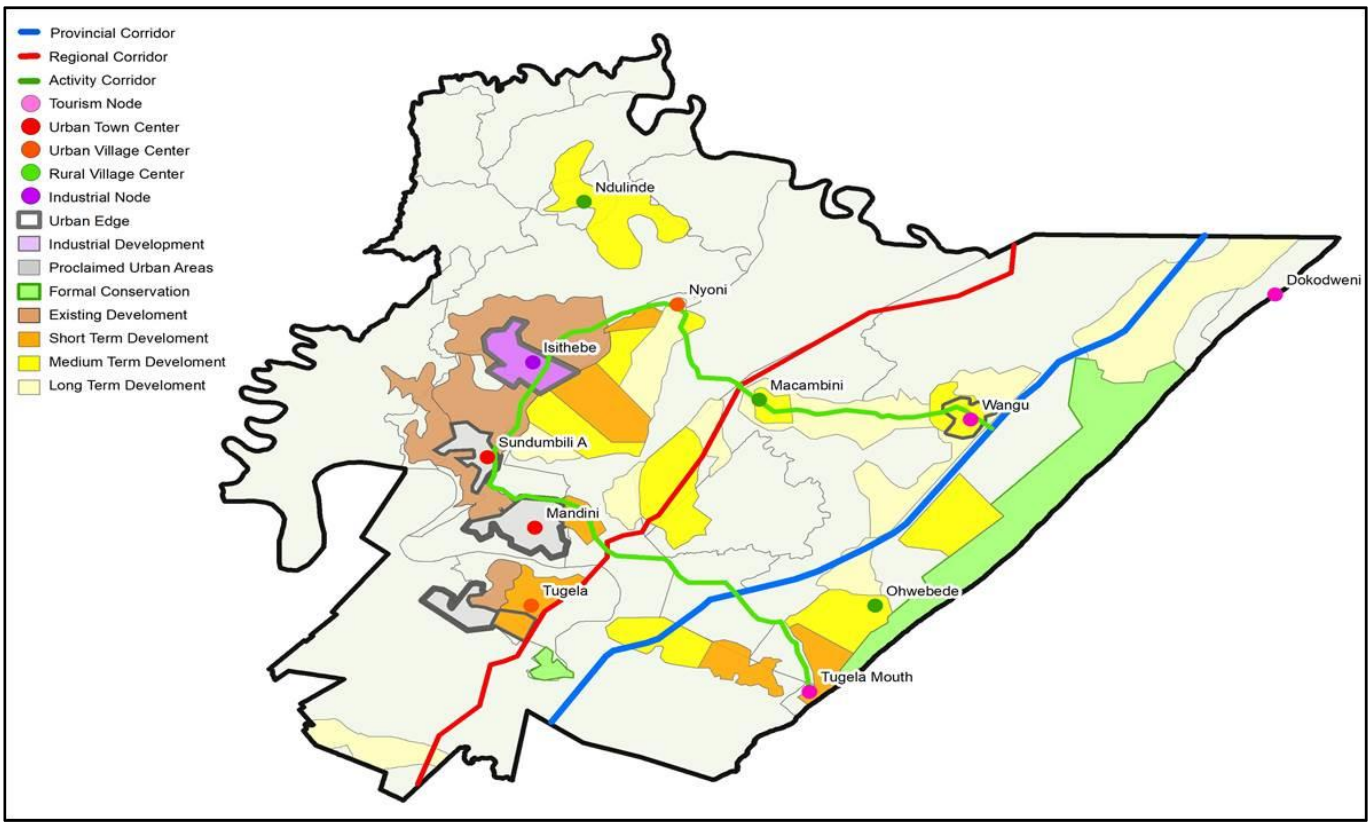

Figure 3.1: Major Corridors and Nodes

2	Demand drivers	The current demand drivers include: • Growth and backlog • Eco tourism • Agriculture • Manufacturing
3	Growth strategy	The strategic objectives of the Integrated Transport Plan (ITP) are the following: • To provide for and manage future transport demand. • Provide a more balanced transport system. • Promotion of public transport integrated with other modes of transport. • Relate to and compliment the spatial development plan. and • Support economic development strategies and long-term environmental management strategies
4	Sector demand forecast	• MLM is classified as a Quaternary Node and in terms of functionality this node should provide services to the local community and respond to community needs. Therefore, the focus will be on MLM Roads and stormwater infrastructure specifically. • The **Tables** below depict the growth and the cost implications to cater for this population growth.

Table 3.1: Population Growth (10 years)

Current Population	Growth Rate (p/a)	Population at end of Planning period	Population Increase	Household Increase
148 637	0.28 %	152 852	4 215	1317

Table 3.2: Capital Needed for Growth

Capital for Growth at LOS 2 (Million)										
	2019	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**
Growth (Households)	130	130	131	131	132	132	132	133	133	133
Backlog (m)	1 960	1 965	1 971	1 977	1 982	1 988	1 993	1 999	2 004	2 010
Capital for Growth (Rmil)	3	3	3	3	3	3	3	3	3	3

5	Infrastructure impact	The future demand is derived from the following criteria: • Population Growth • Upgrading of Levels of services

		• Densification around developmental nodes can reduce this requirement but will require higher order roads and stormwater infrastructure to adequately deal with higher traffic volumes. • The increased demand will have an impact on the current infrastructure and the current management of infrastructure. • The rate of deterioration may increase in places as the infrastructure copes with increased use, and the associated increased maintenance. • The **Figure** below shows in an ideal situation the transition from gravel to tar within the municipality if funding was to be available to address all backlogs.

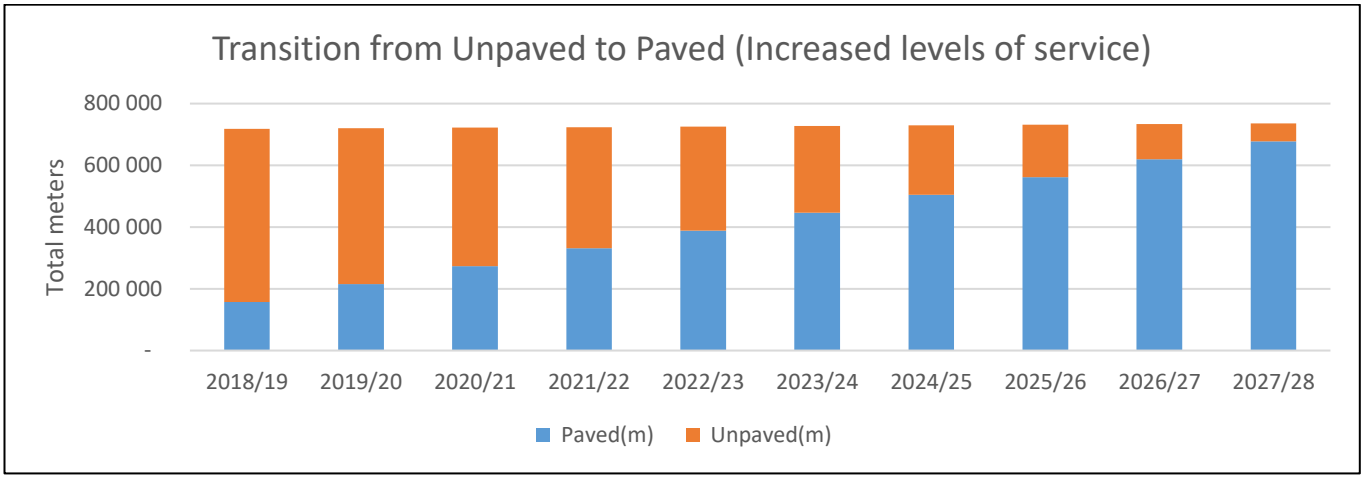

Figure 3.3: Transition from unpaved to paved – scale of needs to eradicate backlog over 10 years

6	Demand management tactics	• Building new infrastructure • Renewal of existing infrastructure • Inter department strategy alignment and development controls • Investment and procurement strategy improvements
7	Chapter confidence	• Data reliability in this chapter is considered to be moderate. Although a lot of effort has been spent validating the accuracy of the information, much of this information has been gained from multiple sources with different grades of confidence and has not been independently verified. • The IDP is the primary planning document for the municipality and has been referenced as well as the roads and stormwater masterplans.
8	Chapter summary	Some of the demand challenges are: • Access to additional financial support to more rapidly address the backlog targets. • Local economic development to underpin the provision of services. The following are demand-based risks: • Increased maintenance requirements due to increased physical strain on existing infrastructure.

		• Requirements for selective performance upgrades (widening, upgrades to junctions) associated with increased traffic. • Need for level of service upgrades in line with targeted LOS

4 LIFE-CYCLE PLAN

An overview of the infrastructure life-cycle needs, affordability, constraints, delivery tactics, risks and opportunities, and proposed short, medium and long-term responses (projects, programmes and budgets).

1	Life-cycle risk profile	• 4km of gravel roads and 6km of paved roads with associated stormwater are targeted annually. • Most of the roads and stormwater portfolio are reflected in the asset register as being in a good to very good condition. • At the current level of investment, the bulk of the portfolio (unpaved roads) is expected to remain in a poor condition. • Without very significant increases in revenue streams or grants, it is evident that full achievement of the targets is not affordable. Improvements in levels of service will need to be selective, and application of available funds targeted. • The current split of expenditure is 26% for repairs and maintenance and 74% capital expenditure (construction of new roads and stormwater and renewal of existing infrastructure). With such severe limitations on available budget, there is a need to ensure that available resources are applied in the effective and efficient manner.

Figure 4.1 illustrates a conceptual model for the lifecycle actions required to manage portfolio health.

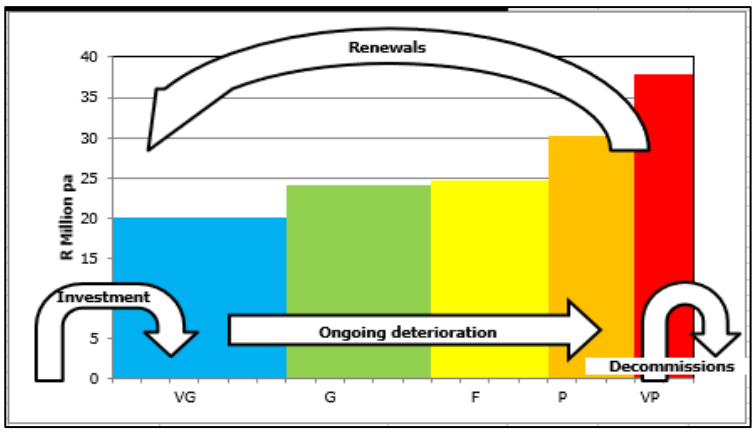

Figure 4.1: Conceptual illustration of the portfolio lifecycle management

The actual condition profile of road and stormwater assets at MLM, according to the asset register, is indicated in **Figure 4.2** and the physical distribution (in the latest Roads Master Plan) is indicated in **Figure 4.3.**

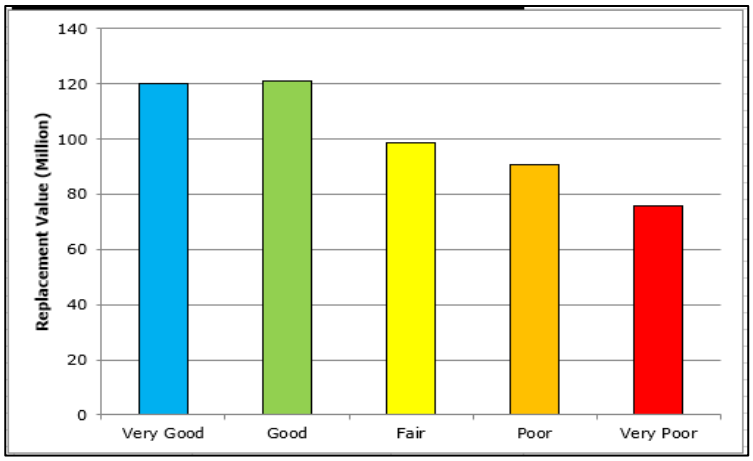

Figure 4.2: Condition distribution of MLM road and stormwater assets

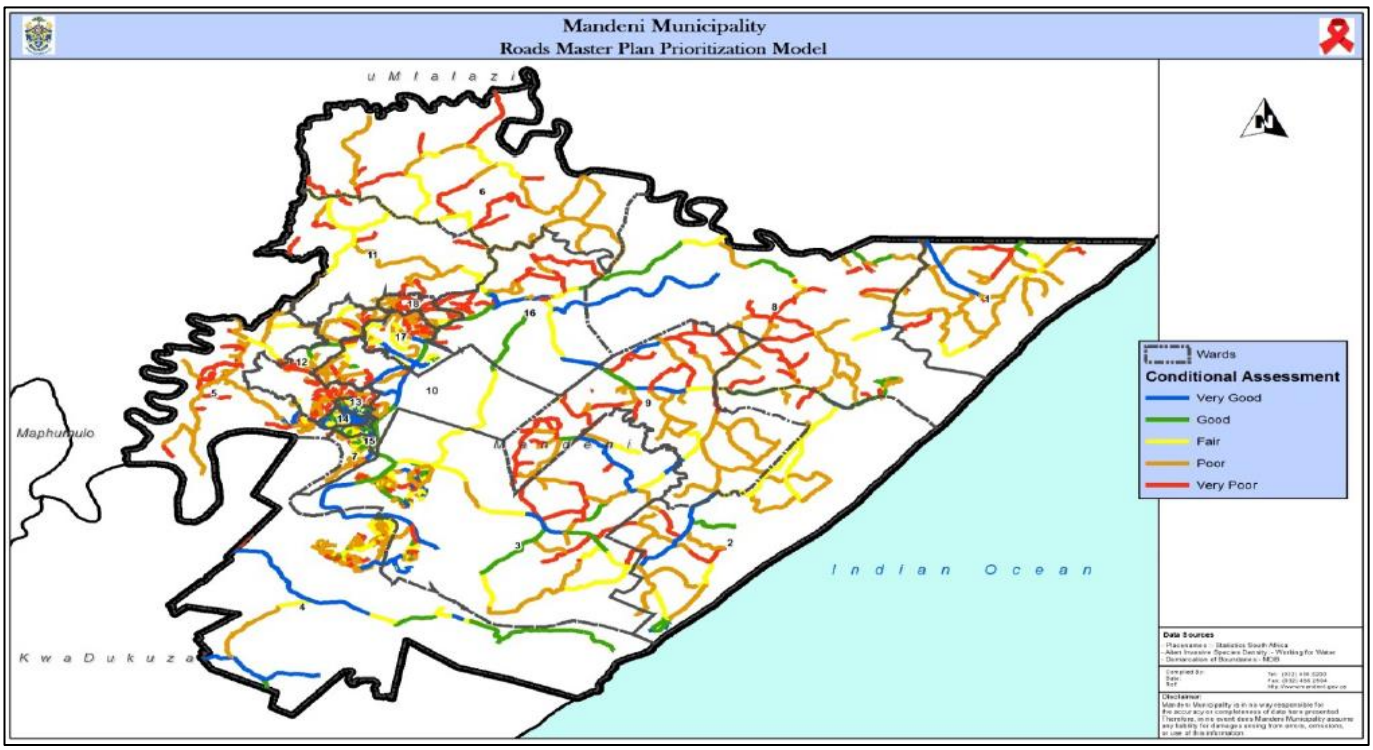

Figure 4.3: Road condition distribution (Master Plan)

2	Capital programmes	• MIG funding is provided but is primarily used for capital (renewal) maintenance activities. • New infrastructure is constructed by human settlements as part of their developments. • Currently 4km -6km of roads are upgraded per year, which, as previously noted is a small fraction of the overall backlog. • The total capital required for the 10 year planning period to address all needs is estimated to be R3 166 million.
3	Maintenance management	• Minor repair and maintenance is done by internal maintenance teams. • MLM has its own plant and equipment which improves maintenance performance reliability.

		• It is estimated that the total maintenance required for the planning period, if all backlogs in infrastructure provision were to be addressed, is R395 million (an average of about R40m per year). • Current borrow pits are reaching their end of life and an appropriate solution needs to be identified. .
4	Operations management	• The Roads and Stormwater Department focuses primarily on maintenance. Responsibility for traffic lights and road sign lighting resides with the Electricity Department. The clearing of storm-water infrastructure is considered under "maintenance".
5	Delivery packaging and scheduling	• All capital projects are handled by the Project Management Unit • Due to the severe budget constraints, interventions are focussed on extreme condition failures and responses to community-reported problems.
6	Life-cycle plan	The total expenditure for the roads and stormwater sector amounted to R49.8 million in the last financial year (R13.1 million - Repairs and Maintenance and R36.7 million – Capital). It is estimated that the total need to address all lifecycle needs (including all backlogs) would be R306 million pa, which is clearly unaffordable. The following is a summary of the estimated needs for the 10-year planning period: • Total capital required for access backlog eradication: R2 534 million • Total capital required for the growth of the new customers: R34 million • Total capital for renewals: R 597 million

Figure 4.1: Overview of lifecycle needs (Millions)

	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28
Access Backlog	253	253	253	253	253	253	253	253	253	253
Renewals (Existing)	40	40	40	40	40	40	40	40	40	40
Growth	3	3	3	3	3	3	3	3	3	3
Maintenance	16	20	25	30	35	41	47	53	60	68
Total Lifecycle need	**313**	**318**	**322**	**327**	**332**	**338**	**344**	**350**	**357**	**365**

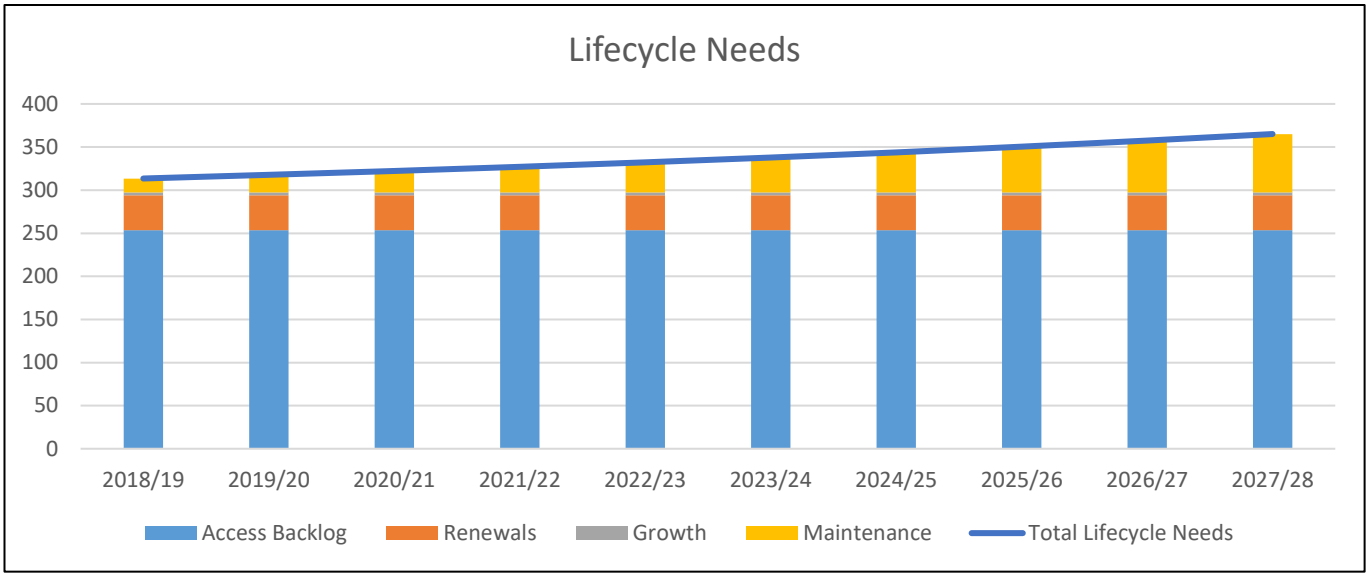

Figure 4.7: Lifecycle needs

7	Chapter confidence	• In general the reliability of data informing this chapter is considered to be moderate. Information has been gained from multiple sources with different grades of confidence, and has not been independently verified. • An asset register exists however it is not mSCOA aligned. • Gaps in the asset register data need to be addressed to enable more reliable analysis. • Replacement costs were determined by analysing the level of service provision to households across the municipality, and compared to the latest master plans, escalated where applicable to get a realistic present value.
8	Chapter summary	Key factors that inform the life cycle plan: • High level modelling suggests that current maintenance and capital renewal budget levels are not adequate to be able to keep the roads and storm-water infrastructure at the desired condition levels. Optimisation should be informed by improved data and information, albeit at a rudimentary level. • The rate at which backlogs can be addressed depends substantially on the capital available – which is currently significantly constrained. – especially in light of the low affordability of the community and limited grant funding.

5 FINANCIAL PLAN

An overview of the financial objectives, historic financial performance, revenue forecast (where applicable) and funding strategy, and associated challenges, risks and opportunities.

1	Financial objectives and targets	MLM managed to meet 79% of its financial targets in terms of KPIs. Some objectives, directives and targets include: • The municipal investment policy aims at gaining optimal return without incurring undue risks. • Provisions for repairs and maintenance of damaged roads. • The investment policy also notes that all reasonable steps should be taken to ensure monies owed are collected as soon as possible after due date. • Establishment of Revenue Enhancement and Debt Collection Task Team as well as access to Extended Public Works Programme grant and other funding.
2	Financial performance	• The roads and stormwater sector is a non-revenue generating portfolio • MLM revenue has increased cumulatively by 53% from 2014 to 2018 financial year to R283 million as per **Figure 5.1.** The municipality attained its targeted revenue budgets - the actual revenues from 2014-2018 exceed the budgets. • The total expenditure for MLM in the financial year 2017/18 amounted to R 220 million (FY2016/17: R248 million). The total municipal expenditure declined by 11 % in 2018 due to the embarkment on cost containment strategy by the municipality. Most of the total expenditure is spent on Employee costs as depicted by **Figure 5.6.** • The repairs and maintenance budget were 5% and 3% in the 2015/16 and 2016/17 financial years respectively. • Actual expenditure for repairs and maintenance was reflected as 4% in 2015/16 and 2% in 2016/17 financial years, underspending on the already low budget. • The municipality uses various sources of funding including property rates, service charges, grants, license and permits and interest as per **Figure 5.2**. The municipality is highly dependent on grant funding as revenue streams are too small. Capital grants and transfers totaled R 43.9 million in the 2015/16 financial year and increased to R 47.1 million 2017/18. • The grant funding is forecast to increase by 5.4% in the next two FYs. • The Municipal budget for the grant received in the past 3 years versus actual grants in not consistent as actual spent in 2016/17 was 64% higher than the budget while 2017/18 actual decreased (13% decrease for 2017/18 financial year). The different ratios investigated in **Table** 5.**3- Table 5.5** shows the following regarding the financial viability of the municipality: • The municipal cost coverage ratio achieved in 2017/18 is 1 month which is just within the target of 1-3 month. This suggest that the municipality may find it

		difficult to meet its monthly fixed operating commitments from cash and short-term investments without collecting any additional revenue. • MLM current ratio attained in 2017/18 is 2.23 which is within the targeted current ratio of a range between 1.5-2.1, indicating that the municipality's current assets exceed its liabilities and can pay its current obligations and continue operations at a desired level. • The capital expenditure, as a proportion of total expenditure, is above the norm of 20% for two financial years – reflecting higher spending on infrastructure and acceleration in service delivery. In 2017/18 this ratio was at 10% (only half the norm). • The collection rate is below the norm as the municipality is not collecting revenue as billed. This poses a threat as MLM needs the revenue to adequately fund service provision while maintaining its assets in an acceptable condition. • R 13.7 million in unconditional grants were not spent in 2017/18, an increase in underspending from the previous two years.

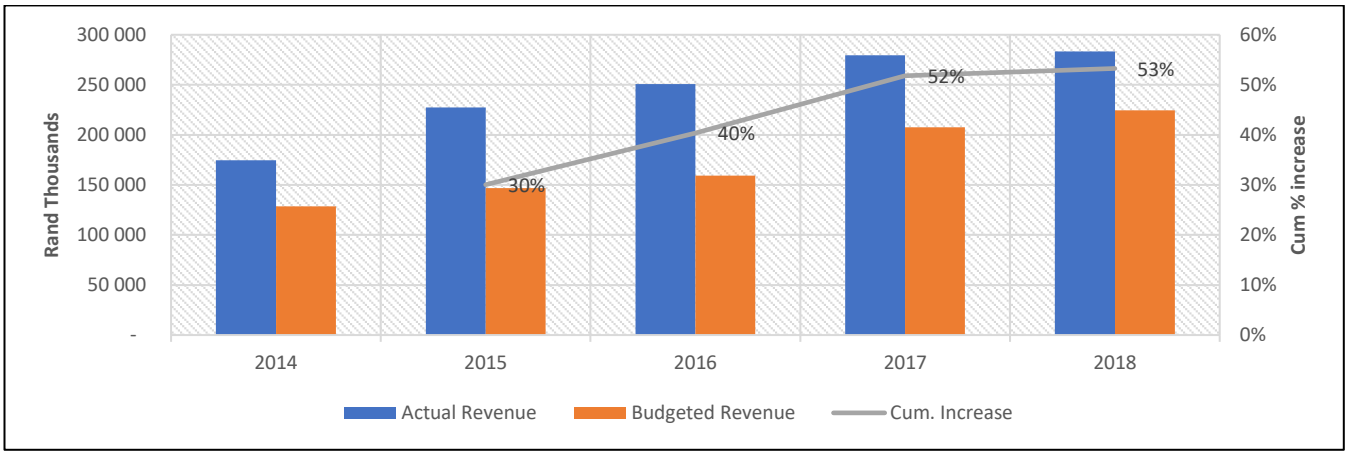

Figure 5.1: MLM's revenue and expenditure, 2014–2018

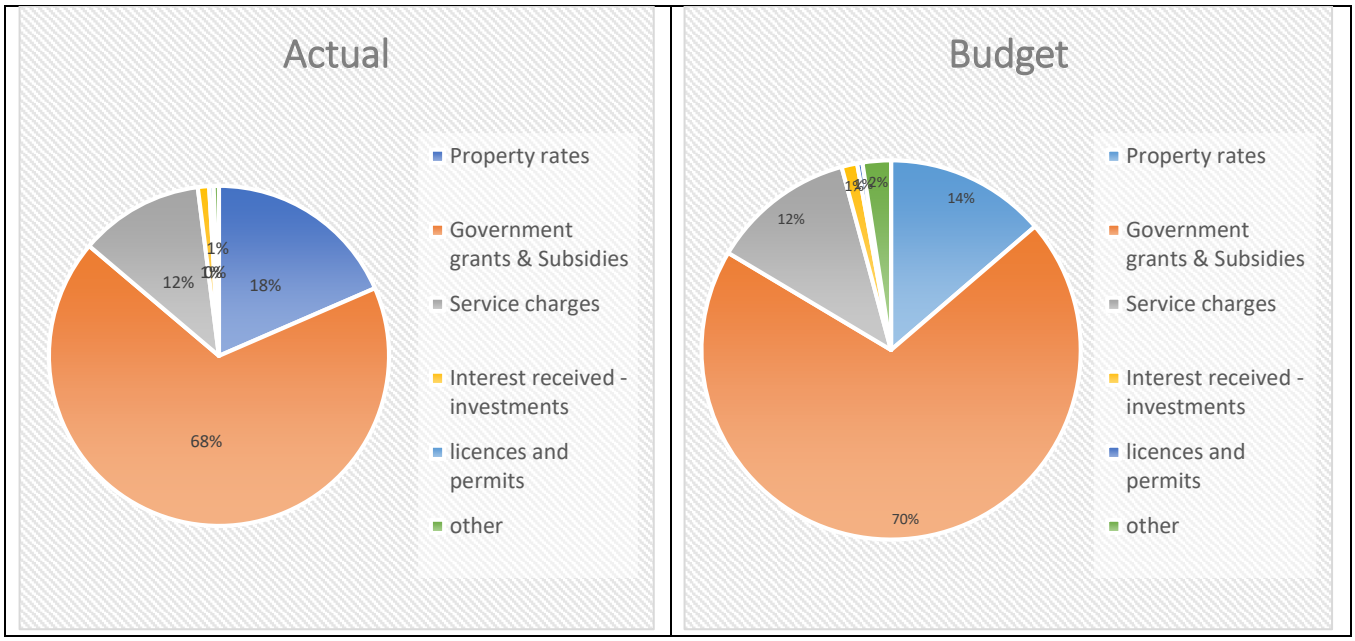

Figure 5.2: Categories of operating revenue, 2017/18

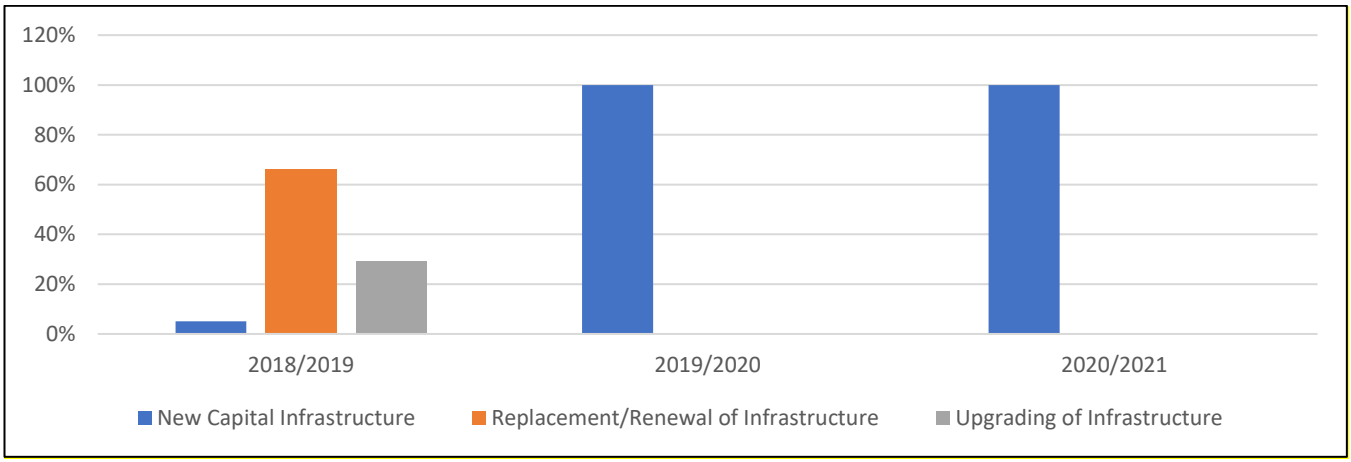

Figure 5.3: Roads infrastructure MTREF Capital budgets

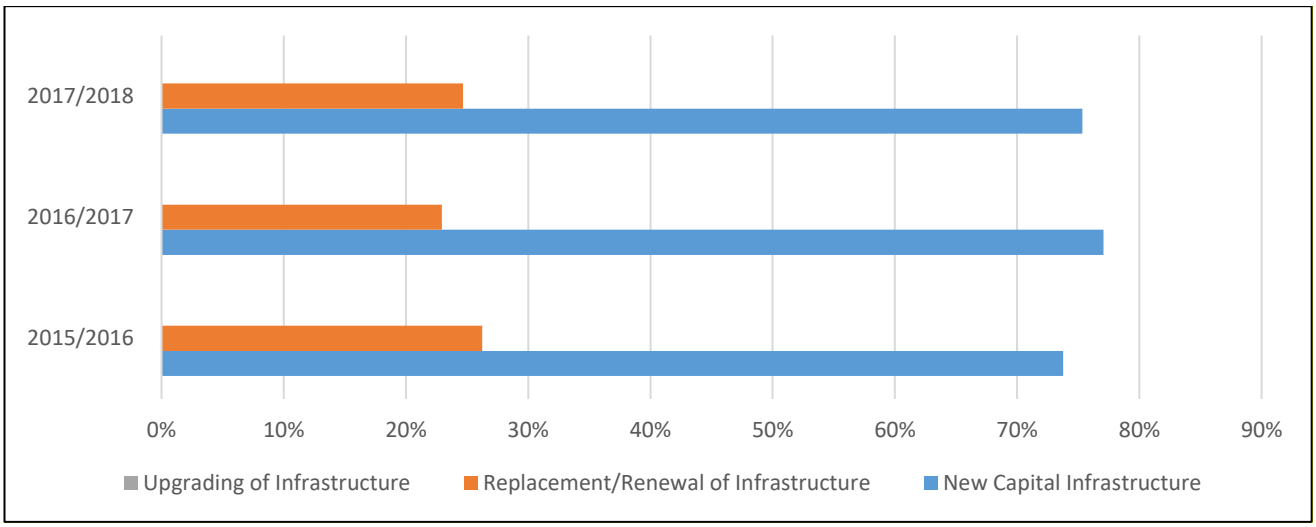

Figure 5.4: Roads infrastructure actual capital spending for 3 years

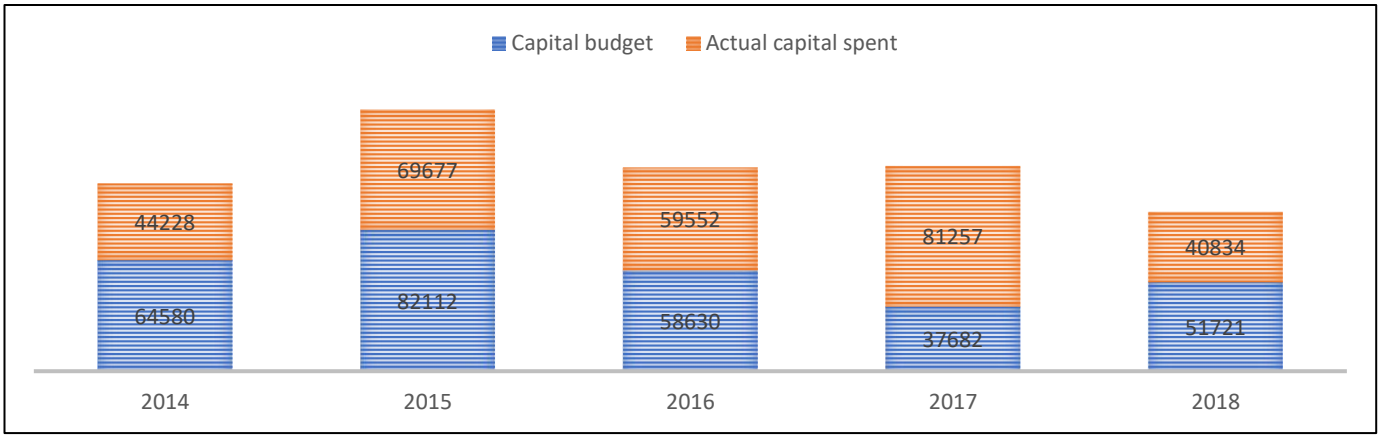

Figure 5.5: Value of actual grant spend versus total capital budget for 2014-2018

Table 5.1: Repairs and Maintenance ratios (R '000)

	2015/16		2016/17		2017/18	
Repairs and maintenance ratio	**Budget**	**Actual**	**Budget**	**Actual**	**Budget**	**Actual**
Repairs and maintenance	16 530	14 017	14 804	10 530	17 756	18 288
PPE and investment property	355 197	386 215	444 411	444 802	457 302	457 302
Ratio of R&M to PPE and Inv property	**5%**	**4%**	**3%**	**2%**	**4%**	**4%**
Target	**8%**	**8%**	**8%**	**8%**	**8%**	**8%**

Table 5.2: Cost coverage ratio

	2015-2016	2016-2017	2017-2018
Cash and Cash equivalents	293 211	2 636 075	6 547 000
Unspent Conditional Grants	11 271 332	8 462 926	13 700 000
Overdraft	-	-	-
Short term investments	27 455 775	12 520 600	-
Total Annual Operational Expenditure	217 708 031	247 450 211	218 704 000
Cash/Cost Coverage ratio	**1 month**	**0 month**	**1 month**
Acceptable Norm	**1-3 months**	**1-3 months**	**1-3 months**

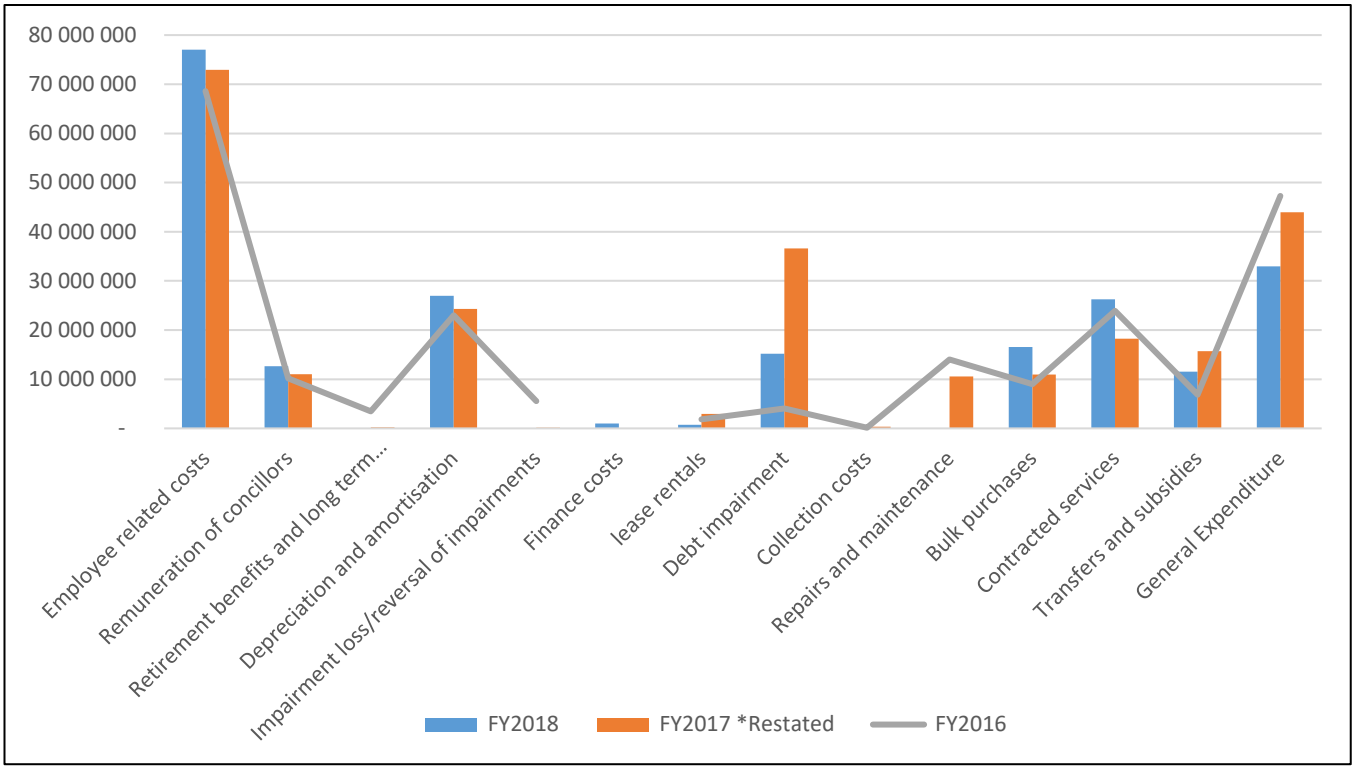

Figure 5.6: Historical expenditure

Table 5.3: Current ratio

	2015-2016	2016-2017	2017-2018
Current Assets	74 968 689	61 368 327	74 866 000
Current liabilities	29 025 738	37 642 142	33 487 000
Current ratio	**2.58**	**1.63**	**2.24**
Acceptable Norm	**1.5-2.1**	**1.5-2.1**	**1.5-2.1**

Table 5.4: Capital and operational expenditure ratio

	2015-2016	2016-2017	2017-2018
Total Operating Expenditure	217 708 031	247 450 211	218 704 000
Total Capital Expenditure	59 387 621	88 287 452	20 960 000
Total Operating expenditure/Total Capital expenditure	**27%**	**36%**	**10%**
Acceptable Norm	**10%-20%**	**10%-20%**	**10%-20%**

Table 5.5: Debt and revenue ratio

	2015-2016	2016-2017	2017-2018
Gross debtors closing balance	121 135 814	148 289 162	156 576 796
Gross debtors opening balance	104 526 089	121 135 814	148 289 162
Bad debts written off	5 522 112	-	10 122 429
Billed Revenue	61 571 297	61 571 297	30 681 000
Collection rate	**61%**	**56%**	**41%**
Acceptable Norm	**95%**	**95%**	**95%**

3	Municipal affordability	• Consumer debtors have increased by 18% from 2015/16 to 2016/17 and a further 6% increase in 2017/18. Total bad debts increased by 50% in 2017/18 indicating the affordability challenge for consumers. The large opening debtors balance in 2017/18 of R 148 million, makes up 62% of the total municipal expenditure in that FY. • The municipality is faced with high unemployment rates and payment of tariffs is a problem. The municipality needs to consider other revenue enhancement opportunities and determine an appropriate level of tariff that is affordable to consumers. MLM currently doesn't borrow funds but may need to consider doing so for specific infrastructure investment.
4	Funding strategy	• The municipality needs to establish a committee to implement its revenue collection strategy to improve collection rate and increase revenue from tariffs. • MLM needs to consider other sources of funding in order to improve revenue sources and service delivery.
5	Chapter confidence	• The reliability of data informing this chapter is considered moderate. Although a lot of effort has been spent validating the accuracy of the information, much of this information has been gained from multiple sources with different grades of confidence and has not been independently verified. The IDP, budgets and financial statements, were the primary documents used.
6	Chapter summary	• The municipality aims to provide reliable services while being viable and sustainable. • The overall financial health of the municipality needs to be significantly improved in order to be able to allocate budgets to capital and maintenance projects and improve service delivery to meet the targets. • The internal revenue of the municipality needs increasing to support sustainable operations, but there is an affordability challenge from customers with an already high debtors' rate (gross debtors opening balance 2017/18 R 148 million, after R 10 million written off as bad debt). • Currently the capital budget can only address approximately 8km of the total 600km backlog. • Consumers accounts are owing for greater than 120 days indicating the affordability pattern of consumers. The municipality needs to introduce a strict debt collection strategy to recover the debts. • To further improve the collectability, the municipality must implement various mechanisms to enhance the revenue collection. Amongst these is a proposed Revenue Enhancement project.

6 ASSET MANAGEMENT PRACTICES

An overview of existing asset management practice, improvement needs, priorities and proposed response plan.

1	Asset management practice context	A relatively low level of asset management practice maturity, especially in the field of physical asset management, exists amongst local municipalities (although it is steadily improving). The problem is exacerbated in MLM by very tight budget constraints and a skills challenge. MLM is a category B municipality and is coming off a low asset management practices base, however it has demonstrated its commitment to improving its practices by participating in the implementation of the Vuthela-Ilembe LED project. Strong leadership (and leadership support) is vital to affect any AM practices improvements.
2	Ongoing practice improvement activities	MLM as part of a local development programme has undergone a practices assessment and will look to implementing an improvement plan from the outcomes of the assessment. The aim is to improve the level of competence across all the practices categories.
3	Current AM performance	Currently the municipality has a level of practice of 'awareness' in three of the six practices categories (strategic planning, AM Plans, and organisational tactics). In the remaining categories (asset knowledge; information systems; and capital and maintenance management practices) the municipality was assessed to have practices at a weighted average between "aware" and having a "systematic approach". For full details see the practice assessment document, a summary of the current AM assessment results in shown in **Annexure E**. The roads and stormwater department also has specific challenges of limited staff resources for current practice which will hinder a move towards improvement. The risk of trained staff moving (once trained) should also be flagged for any planned improvement projects.
4	Priority improvement needs	The following priority improvement areas were identified and proposed to be included in an improvement plan phased over three years: • Enhancing the maintenance management process – this will directly benefit community members (year 1). • Enhancing the asset register – allows for cross-departmental integration as well as more easily mapping operational activities to strategic objectives (year 2). • Enhancement of the management processes associated with projects – including a review of this preliminary AMP to include improved data (year 3). **Figure 6.1** shows the envisaged impact of the phased improvement plan on the different practice categories. This phased approach is set out in the practices improvement plan and is estimated at a total of R 24.5 million to implement (including VAT, disbursements, software and service provision) for all three participating municipalities (MLM. KLM and IDM). The work breakdown structure of the improvement plan is detailed in **Annexure E** along with the associated cost estimates.

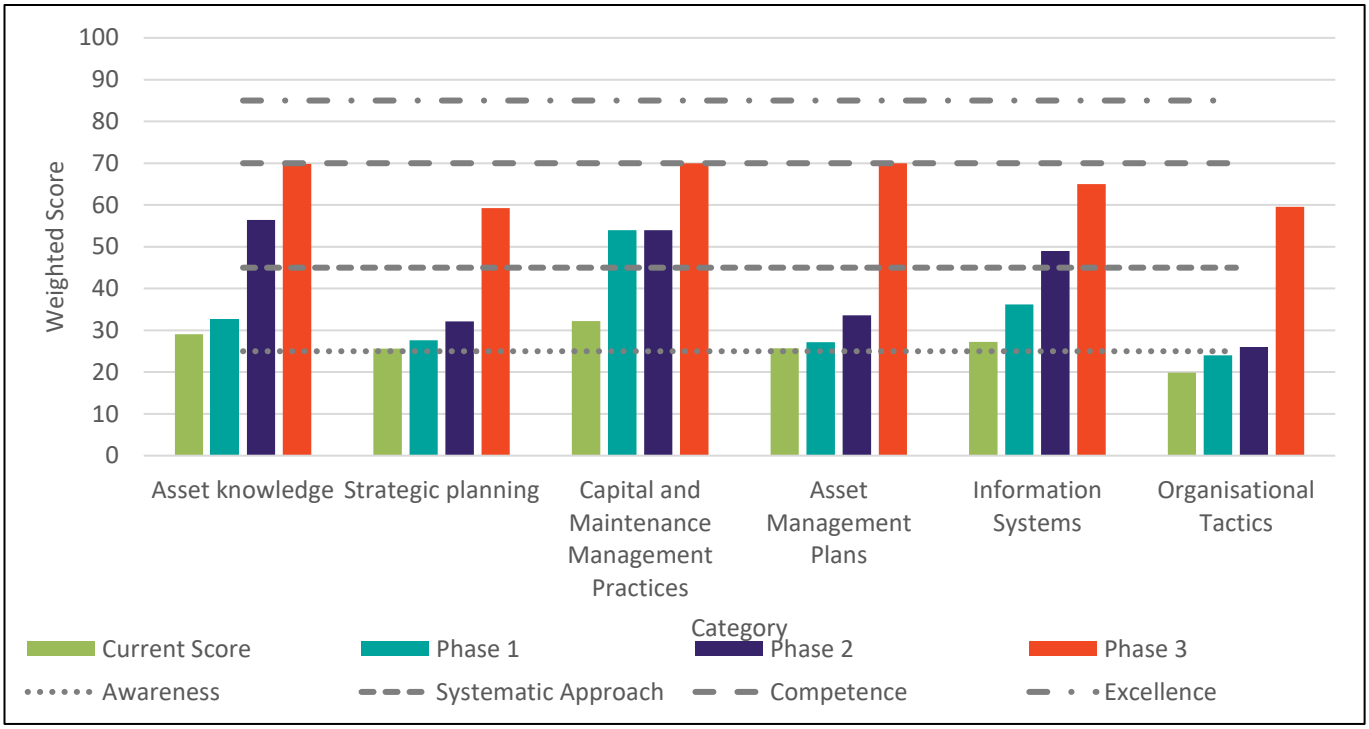

Figure 6-1: Overview of the proposed improvement in AM Practice

5	Chapter confidence	• In general data informing this chapter is considered to be moderate. Although effort has been spent validating the accuracy of the information, much of this information has been gained from multiple sources with different grades of confidence and has not been independently verified..
6	Chapter summary	• MLM currently has a practices level assessed to be 'awareness' for most of the categories of assessment with some small areas approaching a 'systematic approach'. • The proposed improvement plan prioritizes an improvement of the maintenance management process followed by an enhancement of the asset register and finally improving the management processes associated with projects; scheduled over a 3-year period. Funding will need to be identified to support this initiative – at an estimated cost of R 24.5 million (for three municipalities).

7 RISK MANAGEMENT PLAN

The sector's risk management objectives, summary of the key risks identified through-out the plan and the proposed mitigation and control measures.

1	Risk management objectives	The objective of risk management within MLM according to their risk policy, is to encourage the effective risk management that is imperative to the municipality's ability to fulfil its mandate, to meet the service delivery expectations of the public and the performance expectations within the municipality. The policy states: "The realisation of our strategic plan depends on us being able to take calculated risks in a way that does not jeopardise the direct interests of our stakeholders. Sound management of risk will enable us to anticipate and respond to changes in our service delivery environment, as well as make informed decisions under conditions of uncertainty. We subscribe to the fundamental principles that all resources will be applied economically to ensure: • The highest standards of service delivery; • A management system containing the appropriate elements aimed at minimising risks and costs in the interest of all stakeholders; • Education and training of all our staff to ensure continuous improvement in knowledge, skills and capabilities which facilitate consistent conformance to the stakeholder's expectations; and • Maintaining an environment, which promotes the right attitude and sensitivity towards internal and external stakeholder satisfaction. An entity-wide approach to risk management will be adopted by the municipality, which means that every key risk in each part of the municipality will be included in a structured and systematic process of risk management. It is expected that the risk management processes will become embedded into the municipality's systems and processes, ensuring that our responses to risk remain current and dynamic. All risk management efforts will be focused on supporting the municipality's objectives. Equally, they must ensure compliance with relevant legislation, and fulfil the expectations of employees, communities and other stakeholders in terms of corporate governance."
2	Historic risk management performance	• A risk register exists which indicates the risks identified by the municipality. • Past risk mitigation tactics have not always been entirely effective in addressing the risks experienced by the municipality.
3	Key risks	• Inability to effectively maintain existing municipal roads. The municipal area has 18 wards and due to current expansion programs, the infrastructure maintenance requirements are more than equipment and plant that is available. There are also constraints on staffing. • Flooding in certain areas during heavy rainfall

		• Constraints on the local economy due to inadequate access. The risk register is attached in **Annexure D.**
4	Key risk mitigation tactics	• Develop standard operating procedures for each business unit, to ensure that they are approved by respective Portfolio Committee. • Procure additional plant and machinery for internal teams , and outsource the balance of needs. • Compile storm water assessment lists, monitor flood prone areas, conduct hydrological assessments, and determine appropriate counter measures. • Non-asset risks can be mitigated by updating the current pavement management systems, keeping the asset register up to date and appointing qualified service providers.
5	Chapter confidence	• In general the reliability of data for this chapter is considered moderate as MLM has identified and noted possible risks impacting the roads and stormwater sector. Although a lot of effort has been spent validating the accuracy of the information, much of this information has been gained from multiple sources with different grades of confidence and has not been independently verified. • An asset register which is mSCOA aligned needs to be established to allocate accurate criticality and condition grades.

6	Chapter summary	• The municipality has a risk register. Mitigation tactics are listed.
		• The risks identified should form part of the Roads and Stormwater Department's KPI's, so their effectiveness can be measured.
		• Additional asset specific risks (relating to identified critical infrastructure) should also be added such as:
		  ○ Asset condition
		  ○ Performance
		• The risk register has been added as an annexure in the back of the asset management plan

8 PERFORMANCE PLAN

The sector's asset management performance objectives and forecast.

1	Performance objectives	• Key Performance Indicators (KPIs) and benchmarks are management tools for monitoring and improving the performance of people, systems, processes within the municipality. • Monthly reports linked to KPI's are submitted . • A fresh approach is required to record asset, and asset management
2	Historic performance	• The Municipal Scorecard consolidates service delivery targets set by Council/ Senior Management and provide an overall picture of performance for the municipality. • Components of the Municipal Scorecard are one-year detailed plans but not three-year capital plans. The necessary components include: • Monthly projections of revenue to be collected for each source; • Expected revenue to be collected NOT billed; • Monthly projections of expenditure (operating and capital) and revenue for each vote; Yearly sector targets are reported on a quarterly basis which are: • 250km of gravel roads to be repaired and maintained. • 40 stormwater catch-pits to be repaired. • 400m of v-drains to be constructed • 8 - 10km of new paved roads with associated stormwater to be constructed. • Non-financial measurable performance objectives in the form of targets and indicators; and • A detailed capital project plan broken down by ward over three years.
3	Chapter confidence	• In general data reliability is moderate to high, although a lot of effort has been spent validating the accuracy of the information, much of this information has been gained from multiple sources with different grades of confidence and has had to be trusted without independent verification.
4	Chapter summary	• Performance has been reported against a backdrop of a severely limited budget and limited staff capacity. • There is a need for improved planning and implementation tactics and controls to ensure maximum benefit of the available budget. Priorities need to address both social and economic development needs.

		• A review of KPI's should be conducted regularly to ensure that the desired service delivery objectives are achieved.

9 ANNEXURES

ANNEXURE A: PROJECTS AND PROGRAMMES

Projects and Programmes Years 1-5																				
Project/Programmes reference				**Fund Segment**		**Projects segment**					**Asset Hierarchy**			**Function segment**		**Cash flow**				
Programme (IDP/MTREF)	**Project name**	**Project number**	**Ward allocation**	**mSCOA(2)**	**mSCOA(3)**	**CAPEX/OPEX**	**mSCOA(2)**	**New/Existing/Land (mSCOA (3))**	**Expenditure type (mSCOA (4))**	**Asset Class (mSCOA (5))**	**Asset class (CDM)**	**Asset group type (CDM)**	**Contractor / internal**	**Function/Department**	**Core function/Non-core Function**	**2019**	**2020**	**2021**	**2022**	**2023**
Access Backlog	Backlog	001	All	Revenue	Capital	Capital	Infrastructure	New	Roads Infrastructure	Roads Infrastructure	All	All	internal	Road Transport	Core Function	226 749 854	213 630 243	223 243 604	233 289 566	243 787 597
Renewals(Existing)	Renewal	002	All	Revenue	Capital	Capital	Infrastructure	Existing	Roads Infrastructure	Roads Infrastructure	All	All	internal	Road Transport	Core Function	33 266 865	38 061 816	43 221 158	48 767 986	54 726 737
Growth	Growth	003	All	Revenue	Capital	Capital	Maintenance	New	Roads Infrastructure	Roads Infrastructure	All	All	internal	Road Transport	Core Function	2 748 166	2 879 875	3 017 896	3 162 531	3 314 099
Maintenance	Maintenance	004	All	Revenue	Capital	Operational	Maintenance	Existing	Roads Infrastructure	Roads Infrastructure	All	All	internal	Road Transport	Core Function	16 232 033	20 376 212	24 860 560	29 707 303	34 939 980
																278 998 937	274 950 166	294 345 239	314 929 409	336 770 436

Projects and Programmes Years 6-10

Project/Programmes reference				Fund Segment		Projects segment					Asset Hierarchy			Function segment		Cash flow				
Programme (IDP/MTREF)	Project name	Project number	Ward allocation	mSCOA(2)	mSCOA(3)	CAPEX/OPEX	mSCOA(2)	New/Existing/Land (mSCOA (3))	Expenditure type (mSCOA (4))	Asset Class (mSCOA (5))	Asset class (CDM)	Asset group type (CDM)	Contractor/ internal	Function/Department	Core function/Non-core Function	2024	2025	2026	2027	2028
Access Backlog	Backlog	001	All	Revenue	Capital	Capital	Infrastructure	New	Roads Infrastructure	Roads Infrastructure	All	All	internal	Road Transport	Core Function	254 758 038	266 222 150	278 202 147	290 721 243	303 803 699
Renewals(Existing)	Renewal	002	All	Revenue	Capital	Capital	Infrastructure	Existing	Roads Infrastructure	Roads Infrastructure	All	All	internal	Road Transport	Core Function	61 123 263	67 984 909	75 340 595	83 220 901	91 658 163
Growth	Growth	003	All	Revenue	Capital	Capital	Maintenance	New	Roads Infrastructure	Roads Infrastructure	All	All	internal	Road Transport	Core Function	3 472 930	3 639 374	3 813 795	3 996 575	4 188 114
Maintenance	Maintenance	004	All	Revenue	Capital	Operational	Maintenance	Existing	Roads Infrastructure	Roads Infrastructure	All	All	internal	Road Transport	Core Function	40 583 513	46 664 286	53 210 226	60 250 889	67 817 548
																359 939 769	384 512 744	410 568 788	438 191 635	467 469 553

ANNEXURE B: CONDITION GRADES

Generic Condition Grades			
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 and 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

ANNEXURE C: GLOSSARY OF TERMS

Activity	An activity is the work undertaken on an asset or group of assets to achieve a desired outcome.
Asset	A physical component of a facility which has value, enables services to be provided and has an economic life of greater than 12 months. Note: Accounting definition - An asset is a resource controlled by an entity because of past events and from which future economic benefits or service potential are updated to flow to the entity.
Asset hierarchy (IIMM)	A framework for segmenting an asset base into appropriate classifications. The asset hierarchy can be based on asset function, asset type, or a combination of the two.
Asset life (ISO 55000)	Period from asset creation to asset end-of-life.
Asset management (LGIAMG)	The process of decision-making, planning and control over the acquisition, use, safeguarding and disposal of assets to maximise their service delivery potential and benefits, and to minimize their related risks and costs over their entire life.
Asset Management Information System (LGIAMG)	A combination of processes, data and software applied to provide outputs required for effective asset management.
Asset management objectives (IIMM)	Specific outcomes required from the implementation of the asset management system.
Asset management plan	A documented plan developed for the management of one or a portfolio of assets that combines multi-disciplinary management techniques (including technical and financial) over the lifecycle of the asset in the most cost – effective manner to provide a specified level of service. The plan specifies approaches, programmes, projects, activities, resources, responsibilities and timeframes across the lifecycle of the asset(s) planned for, or over a timeframe appropriate for robust lifecycle planning. A significant component of the plan is a long-term cash flow projection for the activities.
Asset management policy (PAS 55-1: 2004 BSI)	The overall intentions and direction of an organisation related to the assets and the framework for the control of asset-related processes and activities.
Asset management practices (IIMM)	The asset management processes and techniques that an entity undertakes, such as demand forecasting, developing and monitoring levels of service and risk management.
Asset management strategy (IIMM)	The high-level long-term approach to asset management including asset management action plans and objectives for managing the assets.

Asset management system (ISO 55000)	A management system whose function 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.
Asset management team	The team appointed by an organisation to review and monitor the corporate asset management improvement programme and ensure the development of integrated asset management systems and plans consistent with organisational goals and objectives.
Asset register (LGIAMG)	A record of asset information considered worthy of separate identification for both asset accounting and strategic management purposes including inventory, historical, condition and construction, technical and financial information about each. Note: The unit of account in an asset register is a component (see definition of a component).
Asset system (ISO 55000)	Set of assets that interact or are interrelated.
Asset type (ISO 55000)	Grouping of assets having common characteristics that distinguish those assets as a group or class.
Audit (ISO 55000)	Systematic, independent and documented process for obtaining audit evidence and evaluating it objectively to determine the extent to which the audit criteria are fulfilled.
Capamunicipality (IIMM)	Maximum output that can be produced or delivered using existing network or infrastructure.
Capital (financial concept of)	Net assets of an organisation.
Capital (physical concept thereof)	The productive capamunicipality of an organisation as measured in depreciated replacement cost.
Capital expenditure (CAPEX)	Expenditure used to create new assets, increase the capamunicipality of existing assets beyond their original design capamunicipality or service potential, or to returns the service potential of the asset or expected useful life of the asset to that which it had originally. CAPEX increases the value of an asset.
Capital upgrading	Enhances the service potential of the asset or the economic benefits that can be obtained from use of the asset and may also increase the life of the asset beyond that initially expected.
Carrying amount	The amount at which an asset is recognised after deducting any accumulated depreciation and accumulated impairment losses.
Cash flow	The stream of costs and / or benefits over time resulting from a project investment or ownership of an asset.
Class of assets (GRAP)	It is a grouping of assets of a similar nature or function in an entity's operations that is shown as a single item for disclosure in the financial statements.

Competence (ISO 55000)	The ability to apply knowledge and skills to achieve intended results.
Component (IIMM)	A component (Note 1) is a specific part of a complex item (Note 2) that has independent physical or functional identity and specific attributes such as different life expectancy, maintenance and renewal requirements and regimes, risk or criticality. Note 1: A component is separately recognised and measured (valued) in the organisation's asset register as a unique asset record, in accordance with the requirements of GRAP 17 to componentise assets. Note 2: A complex item is one that can be disaggregated into significant components. Infrastructure and buildings are considered complex items.
Comprehensive Municipal Infrastructure Plan	A plan that provides a holistic overview of existing service performance, a vision of future performance scenarios, the risks, priorities, funding and tariff implications, as a strategic input to the Integrated Development Planning process.
Condition (IIMM)	The physical state of the asset.
Condition assessment or condition monitoring (IIMM)	The inspection, assessment, measurement and interpretation of the resultant data, to indicate the condition of a specific component to determine the need for some preventive or remedial action.
Continual improvement (ISO 55 000)	Recurring activity to enhance performance.
Corrective maintenance	Maintenance carried out after a failure has occurred and intended to restore an item to a state in which it can perform its required function. Corrective maintenance can be planned or unplanned.
Critical assets (IIMM)	Those assets that are likely to result in a more significant financial, environmental and social cost in terms of impact on organizational objectives and service delivery.
Current replacement cost (IIMM	The cost the entity would incur to acquire the asset on the reporting date. The cost is measured by reference to the lowest cost at which the gross future economic benefits could be obtained in the normal course of business or the minimum it would cost, to replace the existing asset with a new modern equivalent asset (not a second hand one) with the same economic benefits (gross service potential) allowing for any differences in the quantity and quality of output and in operating costs.
Decommissioning (IIMM)	Actions required to take an asset out of service.
Deferred maintenance	The portion of planned maintenance work necessary to maintain the service potential of an asset that has not been undertaken in the period in which such work was scheduled to be undertaken.
Demand management	The active intervention in the market to influence demand for services and assets with forecast consequences, usually to avoid or defer CAPEX expenditure. Demand management is based on the notion that as needs are satisfied expectations rise

	automatically and almost every action taken to satisfy demand will stimulate further demand.
Depreciable amount (GRAP)	The cost of an asset, or other amount substituted for cost, less its residual value.
Depreciated replacement cost (IIMM)	The replacement cost of an asset less accumulated depreciation calculated on the basis of such cost to reflect the already consumed or expired economic benefits of the asset.
Depreciation (GRAP)	Depreciation is the systematic allocation of the depreciable amount of an asset over its useful life.
Disposal (IIMM)	Actions necessary to decommission and dispose of assets that are no longer required.
Economic life (IIMM)	The period from the acquisition of the asset to the time when the asset, while physically able to provide a service, ceases to be the lowest cost alternative to satisfy a level of service. The economic life is at the maximum when equal to the physical life, however obsolescence will often ensure that the economic life is less than the physical life.
Expected useful life	The extent of life of an asset over which it can be expected to meet the required performance given its operational environment (including parameters such as climate, soil conditions, topography, utilisation, and operations and maintenance regime), and over which it will be productively used.
Facility (IIMM)	A complex comprising many assets (e.g. a hospital, water treatment plant, recreation complex, etc.) which represents a single management unit for financial, operational, maintenance or other purposes.
Failure Modes, Effects and Criticality Analysis (IIMM)	A systematic, logical risk-based maintenance approach aimed at maximising the reliability of plant and equipment assets.
Fixed asset	A tangible item of either property, plant or equipment that is of material value and is held by a municipality for use in the production or supply of goods or services, for rental to others, or for administrative purposes, and which is expected to be used during more than one reporting period (financial year). A fixed asset can be either movable or immovable and the municipality must reasonably expect to derive economic benefits from it, or use it in service delivery for a period extending beyond one financial year.
Geographic Information System	Software which provides a means of spatially viewing, searching, manipulating, and analyzing an electronic database.
Integrated Development Plan	A five-year plan which local government is required to compile to determine the development needs of the municipality. The projects within the IDP is also linked to the municipality's budget.

Impairment loss (GRAP)	An impairment loss of a cash-generating asset is the amount by which the carrying amount of an asset exceeds its recoverable amount.
Incident (ISO 55000)	Unplanned event or occurrence resulting in damage or other loss.
Infrastructure assets (LGIAMG)	Stationary systems forming a network and serving whole communities, where the system as a whole is intended to be maintained indefinitely at a particular level of service potential by the continuing replacement and refurbishment of its components.
Level of service (IIMM)	Levels of service statements describe the outputs or objectives an organisation or activity intends to deliver to customers.
Life (LGIAMG)	A measure of the anticipated life of an asset or component, such as time, number of cycles, distance intervals etc.
Lifecycle (IIMM)	The time interval that commences with the identification of the need for an asset and terminates with the decommissioning of the asset or any liabilities thereafter.
Lifecycle asset management	Encompasses all asset management strategies and practices associated with an asset or group of assets that results in the lowest lifecycle cost necessary to achieve stated service requirements within acceptable risk parameters.
Lifecycle cost (IIMM)	The total cost of an asset throughout its life including planning, design, construction, acquisition, operation, maintenance, renewal and disposal costs.
Maintenance	All actions, planned and unplanned, intended to ensure that an asset performs a required function to a specific performance standard(s) over its expected useful life by keeping it in as near as practicable to its original condition, including regular recurring activities to keep the asset operating, but specifically excluding renewal. Note: Maintenance also specifically excludes restoring the condition or performance of an asset following a recognised impairment event, which would be classified as either renewal or upgrading, depending on the circumstances.
Maintenance of capital	Expenditure to ensure that the productive or operating capamunicipality of the asset base is maintained over time. The value vested in capital assets is maintained when the organisation has at least as much capital at the end of the period as it had at the beginning thereof.
Maintenance expenditure	Recurrent expenditure as required to ensure that the asset achieves its intended useful life. Maintenance is funded through the organisation's operating budget, and such expenditure is expensed in the organisation's statement of financial performance.
Maintenance plan (LGIAMG)	Describes the planned and unplanned maintenance actions for an asset, facility or portfolio of assets, with intended delivery methods and schedules, budget requirements and responsible parties.

Maintenance objectives (IIMM)	Objectives for what maintenance must achieve to ensure the assets are in the right condition to meet the needs of the organisation. Maintenance performance measures and targets are the means of assessing whether the maintenance objectives are being met.
Maintenance standards (LGIAMG)	The standards set for the maintenance service, usually contained in preventive maintenance schedules, operation and maintenance manuals, codes of practice, estimating criteria, statutory regulations and mandatory requirements, in accordance with maintenance quality objectives.
Maintenance strategy (IIMM)	Identifies the tactics and tools that will be used to deliver the maintenance plan, as well as defining the maintenance roles and responsibilities.
Material (GRAP)	Omissions or misstatements of items are material if they could, individually or collectively, influence the decisions or assessments of users made based on the financial statements. Materiality depends on the nature or size of the omission or misstatement judged in the surrounding circumstances. The size of the information item, or a combination of both, could be the determining factor.
Modern equivalent asset (IIMM)	The most cost-efficient asset currently available that will provide equivalent functionality to the asset that will be replaced (or are currently being valued using the DRC methodology).
Monitoring (ISO 55000)	Determining the status of a system, a process or an activity.
Objective (adjusted from ISO 55000)	Result to be achieved at strategic, tactical or operational level. Objectives can be set in a variety of domains or outcome areas (e.g. economic, social or environmental outcomes), or can relate to elements of the organisation (e.g. corporate or units in the organisation), or can relate to processes, services, products, programmes and projects.
Obsolescence (optimised decision-making guidelines)	The asset can no longer be maintained or suffers a loss in value due to a decrease in the usefulness of the asset, caused by technological change, or changes in people's behavioural patterns or tastes, or environmental changes.
Operating expenditure (OPEX)	Expenditure necessary to provide services such as water purchases and water distribution including costs related to staff costs, administration costs, consumables, maintenance and repairs and feasibility studies.
Operation	The active process of utilising an asset which will consume resources such as manpower, energy, chemicals and materials. Operation costs are part of the lifecycle costs of an asset.
Optimised decision-making (IIMM)	Two definitions are: (1) A formal process to identify and prioritise all potential solutions with consideration of financial viability, social and environmental responsibility and cultural outcomes and (2) an optimisation process for considering and prioritising all options to rectify existing or potential performance failure of assets. The process encompasses NPV analysis and risk assessment.

Performance (ISO 55 000)	Measurable result of either quantitative or qualitative nature that can relate to the management of activities, processes, products or services, systems or organisations.
Performance measure (IIMM)	A qualitative or quantitative measure used to measure actual performance against a standard or other target. Performance measures are used to indicate how the organisation is doing in relation to delivering levels of service.
Performance monitoring (LGIAMG)	Continuous or periodic quantitative and qualitative assessments of the actual performance compared with specific objectives, targets or standards .
Planned Maintenance	Planned maintenance activities fall into the following categories: Corrective maintenance – (reactive or planned), necessary to ensure the reliability or sustain the design life of an asset. Preventative – maintenance (interval- or condition-based), that can be initiated without routine or continuous checking (e.g. using information contained in maintenance manuals or manufacturers' recommendations). Predictive – condition monitoring activities used to predict failure.
Policy (adjusted from ISO 55 000)	Intentions and direction of an entity as formally expressed in a documented statement approved by top management and communicated throughout the entity.
Predictive action (ISO 55 000)	Action to monitor the condition of an asset and predict the need for preventative or corrective action. Also referred to condition monitoring or performance monitoring.
Preventative action (ISO 55 000)	Action to eliminate the cause of a potential nonconformity or other undesirable potential situation.
Preventative maintenance	Maintenance carried out at pre-determined intervals, or corresponding to prescribed criteria, and intended to reduce the probability of failure or the performance degradation of an item. Preventative maintenance is planned or carried out on opportunity.
Property, plant and equipment (GRAP)	Property, plant and equipment are tangible items that are held for use in the production or supply of goods or services, for rental to others, or for administrative purposes and are expected to be used during more than one reporting period.
Recoverable amount (GRAP)	The higher of an assets fair value less costs to sell and its value in use.
Rehabilitation	Works to rebuild or replace parts or components of an asset, to restore it to a required functional condition and extend its life, which may incorporate some modification. Generally, involves repairing the asset using available techniques and standards to deliver its original level of service (e.g. relining bulk raw water pipelines) without resorting to significant upgrading or replacement.
Reliability-centred maintenance (IIMM)	A process for optimising maintenance based on the reliability characteristics of the asset.

Renewal	Expenditure on an existing asset which returns the service potential of the asset or expected useful life of the asset to that which it had originally. Note 1: Renewal can include works to replace existing assets or facilities with assets or facilities of equivalent capamunicipality or performance capability. Note 2: Expenditure on renewals is funded through the organisation's capital budget, and such expenditure is recognised in the organisation's statement of financial position.
Repair	Action to restore an item to its previous condition after failure or damage.
Replacement	The complete replacement of an asset that has reached the end of its life, to provide a similar, or agreed alternative, level of service.
Remaining useful life (IIMM)	The time remaining until an asset ceases to provide the required service level or economic usefulness.
Residual value (GRAP)	It is the estimated amount that an entity would currently obtain from disposal of the asset, after deducting the estimated costs of disposal, if the asset was already of the age and in the condition expected at the end of its useful life.
Revenue	An increase in economic benefits during an accounting period through an enhancement of an asset or through a decrease in a liability.
Risk (IIMM)	The effect of uncertainty on objectives. Risk events are events which may compromise the delivery of the entity's strategic objectives.
Risk controls (IIMM)	Measures to manage or mitigate identified risks.
Risk exposure (IIMM)	The level of risk to which an entity is exposed to. Risk exposure is a function of the probability of an occurrence times the impact of that occurrence.
Risk management (IIMM)	The application of a formal process that identifies the exposure of an entity to service performance risk and determines appropriate responses.
Routine maintenance (IIMM)	Day to day operational activities to keep the asset operating (e.g. replacement of light bulbs, cleaning of drains, repairing leaks, etc.) and which form part of the annual operating budget, including preventative and periodic maintenance.
Strategic plan	Strategic planning involves making decisions about the long-term goals and strategies of an organisation. Strategic plans have a strong external focus, cover major portions of the organisation and identify major targets, actions and resource allocations relating to the long-term survival, value and growth of the organisation.
Unplanned maintenance (IIMM)	Corrective work required, that is reactive in nature (not scheduled or preventative – triggered by failure, inspection results or reports), intention is to restore an asset to working condition, so it can continue to deliver the required service or to maintain its level of security and integrity.

Upgrading	The replacement of an asset or addition /replacement of an asset component which materially improves the original service potential of the asset.
Useful life (GRAP)	The useful life of an asset is the period over which an asset is expected to be available for use by an entity or the number of production or similar units expected to be obtained from the asset by an entity .
Valuation	Estimated asset value, which may depend on the purpose for which the valuation is required (e.g. Replacement value for determining maintenance levels or market value for lifecycle costing).
Value in use (GRAP)	The present value of the asset's remaining service potential of a non-cash-generating asset or the present value of the estimated future cash flows expected to be derived from the continuing use of an asset and from its disposal at the end of its useful life of a cash generating asset.

ANNEXURE D: RISK REGISTER

Risk Name	Department	Risk Description	Root cause	Consequences	Inherent Risk	Controls Details	Current Control Rating	Residual Risk (Current)	Achieved, In Progress or Not Achieved	Comment
1. Municipal Grants - MIG, NDPG, INEP etc.	Technical Services	Under-spending on conditional grants	Delays in SCM processes Poor consequence management	Loss of grant funding Poor/Delayed Service Delivery Social ills that will contribute to public unrest	5/5	Appointed Bid Committees with chairpersons The evaluation of tenders are performed on site by consultants as this prevents time delays/queries Active role with consultants and contractors to ensure that any issues relating to cash flow is managed and cession agreements are signed with suppliers	4/5	1/5	Not achieved Achieved and Ongoing Not achieved Achieve In progress	-The plan has been documented and communicated with the consultants. Furthermore, Monitored through assessment of consultant once a quarter. Currently there some complying and some that are not due to issues stemming from the company not having required skills to perform the evaluation whilst the bigger companies are well capacitated to meet our requirements of a 2 week turnaround time Bid committee performance is monitored at the MANCO trough SCM reports and the technical services director provides feedback where there are obstacles and delays (FU 15/02/2018) The workshopping of bid committees has not yet occurred however the respective bid committees have been reconstituted taking into account new appointments (FU 15/02/2018) Refer to CFO's scorecard and SCM forms part of the CFO scorecard. Also there is a formal report taken to FPC and MANCO on SCM processes and delays

Risk Name	Department	Risk Description	Root cause	Consequences	Inherent Risk	Controls Details	Current Control Rating	Residual Risk (Current)	Achieved, In Progress or Not Achieved	Comment
										There are dedicated days set forth in the council calendar and the BSC has taken a decision to have set meetings every Thursday from 2pm onwards. The other departments are yet to finalise set dates and rather work as per dates set forth in the council calendar usually on Fridays
2. PMU Staff Capacity	Technical Services	PMU under-staffed with the following vacancies: PMU Manager; Senior Civil Technician; Assistant manager: project administration; 2 civil technicians ISD officer	Municipal Financial Constraints	Delays/poor with service delivery Poor staff morale due to staff performing non-remunerated functions	4/5	Applied to MIG to utilise the 5 percent top slice to capacitate the PMU with certain critical vacant positions (short term intervention) Current staff within the PMU are performing unremunerated functions The organogram has been amended to clearly identify posts within PMU that are prioritised and proposed for grant funding	2/5	2/5	Achieved Not yet Due	ISD: position has been advertised and filled as at the 01st February 2018. Civil Technicians: Due to financial constraints, permanent positions were changed to 5 civil technician interns who have been advertised and appointed as at the December 2017 (FU 15/02/2018) The issue of expanding of capacity will be discussed in the future strategic planning meetings and in the review of the organogram. The PMU capacity has bene increased as per the above and currently there is a need to fill the electrician assistant post and the additional mechanic however this needs to be budgeted and prioritised and will most likely occur once the cash flow the municipality is stabilized The post however are being taken to the organogram review scheduled for Monday 19/02/2018 (FU 15/02/2018)

Risk Name	Department	Risk Description	Root cause	Consequences	Inherent Risk	Controls Details	Current Control Rating	Residual Risk (Current)	Achieved, In Progress or Not Achieved	Comment
3. Standard Operating Procedures	Technical Services	There is no developed standard operating procedures in place for areas of high risk such as roads maintenance, electricity, mechanical workshop and PMU	Lack of Operational Capacity	Inability to transfer knowledge and skills Inability to continue with normal operating activities if person is absent Poor service delivery	4/5	Developed work plan and monthly plans on activities that are required	1/5	3/5	Not Achieved Not Achieved	-SOPs for all mentioned units have been drafted however not yet approved. This issue is still pending from November 2017 and is awaiting the sitting of the Portfolio committee where the issues of SOP's will be discussed prior to taking to council for approval (FU 15/02/2018) This issue is still pending from November 2017 and is awaiting the sitting of the Portfolio committee where the issues of SOP's will be discussed prior to taking to council for approval (FU 145/02/2018) SOPs should be approved by the end of March 2018 (FU 145/02/2018)
4. PPE (Plant) Insufficient for increasing service delivery demand	Technical Services	The municipal area has 18 wards and due to current expansion programs the infrastructure maintenance requirements are in excess of equipment and plant that is available	Municipal Financial Constraints	Poor/No service delivery Inability to maintain developed assets Community unrest and dissatisfaction	5/5	Use of additional hired plant to meet the need for maintenance plan. Monthly maintenance schedules developed to ensure that scarce equipment are broadly distributed for all wards Developed a maintenance policy	1/5	4/5	Achieved	-Application was submitted to CoGTA (Small Town Regeneration Grant) however we were informed that they no longer provide this funding. (FU 145/02/2018) The maintenance policy was tabled at the IDTSPC in June 2017 and subsequently taken to council for

Risk Name	Department	Risk Description	Root cause	Consequences	Inherent Risk	Controls Details	Current Control Rating	Residual Risk (Current)	Achieved, In Progress or Not Achieved	Comment
									In progress	approval and adoption on 29 June 2017. However council was unhappy with the issue of documentation of minutes of IDTSPC and felt that the policies should be reverted to the IDTSPC for further review. Due to the IDTSPC not sitting from the month of November to current (15th February 2018) the matter was yet to be taken to this portfolio. The plan is for the policy to be tabled in the March 2018 IDTSPC and thereafter taken to the April Council meeting for adoption and approval(FU 145/02/2018)
5. Non-prioritization on critical electrical post (Manager – Electricity)	Technical Services	With the expansion of the electrcity distribution function of the municipality there is currently incumbent meeting the minimum requirements (government certificate of competency and professional registration)	Municipal Financial Constraints	Non-compliance with the prevailing legislation resulting in fines and risk to staff and community lives	5/5	Ad hoc use of consultants who meet the minimum requirements Mentoring and coaching of identified candidate to undertake registration processes	1/5	4/5	Ongoing	-Due to lack of funding, the incumbent Mr. S. Msweli has been unable to attend critical training namely government certificate of competency and professional recognition. Furthermore there is also a risk of the new electrician Mr. D. Naidoo and Mr. M. Mhlaba who is electricians under the electrical section has not received any training nor have they received any competencies and as such are performing duties that they are not fully able to perform. This issue cannot be resolved until the adjustment budget process whereby training session budgeted for (FU 15/02/2018).

ANNEXURE E : VUTHELA ILEMBE LED PROGRAMME WORK BREAKDOWN STRUCTURE FOR AM PRACTICES ASSESSMENT

NO	ACTIVITY	TASKS	OUTCOMES	TOTAL PER ACTIVITY MLM (Fees including disbursement, software, vat, total)	TOTAL PER ACTIVITY KLM (Fees including disbursement, software, vat, total)	TOTAL PER ACTIVITY IDM (Fees including disbursement, software, vat, total)	TOTAL SHARED COST PER ACTIVITY (Fees including disbursement, software, vat, total)	TOTAL PER ACTIVITY (Fees including disbursement, software, vat, total)
1	**Maintenance management efficiency and effectiveness improvement**	Procure and implement a Computerised Maintenance Management System (CMMS)	Improved O&M data and reporting capabilities that allow for decision making	2 828 325	4 713 875	3 771 100		**11 313 300**
		Prepare a maintenance management improvement strategy	Improvement to the management procedures for O&M actives	516 128	516 128	516 128		**1 548 384**
		Review and clearly define asset management roles and establish corporate AM oversight structure	A defined list of asset management roles in line with a corporate AM oversight structure	311 912	311 912	311 912		**935 736**
2	**Enhance, standardise and structure the asset register for strategic (physical) and tactical life cycle management improvement**	Align and enhance asset register data to support all asset life decisions	Asset register data collected and recorded at the appropriate level	4 551 680	4 551 680	4 551 680		**13 655 040**
		Upgrade and integrate electronic, central and spatially enabled asset register system	Improved MSCOA compliant asset register data and reporting capabilities that allow for decision making	3 121 793	5 435 397	4 627 208		**13 184 399**
		Enhance the maintenance management system to ensure seamless integration with the enhanced asset register system	Seamless integration between the CMMS and asset register systems					
		Link to expert/ specialist systems (e.g. PMS data)	Seamless integration between specialist, CMMS and asset register systems	1 774 249	2 957 082	2 630 031		**7 361 362**
3	**Enhance, standardise project management practices**	Upgrade and integrate a spatially enabled electronic system for Project Management	Improved project management data and reporting capabilities that allow for decision making. Seamless integration with Asset Register and CMMS systems.	2 330 537	3 884 229	3 107 383		**9 322 149**
		Enhance the maintenance management and asset register system to ensure seamless integration with the enhanced project management system	Seamless integration between the project control system, maintenance and asset register systems.					

		Ensure all contractors provide the required, standardised information on project completion	A standard that contractors need to adhere to on project close out.				831 850	**831 850**

NO	ACTIVITY	TASKS	OUTCOMES	TOTAL PER ACTIVITY MLM (Fees including disbursement, software, vat, total)	TOTAL PER ACTIVITY KLM (Fees including disbursement, software, vat, total)	TOTAL PER ACTIVITY IDM (Fees including disbursement, software, vat, total)	TOTAL SHARED COST PER ACTIVITY (Fees including disbursement, software, vat, total)	TOTAL PER ACTIVITY (Fees including disbursement, software, vat, total)
4	**Review and update Asset Management Plans (AMPs) and a Strategic Asset Management Plan (SAMP) for all immovable assets**	Review and update water Asset Management Plans (AMPs)	Review the AMPs that were initially developed in 2019.			929 640		**929 640**
		Review and update roads Asset Management Plans (AMPs)	Review the AMPs that were initially developed in 2019.	716 280	716 280			**1 432 560**
		Review and update electrimunicipality Asset Management Plans (AMPs)	Review the AMPs that were initially developed in 2019.	830 580	830 580			**1 661 160**
		Review and update solid waste Asset Management Plans (AMPs)	Review the AMPs that were initially developed in 2019.	553 720	553 720			**1 107 440**
5	**Risk Management Strategy**	Develop a Risk Management Strategy focused on infrastructure	Established a Risk Management Strategy focused on infrastructure				469 392	**469 392**
Total				**17 535 205**	**24 470 883**	**20 445 082**	**1 301 242**	**63 752 411**