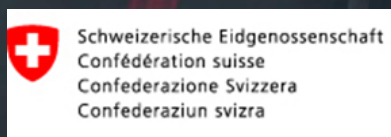




KwaDukuza Local Municipality

ASSET MANAGEMENT PLAN

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



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T +27 (0)21 880 2712 **F** +27 (0)21 880 0686 **TOLL FREE** 080 123 IMQS

WWW.IMQS.CO.ZA

STELLENPARK, BUILDING 4 & 5, CNR R44 & SCHOOL ROAD, JAMESTOWN, STELLENBOSCH, SOUTH AFRICA, 7600 | PO.BOX 12002, DIE BOORD, 7613, SOUTH AFRICA

IMQS Software (Pty) Ltd. | Reg. No. 2000/019581/07 | VAT 4820194431

Directors: Z Mayet, MS Mokgosi, DR Knight

APPROVAL AND CHANGE HISTORY

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0.1	Adhnaan Bhabha	First draft	20/03/2019
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0.6 and 0.7	Rob Childs & Adhnaan Bhabha	Review and updates	6-31/05/2019
0.8	Adhnaan Bhabha	Final Approved Document	02/08/2019

APPROVED:



Adhnaan Bhabha BEng (Civil) CWEP

Asset Management Engineer

02/08/2019

Date

Mr. Muzi Sithole

(Roads and Stormwater)

Date

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	Expanded 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
KDM	KwaDukuza Local Municipality
Km	Kilometer
km²	Square kilometer
LOS	Level of service
M	Meter

MFMA	Municipal Finance Management Act
MIG	Municipal infrastructure grant
Mill	Million
MIS	Management information system
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.

TABLE OF CONTENTS

E	Executive Summary	1
1	Introduction.....	1-1
2	Levels of Service	2-1
3	Future Demand.....	3-1
4	Life-cycle Plan	4-1
5	Financial Plan.....	5-1
6	Asset Management Practices.....	6-1
7	Risk Management Plan	7-1
8	Performance Plan	8-1
9	Annexures	i
	Annexure A: Projects and programmes	i
	Annexure B: Condition grades	iii
	Annexure C: Glossary of terms.....	iv
	Annexure D: Risk Register	xiii
	Annexure E : Vuthela Ilembe LED programme Work Breakdown Structure for AM practices assessment	
	xviii	

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	<ul style="list-style-type: none"> To plan effective and efficient infrastructure-based service delivery for the roads and stormwater sector in KwaDukuza Local Municipality (KDM), utilising 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	OPERATIONAL CONTEXT	
2.1	Municipal mandate	<ul style="list-style-type: none"> 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. KDM’s mandate as a municipality includes the management of municipal roads and stormwater services in their area of jurisdiction. The N2 National Road is the responsibility of the Department of Transport and the Provincial Main Road P2.is the responsibility of the KZN Provincial Department of Transport. The roads labelled ‘district roads’ are the responsibility of the Ilembe District Municipality. The roads shown in the diagram below as “streets” are the responsibility of KDM.

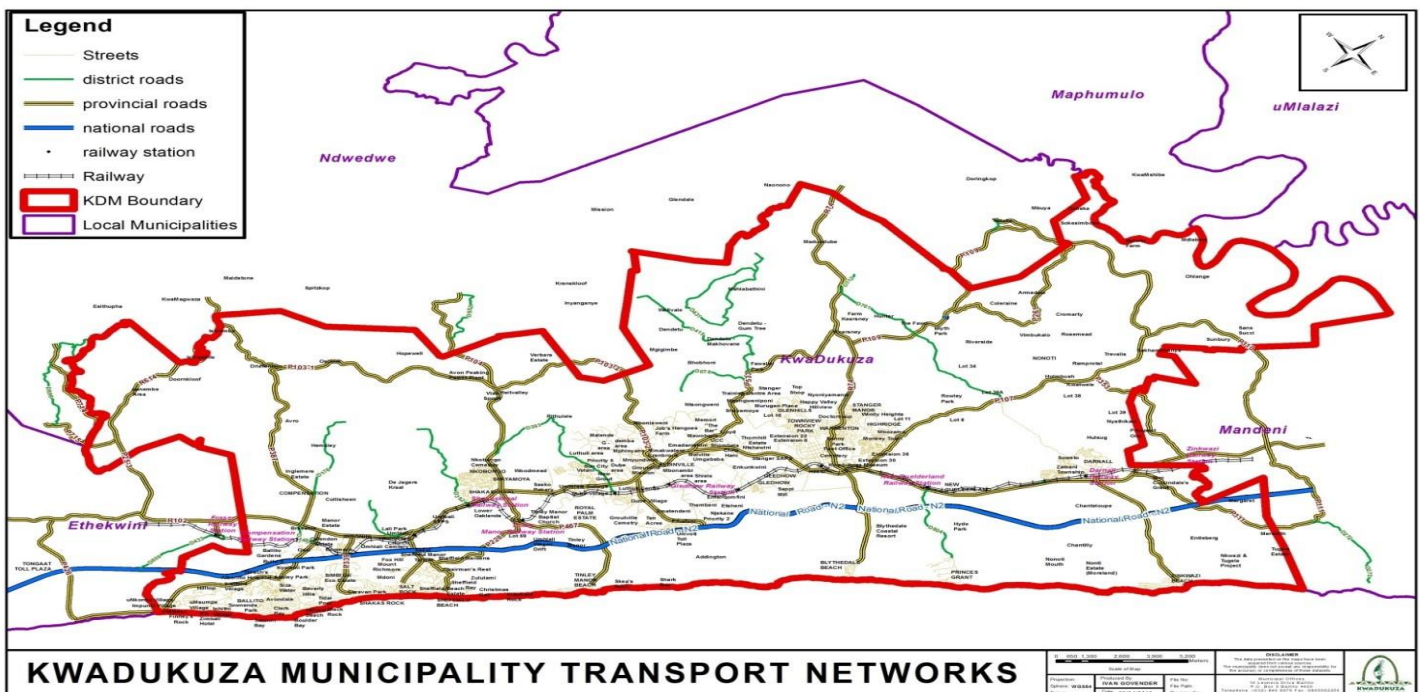


Figure 0.1: Roads Network which exists within KDM

2.2	Asset scope	<ul style="list-style-type: none"> • The roads and stormwater asset portfolio comprises: <ul style="list-style-type: none"> ○ Bridges (Inyaka Tugela River Bridge is the major one) ○ Roads (gravel roads and paved roads) ○ Tracks ○ Road furniture (sidewalks, road signs and guardrails); and ○ Stormwater infrastructure. • KDM has approximately 754km of roads network of which 622km is paved. • The municipality also maintains about 76km of gravel roads and 56km of tracks within its jurisdiction.
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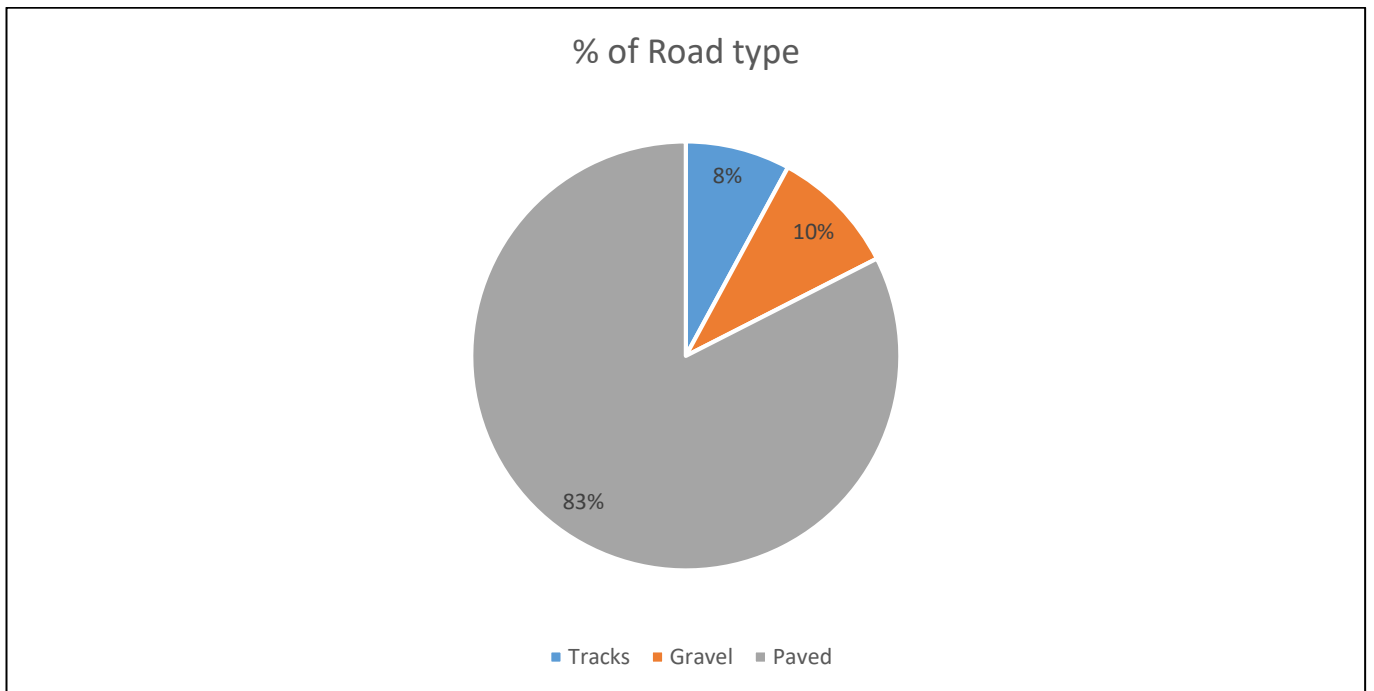


Figure 0.2: Distribution of roads and stormwater assets

2.3	Developmental context of the municipality and key statistics	<ul style="list-style-type: none"> • The municipality has a predominantly urban population, currently estimated at 281 052 people in 2018 (92 714 households), showing migration trends toward urban areas. The area has a high unemployment rate but has identified tourism potential in some areas, the urban population stands at 83% while tribal and farm areas account for 10% and 8% respectively. • KDM is the economic hub of the Ilembe District Municipality (IDM). The key industrial activity is commerce, followed by the manufacturing sector and tourism. Located between two port cities (Durban and Richards Bay) provides KDM with an opportunity to benefit from trade and economic growth initiatives. KDM has a relatively high revenue base and doesn't rely on grant funding for service provision.
2.4	Stakeholders	<ul style="list-style-type: none"> • Community - users of buses, mini bus taxis and private vehicles, cyclists and pedestrians.

		<ul style="list-style-type: none"> • 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, in the case of KwaDukuza impact on the local economy. • Finance and planning office of the municipality. • Department of Transport (DoT) is responsible for national roads which provides access to secondary and provincial roads, which in turn provides access to municipal roads.
2.5	Plan maturity (and implications on its use)	<ul style="list-style-type: none"> • KDM, 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 is graded in terms of data confidence.
3	CURRENT STATUS	
3.1	Infrastructure status	<ul style="list-style-type: none"> • The table below represents the status of the assets according to the current financial asset register. • Based on the financial asset register (prepared on the cost basis) the entire portfolio depreciates at R30 million per annum (2,3% of the portfolio is consumed annually). • The current replacement cost (CRC) based on the number of households is estimated to be R2 272 million. • The gravel roads need attention as they are currently in the worst condition of all asset groups. • Significant stormwater infrastructure such as pipes and kerbing exist within the major urban areas i.e. Ballito, Stanger (Kwadukuza) and Zimbali. • Overall the portfolio, according to existing available data, is in good health. • The stated values of the assets indicate they are in good to very good condition (based on the carrying value to cost ratio), accuracy and completeness of the data was not be verified.

Table 0.1: Condition Grade per Asset Group

	COST	DEPRECIATION	CARRYING VALUE	CV/COST	CONDITION
Bridges	17 079 791	286 531	16 434 821	96%	Very Good
Gravel Roads	20 612 486	1 033 823	4 056 207	20%	Poor
Paved Road	587 877 900	13 227 638	427 543 653	73%	Very Good
Road Furniture	90 960 917	4 185 088	62 965 574	69%	Good
Road Structural Layer	318 237 261	6 141 967	215 043 852	68%	Good
Stormwater	261 523 171	5 403 347	188 885 567	72%	Very Good
Footpaths	415 091	10 347	393 254	95%	Very Good
Grand Total	1 296 706 617	30 288 741	915 322 928	71%	Very Good

3.2	Spatial structure	<ul style="list-style-type: none"> Main urban centres, important nodes and development routes are shown in Figure 0.3. A theme of development along the coast 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.
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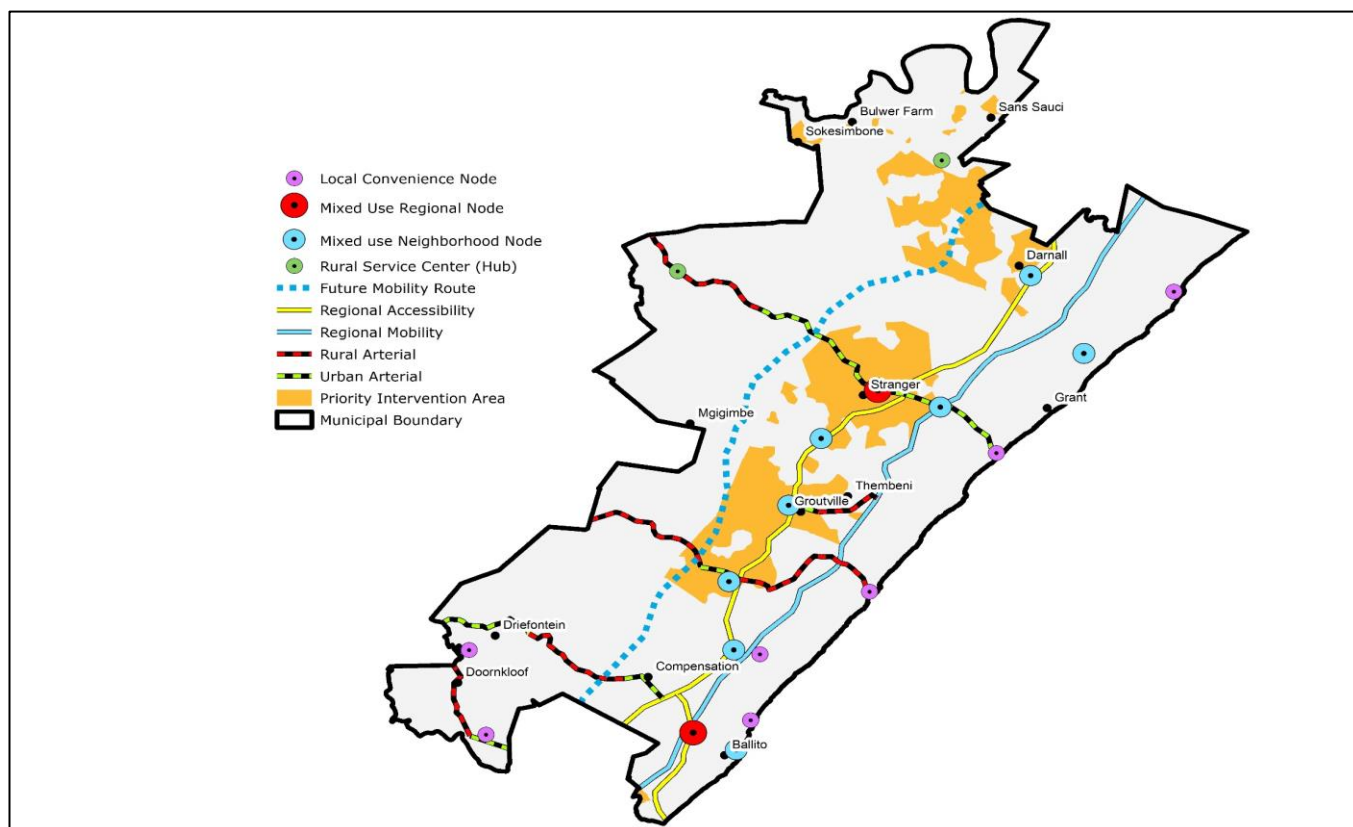


Figure 0.3: Major Corridors and Nodes within Kwadukuza Local Municipality)

3.3	Service delivery operations	<ul style="list-style-type: none"> • KDM manages the maintenance of its roads and stormwater infrastructure in house. • All major roads projects are contracted to local contractors and when in house expertise / capacity is not available.
3.4	Levels and standards of service	<ul style="list-style-type: none"> • KDM has varying levels of service across its customers however 83% are provided with the highest level of service target. The current backlog is 132km of roads (76km gravel roads and 56km of tracks) – affecting 17% of customers. • KDM’s goal is to provide every household with the highest level of service which is level of service 3 (paved roads). • The focus of providing for the backlog are those areas where the municipality intends to promote growth, the development nodes identified in the SDF. A constraint with providing service is the associated capital budget. • The capital cost of eradicating backlogs is estimated to be R413 million: 7 324 households with LOS 1 (tracks) and 8 901 households with LOS 2 (gravel roads) upgraded to LOS 3 (tarred surface).
3.5	Financial status	<ul style="list-style-type: none"> • The municipality funds its activities using its own internal revenue which forms most of its income - it does not depend on grants. • The following confirms the strong liquidity position of the Municipality: • Cash and cash equivalents of KDM as at 2017/18 amounts to R404 Million, this represents an increase of 50% compared to the prior year. • Current ratio (assets / liabilities) is at 2.29 compared to prior year ratio of 1.92.
3.6	Reported risk exposure	<ul style="list-style-type: none"> • KDM has a formal risk management framework in place, and the risk register is reviewed periodically. The top risks in this sector, and the proposed mitigation responses, are: • Inability to maintain municipal roads - additional plant and machinery are procured and others outsourced. KDM also needs to keep its Customer Complaints Register and Quarterly Performance Plans up to date. • Poor storm water management - Storm water assessment lists must be compiled, flood prone areas should be monitored, and current infrastructure upgraded.
3.7	Reported performance	<ul style="list-style-type: none"> • KDM 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. <p>The following are annual KPI’s:</p> <ul style="list-style-type: none"> • 4km of new gravel roads to be constructed. • 43km of roads to be rehabilitated. • 5.4km of new paved roads with associated stormwater to be constructed. • Potholes to be repaired within 5 days.
3.8	Infrastructure management maturity	<ul style="list-style-type: none"> • KDM is in line with many small municipalities, coming off a low 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 these initial AMPs.

4	FUTURE DEMAND	
4.1	Demand forecast	<ul style="list-style-type: none"> • KwaDukuza is classified as a Tertiary Node and in terms of functionality this node should provide services to meet community needs as well as the sub regional economy. • There is also a need to upgrade overloaded roads and stormwater that are not performing adequately. • As usage increases and performance enhancement is required, Roads and Stormwater upgrades will need to be undertaken – envisaged around the developments depicted in Figure 0.4- • The growth for the municipality has been forecast at a rate of 0.78% per annum based on previous census data. No significant changes have been identified to adjust these, and KDM is assumed to continue to hold the highest growth rate in the district. The 92 714 households (3 persons per household) in 2018 are estimated to increase to 100 204 households in 2028, at an average growth of 749 per annum.

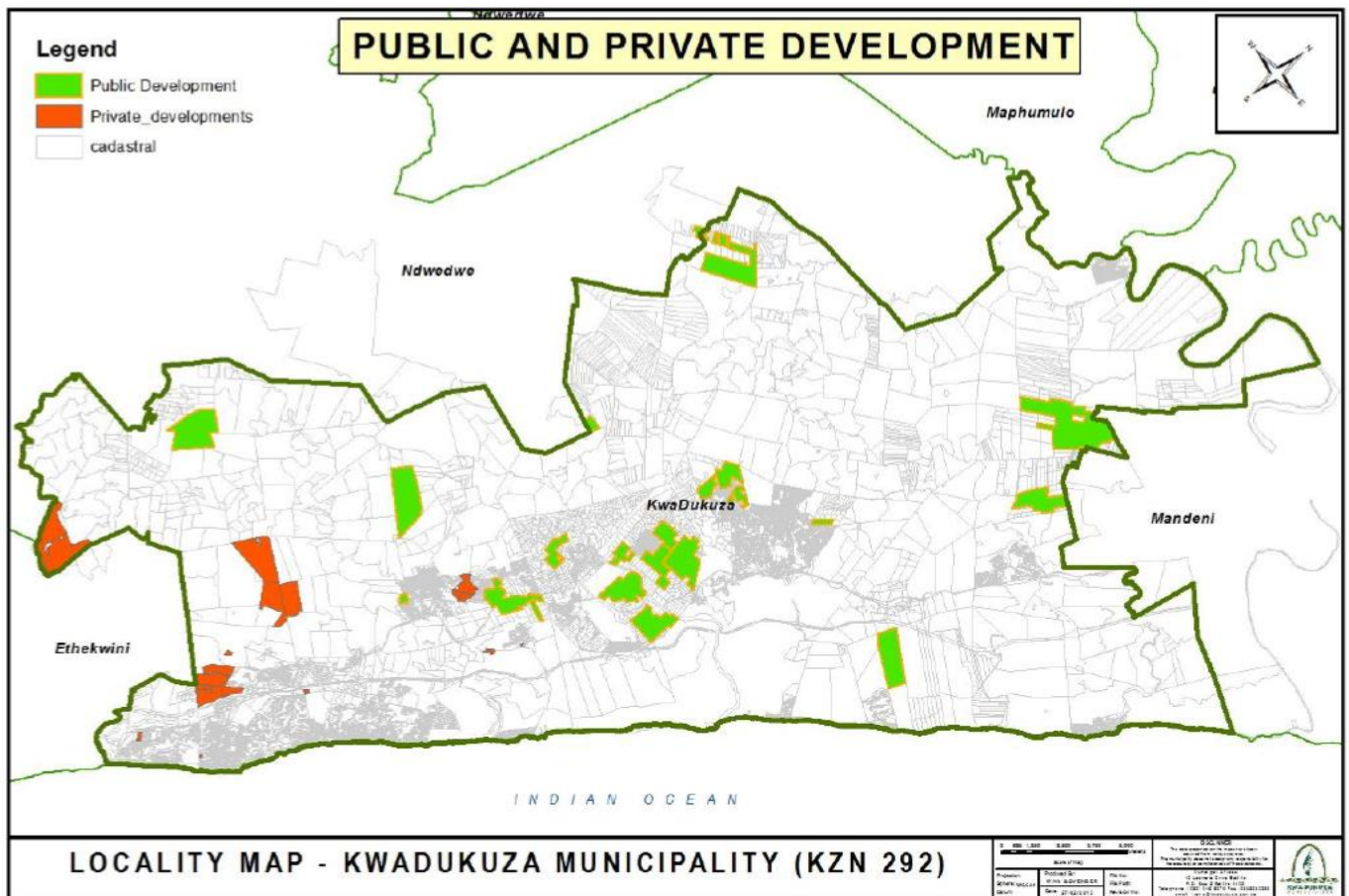


Figure 0.4: Map depicting future developments

4.2	External bulk infrastructure implications	<ul style="list-style-type: none"> • There are no new major district or provincial roads, or upgrades planned in the forecast period.
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4.3	Municipal infrastructure implications	<ul style="list-style-type: none"> • During the 10-year planning period the number of households is expected to increase by 7 494 (8% over the forecast period), thereby increasing the number of people needing to travel on the road network. • The total capital required to provide services to new customers is estimated to be R 104 million and R413 million to address service backlogs. • 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 figures noted above). • In addition to the increased physical demand there will also be an increase in the maintenance needs required for maintaining the infrastructure. The maintenance budget need for the forecast period equates to approximately R559 million, including capital renewals and routine maintenance.
5	LIFE-CYCLE PLAN	
5.1	Short and medium-term plan	<ul style="list-style-type: none"> • Short term plans are those activities that need to be accomplished within a one-year period and can address immediate issues in strategic areas. These initial projects are centred around improving the standard of road and storm-water services within the rural communities. The municipality should target its efforts against its KPI's of constructing 4km of new gravel roads to eradicate a portion of the tracks within its jurisdiction and construct 5.4km of new roads and stormwater to address some backlogs and growth requirements. • Medium term plans are those activities that need to be accomplished within a three-year period. These are projects that were prioritised in the compilation of the roads and stormwater masterplan and focus on major bus routes and secondary routes linking villages to major nodes. The target of these projects involves the rehabilitation of 43km of roads per year and is measured against an existing KPI. • Housing developments assist in eradicating some of the backlogs through the development of the road and stormwater infrastructure, to municipal standards, in areas that are developed. • KwaDukuza is transitioning into a substantially developed municipality and the primary lifecycle management focus will need to migrate from construction of new assets to renewal and maintenance of existing infrastructure assets – and optimisation of these activities.
5.2	Long term lifecycle plan	<ul style="list-style-type: none"> • 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 for the roads and stormwater department of KDM. • From the table and graph below, for KDM to accomplish all its targets it is estimated that it will require an increase in its yearly spend of about 21% - these increases focussed mainly on maintenance and the pace at which the backlogs are addressed. To the extent that this is not affordable, projects need to be

		prioritised. A review of ways to improve the maintenance management efficiency could also be warranted.
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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	41	41	41	41	41	41	41	41	41	41
Renewals	60	63	67	71	75	80	84	89	94	100
Growth	10	10	10	10	10	10	10	10	10	10
Maintenance	43	45	48	51	54	57	60	63	67	71
Total Lifecycle need	154	160	167	173	180	188	196	204	213	222

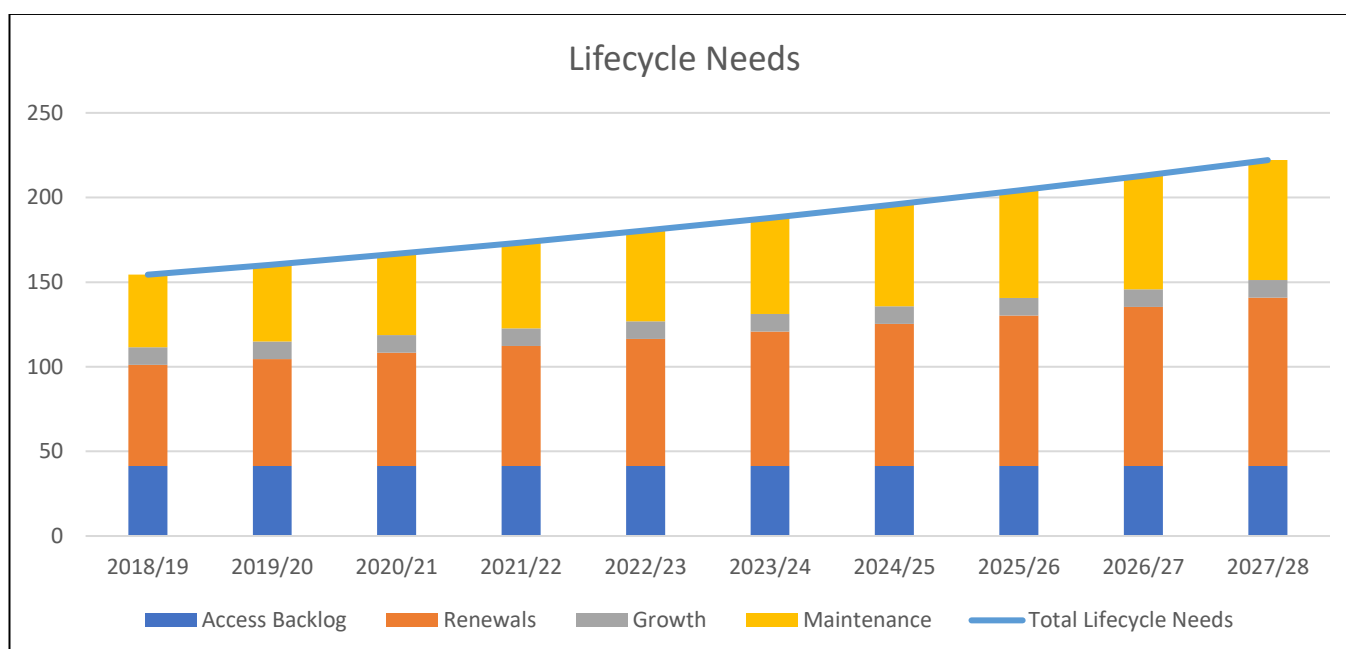


Figure 0.5: Lifecycle needs

6	FINANCIAL PLAN	
6.1	Financial health, budget availability, trends, forecast	<ul style="list-style-type: none"> KDM’s financial performance is currently sound. However, the municipality still faces challenges in providing service delivery and addressing ageing infrastructure. The budgets do not cover the whole needs for the roads and storm water infrastructure sector. The municipality needs to optimise the budget allocation for this sector.
6.2	Revenue management status	<ul style="list-style-type: none"> The roads and stormwater infrastructure is a non-revenue generating portfolio The municipality’s consumer debtors are increasing every year and the municipality needs to review its debt recovery implementation strategy and in addition embark into a revenue enhancement project.

		<ul style="list-style-type: none"> The municipality has been able to maintain its high debt collection rates.
6.3	Cost management	<ul style="list-style-type: none"> The total expenditure for the roads and stormwater sector amounted to R122 million in the last financial year (R27 million - Repairs and Maintenance and R95 million – Capital). Municipal wide expenditure equates to R1.3 billion in the last financial year. Most of the expenditure was used for employee costs (26%), bulk purchases (44%), contracted services (10%) and general expenses (11%). The municipality intends to make use of internal staff to reduce the contracted-out services.
6.4	Financial management strategy and plan	<ul style="list-style-type: none"> KDM has ensured improvement of financial management through implementation of relevant controls and adhering to legislation. Financial reports are presented to the finance Portfolio Committee monthly. The capital requirements will increase after the first 3 years to address service provision for backlog and growth. Only a portion of the backlog is suggested to be addressed as it is infeasible to service the entire municipal area.
7	ASSET MANAGEMENT PRACTICES	
7.1	Asset management practice context	<ul style="list-style-type: none"> KDM is a Category B municipality, coming off a low asset management practices base, however KDM 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	<ul style="list-style-type: none"> 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 0.6. The proposed 3-year phased approach will be dependent on funding availability.

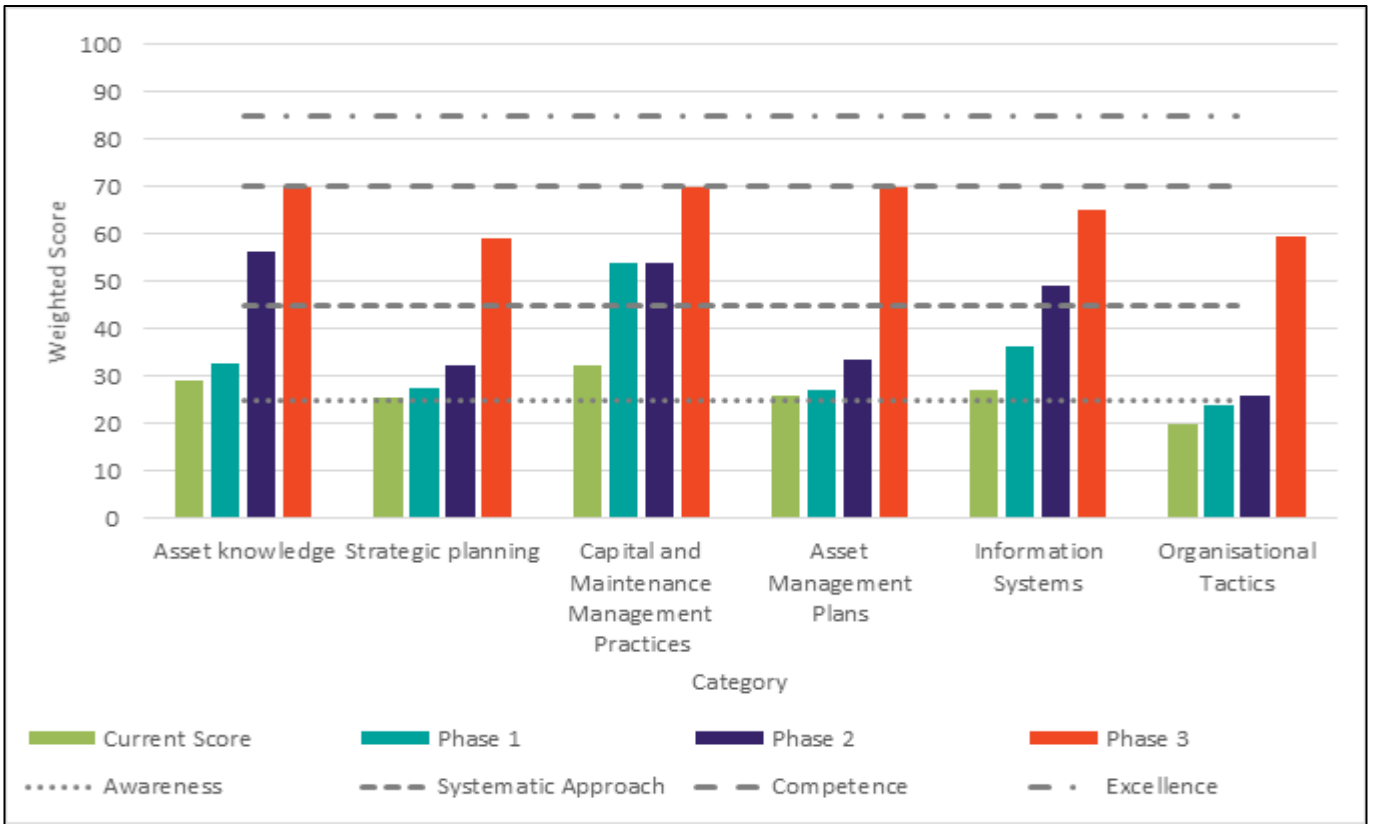


Figure 0.6: Overview of the proposed improvement in AM Practice

7.3	Priority improvement needs	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> The Roads and Stormwater Department aims to continue to provide a sustainable service to customers while also servicing new customers. The objective of the sector is to prioritise the eradication of backlogs, with a focus on development nodes to further encourage a focus of development in those areas.
8.2	Proposed programmes and budgets	<ul style="list-style-type: none"> The main expenditure in the sector is capital expenditure (including renewals and addressing existing and ongoing growth in backlogs). Additional funding would enable more rapid addressing of backlogs. An emphasis of conducting adequate repairs and maintenance of roads and stormwater is planned to continue throughout the planning period.

		<ul style="list-style-type: none"> • Although the sector is performing well, a focus will need to be placed on improving the efficiency of maintenance management (and capital renewal) of the network.
8.3	Recommendations	<p>It is recommended that Council:</p> <ol style="list-style-type: none"> 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; <ul style="list-style-type: none"> ▪ 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	<ul style="list-style-type: none"> To plan effective and efficient infrastructure-based service delivery for the roads and stormwater department in KwaDukuza Local Municipality, utilising 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	<ul style="list-style-type: none"> 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. KDM roads and stormwater are mandated to operate and maintain all roads within the KDM boundary, with the exclusion of the N2 National Road, the Provincial Main Road P2 and the District Roads belonging to the Ilembe District Municipality.
3	Stakeholders	<ul style="list-style-type: none"> Communities represent the everyday road users (buses, pedestrians, mini bus taxis and private vehicles). 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 KwaDukuza impact on the local economy. IDP office. Finance and planning office. Department of Transport (DoT) is responsible for national roads which provides access to secondary and provincial roads, which in turn provides access to municipal roads.
4	Social context	<ul style="list-style-type: none"> Dispersed rural population providing a challenge in terms of service access. Settlement patterns in the remaining areas occur in the form of scattered, unevenly spread rural settlements, reflecting the previous neglect in 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 infrastructural services. Smaller rural nodes, such as tribal courts, trading stores or clinics are scattered through the TC. Traditional housing dominates, but a range of other formal and informal structures proliferates in these predominantly rural areas.

5	Political context	<ul style="list-style-type: none"> • Traditional authority land is found along the boundary with Maphumulo Local Municipality in a small area of the North west of KDM. This land is governed by tradition and tenure which is administered by Traditional leaders and is characterized by a strong subsistence base. • After the 2016 Local Government Elections, KwaDukuza Municipality's Wards were increased from 27 To 29 Wards and councillors from 53 To 57. KDM is currently led by the ANC. • Political vision: 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 city.
6	Economic context	<ul style="list-style-type: none"> • KwaDukuza 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. • Commercial local level activities are in all urban and peri-urban areas; the major commercial development is in the KwaDukuza and Ballito areas; • Industrial manufacturing investments in KwaDukuza include the Stanger Sappi Paper Mill and Sugar Mills in Darnall and Gledhow. The Isithebe Industrial Estate in the Mandeni area is of significance in the north and the UThongathi/Maidstone industrial areas in eThekweni in the south. Smaller scale light industrial activities exist north of Ballito and in the Groutville area. • Agriculture is the dominant economic sector in KwaDukuza contributing 23% of the total gross domestic product. The dominant agricultural product is sugar cane. There are however also other agricultural products such as vegetables, flower and sub-tropical vegetables. Most of the commercial farming areas consist of large-scale activities. The municipality also accommodates areas of afforestation and related paper mills at Mandeni and KwaDukuza; • Recreation has significant potential and the municipality has identified the need to enhance and extend the sector. Primary factors attracting tourists to the area include beaches, culture and wildlife.
7	Technical context	<ul style="list-style-type: none"> • The municipality has commenced the planning of a multi- modal public transport facility in Ballito. The Economic Development and Planning Department envisages all modes of transport operating in the area under one roof to enable a more consolidated public transport system that links commuters from all parts of the municipality and beyond to most of the existing urban primary node. • In the future, passenger rail will also form part of the facility. Furthermore, facilities such as sidewalks for pedestrian movement are being planned and built to facilitate traffic safety. • Rural areas are severely affected by a lack of basic services and continued service delivery backlogs. All the backlogs currently exist within the tribal and farm areas. • Pedestrian bridges are also being investigated and funding is being lobbied to reduce travel distances for some communities who are land-locked by water courses
8	Financial context	<ul style="list-style-type: none"> • KwaDukuza Local Municipality's financial position is stable.

		<ul style="list-style-type: none"> The Municipality is not dependent on grant funding. The Roads and Stormwater Department is funded from the internal operations budget (though it is not an income generating sector).
9	Legal context	<p>Several statutory documents govern roads and stormwater services in municipalities, including:</p> <ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> KDM roads and stormwater conducts minor maintenance through its own resources and outsources major maintenance contracts. KDM has a project management unit which implements capital projects.
11	Procurement strategy	<ul style="list-style-type: none"> The municipality adopted a Contractor Development Policy and Implementation Strategy aimed at uplifting and empowering previously disadvantaged entrepreneurs by providing them with opportunities in the civil, construction and electricity sectors. The programme seeks to achieve the following: <ul style="list-style-type: none"> To increase the active participation of KDM SMME's and cooperatives in the local economy by 5% every year through a sustainable black economic empowerment programme. To formulate a policy that enables KDM 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. 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 programmes.
12	Sector strategic objectives	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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.

		<ul style="list-style-type: none"> • More specific and measurable objectives need to be developed, in line with the establishment of a more robust AMS.
15	Key developmental themes	<p>Several developmental themes are highlighted in the SDF and IDP, the specific developmental nodes, development routes and priority areas for development areas</p> <ul style="list-style-type: none"> • Industrial regeneration to support industry and manufacturing. • Focus on tourism opportunities along the coastline, note the concentration of identified nodes on the coast and transport routes parallel to the coast. • Promoting conservation and sustainable/responsible development, implementing conservation management. • Encouraging densification along transport routes and in urban areas. • Priority intervention areas near Groutville and Stanger (Kwadukuza) to ensure formal and organised development in line with municipal vision. • Investor Incentive for commercial and industrial development as well as key development plans to promote tourism.
16	Spatial structure, ongoing development initiatives	<p>There is a large amount of scattered rural development in the municipality, as the population increases it continues to add pressure to existing services. Rapid urbanisation is seen in the area as people move towards the urban centres. This is due to accessibility (including to public transport) and the availability of social facilities and basic services.</p> <p>The following developmental initiatives are highlighted:</p> <ul style="list-style-type: none"> • Provide positive environment for Industrial Development. • Renewal and Regeneration of KwaDukuza Main town and Shakaskraal. • Development of Priority clusters: <ul style="list-style-type: none"> ○ KwaDukuza node, ○ Groutville, ○ Woodmead/Shayamoya and Southern node/ Driefontein <p>The SDF highlights a move towards nodal development that increases density of settlement and promotes compactness.</p> <ul style="list-style-type: none"> ○ 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 KDM. Part of the spatial plan is to define urban development edges and protect the natural resources. KDM has the highest proportion of urban area out of all the local municipalities in the district which is shown in Figure 1.2.

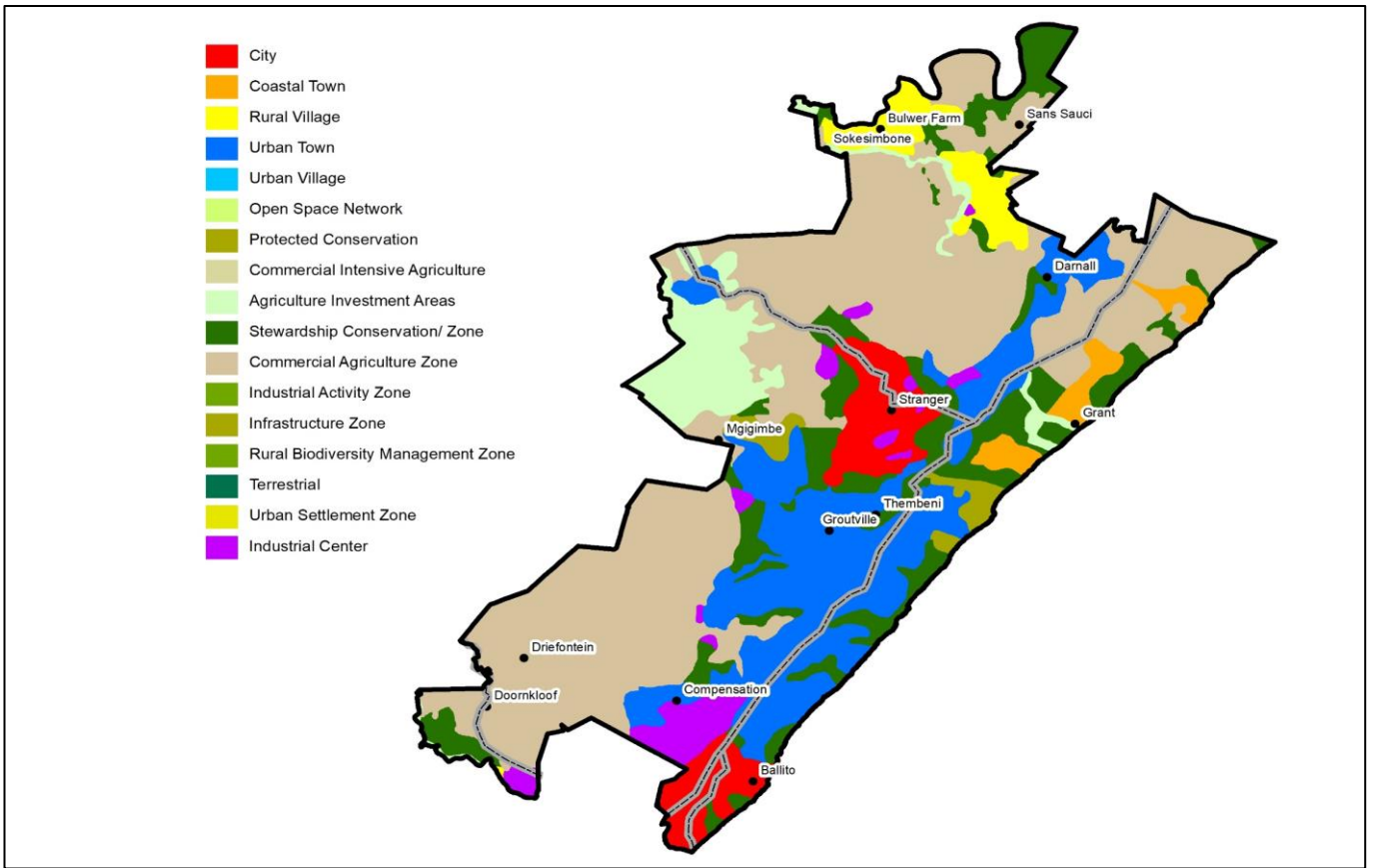


Figure 1.1: Land uses across Kwadukuza Local Municipality

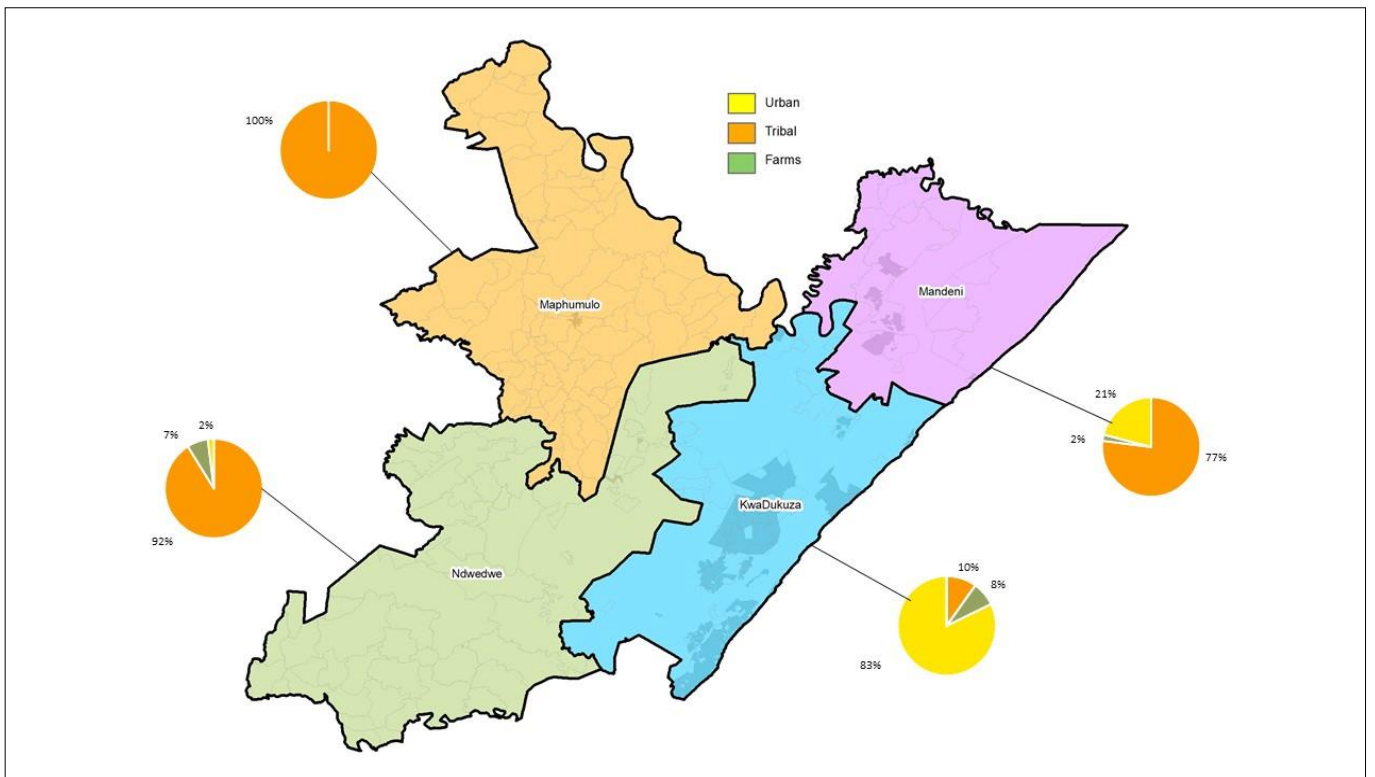


Figure 1.2: Municipal Split

17	Key sector AM roles (and suppliers)	<ul style="list-style-type: none"> • 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. • KDM has its own borrow pits and conducts most of the maintenance activities in house.
18	Overview of infrastructure	<ul style="list-style-type: none"> • Table 1.1 represents the status of the assets according to the current financial asset register. • Based on the financial asset register the entire portfolio depreciates at approximately R30 million per annum – reflecting consumption of 2,3% of the portfolio annually. • The gravel roads need attention as it is currently in the worst condition of all asset groups. • The current replacement cost (CRC) of the portfolio (based on the number of households served) is estimated to be R2,2 billion. • Significant stormwater infrastructure (such as pipes and kerbing) exists within the major urban areas i.e. Ballito, Stanger (Kwadukuza) and Zimbali. • Overall the entire portfolio is considered to be in good health (though the accuracy of data needs to be verified). • The portfolios are in good health based on the carrying value to cost ratio of the assets indicated in the financial asset register..

Table 1.1: Asset group types and associated values and health

	COST	DEPRECIATION	CARRYING VALUE	CV/COST	CONDITION
Bridges	17 079 791	286 531	16 434 821	96%	Very Good
Gravel Roads	20 612 486	1 033 823	4 056 207	20%	Poor
Paved Roads	587 877 900	13 227 638	427 543 653	73%	Very Good
Road Furniture	90 960 917	4 185 088	62 965 574	69%	Good
Road Structural Layer	318 237 261	6 141 967	215 043 852	68%	Good
Stormwater	261 523 171	5 403 347	188 885 567	72%	Very Good
Footpaths	415 091	10 347	393 254	95%	Very Good
Grand Total	1 296 706 617	30 288 741	915 322 928	71%	Very Good

19	Overview of the level of performance	<ul style="list-style-type: none"> • 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 this is funding constrained. • Some key sector risks include: <ul style="list-style-type: none"> ○ Financial constraints. ○ High cost of addressing backlog due to sparse rural population ○ Poor road condition in some rural areas further hinder service provision in some areas.
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20	AM maturity	<ul style="list-style-type: none"> • KDM is a category B municipality and is coming off a low asset management practices base, however KDM 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 KDM. 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	<ul style="list-style-type: none"> • In general data reliability is 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 had to be trusted without independent verification. • 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. • KDM 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	<ul style="list-style-type: none"> • Population growth • Household size • Roads and stormwater LOS and SOS targets • Maintenance cost or target per km per year
23	Chapter summary	<ul style="list-style-type: none"> • Based on the asset register and current trends, KwaDukuza has a substantial road network which comprises mainly of paved road surfaces. These surfaces are in a good condition and need to be managed properly to keep them this way. <p>Key constraints, risks and opportunities include:</p> <ul style="list-style-type: none"> • Dispersed, rural households difficult to service, • Strong current liquidity status, and • Shortage of human and skill resources within the sector and municipality.

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	<ul style="list-style-type: none"> • KDM has customers that reside in areas of varying categories of Levels of Service. • The majority of customers (83%) are at LOS 3 (Paved Roads and Lined Channels). • KwaDukuza functions as the district node and dominant commercial centre in the Ilembe District. It occupies a coastal and inland stretch of approximately 52.3 km in length and 23 km in width, a variety of clustered and ad hoc settlements and small towns exist and are linked with a well-developed network of roads and rail infrastructure. The key feature of KwaDukuza is the N2 Development Corridor that runs through it. • KDM has approximately 754km of roads network of which 622km is paved. • The municipality also maintains about 76km of gravel roads and 56km of tracks within its jurisdiction.
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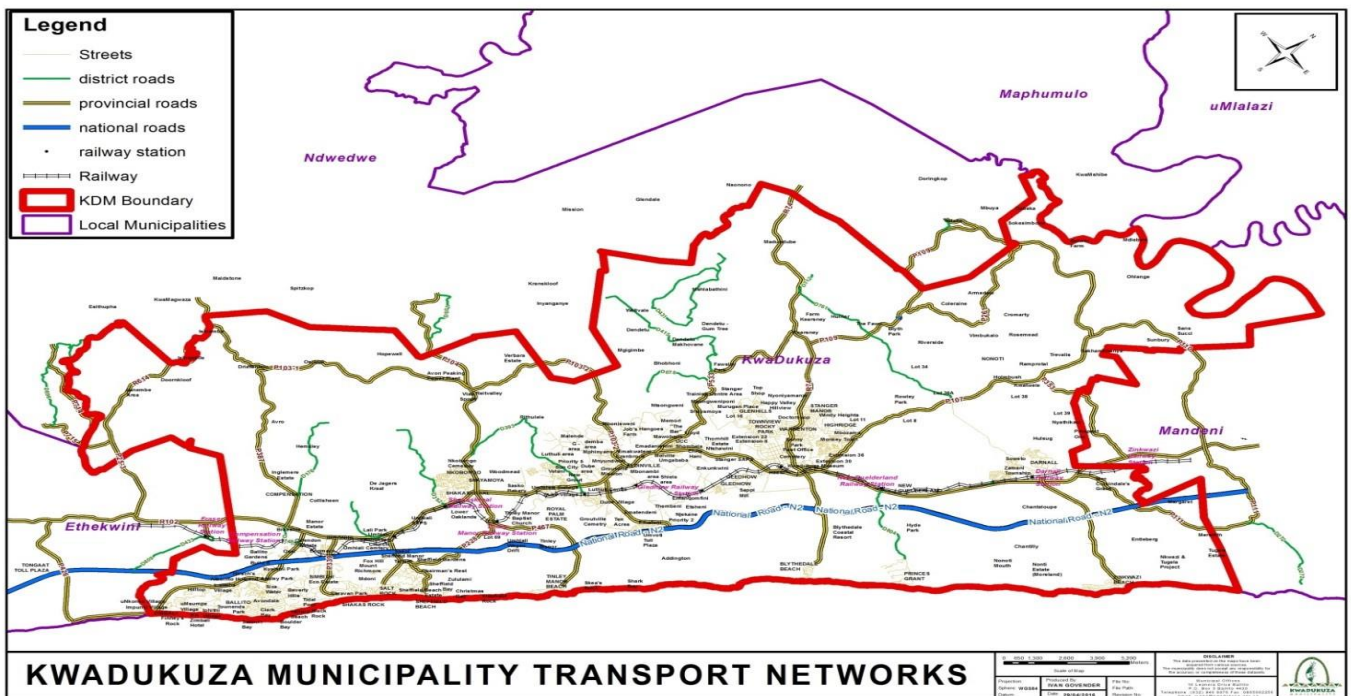


Figure 2.1: Transportation Infrastructure

Table 2.1: Levels of Service Distribution

Roads Service	Level of Service	% of Customers	No. of Households
None	0	0%	0
Tracks (instituted material, compaction/grading to make passable).	1	8%	7 324
Gravel Roads	2	10%	8 901
Paved Roads	3	83%	76 489
Paved heavy capacity	4	0	0

2	Historic trends and ongoing initiatives	<ul style="list-style-type: none"> • KwaDukuza Local Municipality has developed at a rapid pace (formal/commercial housing developments) over the last 15 years and this has led to a high level of service provided within the roads and stormwater department. 83% of households are currently on the highest level of service target (Level 3). • KwaDukuza has a significant number of gazetted land claims that occur in a band from Blythedale Beach to KwaDukuza Town and westwards, which may influence the potential phasing of development, these developments are provided with Level of service 3 when established. • In terms of settlements, the existing urban development is in the formally established towns of KwaDukuza, Ballito, uMhlali, Shaka's Kraal, Prince's Grant, Blythedale Beach, Tinley Manor, Zinkwazi as well as portions of Groutville. Peri-urban to semi-rural settlement occurs throughout much of the centre of the municipality, extending from the northern boundary via KwaDukuza, Groutville and uMhlali to the southern edge abutting eThekweni. • It must be noted that densities and development qualities vary significantly. Although some rural settlement occurs in the Groutville area, much of the rural and traditional settlement is concentrated in the north-western Ingonyama Trust areas. A variety of new housing areas are in the process of being established throughout the municipality from Ballito in the south to Darnall in the north. • The current population in 2018 stood at 281 052 people and the total Households stand at 92 714.
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Table 2.2: Increase in population and households per year

	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Population	283 244	285 454	28 7681	289 925	292 186	294 465	296 762	299 077	301 409	303 760
Household	93 480	94 209	94 944	95 685	96 431	97 183	97 941	98 705	99 475	100 251

3	Strategic directives	<ul style="list-style-type: none"> • Due to the need to prioritise the expenditure of limited available capital the majority of the spend will be targeted around the development nodes indicated in the SDF. • All urban areas are already on the highest target level of service which is Level 3 (paved) and therefore will not be improved further. • 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.
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Roads Service	Level of Service
None	0
Tracks (insitu 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	<ul style="list-style-type: none"> The assumption made is that road-linked stormwater levels of service are linked to the class of road. 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.
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Table 2.5: Level of service Target and Cost

LOS Definitions	Current LOS (km)	Target LOS		Backlog Cost(R'000)
		Gravel(km)	Paved(km)	
None	0	0	0	0
Tracks	60	60	0	101 420
Gravel Roads	72	0	72	311 246
Paved Roads	622	0	0	0
Paved heavy capacity	0	0	0	0

6	Lifecycle cost implications	<ul style="list-style-type: none"> The funding would have to increase significantly to be able to address current service level targets however this is not regarded as likely given current fund availability, and consequently prioritization of spend needs to be allocated to strategic areas. Private sector developments will address some of the growth while public developments will address mostly backlogs. Housing developments apply a level of service of Level 3.
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Table 2.6: Level of service Target and Cost

Upgrading from level of service 1 to level of service 2										
	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Backlog (Households)	732	732	732	732	732	732	732	732	732	732
SW Backlog (Households)	732	732	732	732	732	732	732	732	732	732
Capital for Access Backlog (Roads and Stormwater (Rm)	10	10	10	10	10	10	10	10	10	10

Table 2.7: Level of service Target and Cost

Upgrading from level of service 2 to level of service 3										
	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Backlog (Households)	890	890	890	890	890	890	890	890	890	890
SW Backlog (Households)	890	890	890	890	890	890	890	890	890	890
Capital for Access Backlog (Roads and Stormwater (Rm))	31	31	31	31	31	31	31	31	31	31

7	Service delivery backlogs	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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 storm-water investment. • Promotion of private sector investment.
9	Chapter confidence	<ul style="list-style-type: none"> • In general data reliability is moderate, much of the information has been gained from multiple sources with different grades of confidence and has not been independently verified. • A key assumption was the projection of the population based on the 2011 - 2016 census data obtained from stats SA.
10	Chapter summary	<p>The following are priority issues and problems:</p> <ul style="list-style-type: none"> • Low level of service in most of the tribal and farm areas, as well as backlogs generally in the rural areas. • 132km of existing rural roads infrastructure in a poor condition. • Insufficient stormwater infrastructure. • These are considered essential for enabling productivity of the local economy. • The KwaDukuza municipal area is characterized by areas where major service backlogs exists (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, realized 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	<p>Several factors, some of which are indicated below, influence the demand for roads and associated infrastructure:</p> <ul style="list-style-type: none"> • 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).
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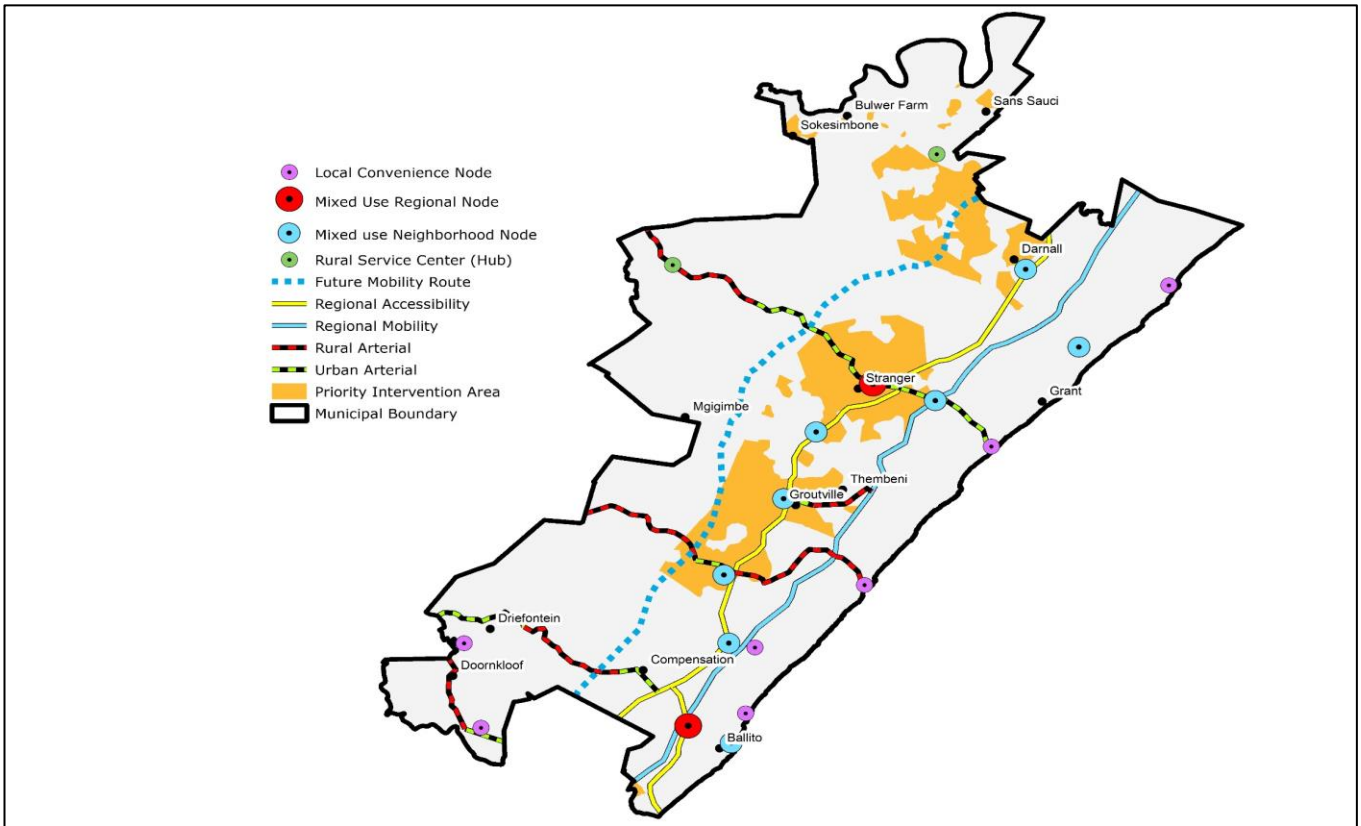


Figure 3.1: Major Corridors and Nodes

2	Demand drivers	<p>The current demand drivers include:</p> <ul style="list-style-type: none"> • Growth and backlog • Eco tourism • Agriculture • Manufacturing
3	Growth strategy	<p>The strategic objectives of the Integrated Transport Plan (ITP) are the following:</p> <ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • KwaDukuza is classified as a Tertiary Node. In terms of functionality this node should provide service to the sub regional economy and community needs. Accordingly, there is a specific focus on roads and stormwater infrastructure at KwaDukuza to facilitate this function, including a need to upgrade current poorly performing infrastructure. • The tables below depict the growth and the cost implications to cater population growth.

Table 3.1: Population Growth

Current Population	Growth Rate (p/a)	Population at end of Planning period	Population Increase	Household Increase
281 052	0.78 %	303 760	22 708	7 494

Table 3.2: Capital Needed for Growth (Gravel Roads)

Capital for Growth at LOS 2 (Million)										
	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Growth (Households)	749	749	749	749	749	749	749	749	749	749
Backlog (Meters)	8 440	8 440	8 440	8 440	8 440	8 440	8 440	8 440	8 440	8 440
Capital for Growth (Roads and Stormwater (Rm))	10	10	10	10	10	10	10	10	10	10

5	Infrastructure impact	<p>The future demand is estimated from the following criteria:</p> <ul style="list-style-type: none"> • 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 will increase as the infrastructure will have to cope with the increased demand. • In addition to the increased physical demand there will also be an increase in the maintenance needs required for maintaining the infrastructure as the levels of service increase, there will be upgrading from unpaved to paved surfaces with associated stormwater. This transition will require more maintenance funding for the higher level of service.
6	Demand management tactics	<ul style="list-style-type: none"> • Building new infrastructure • Renewal of existing infrastructure • Inter department strategy alignment • Investment and procurements strategy improvements
7	Chapter confidence	<ul style="list-style-type: none"> • 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. The IDP is the primary planning document for the municipality. • The objective is to achieve the target levels and standards of service as soon as possible with the resources available.
8	Chapter summary	<p>Some of the demand challenges are:</p> <ul style="list-style-type: none"> • Access to additional financial support to achieve more rapid achievement of addressing the backlog targets. • Increased physical demand on infrastructure <p>The following are demand-based risks:</p> <ul style="list-style-type: none"> • Increased maintenance requirements due to increased physical strain on existing infrastructure. • Increased requirements for performance upgrades (widening, upgrades to junctions) associated with increased traffic. • Increased 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	<ul style="list-style-type: none"> • Low amounts of new roads are created yearly: 4km of gravel roads and 5.4km 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. • If the current budget is adhered to during the planning period, the portfolio is expected to remain in a good (to very good) condition. • The current total budget of R122 million per annum should be sustained as a minimum going forward, though increased funding would enable a more rapid reduction of the backlogs. The current split is 22% for repairs and maintenance and 78% capital expenditure (construction of new roads and stormwater and renewal of existing infrastructure). • Figure 4.1 indicates that the existing level of capital renewal expenditure is expected to keep the portfolio in good health overall.
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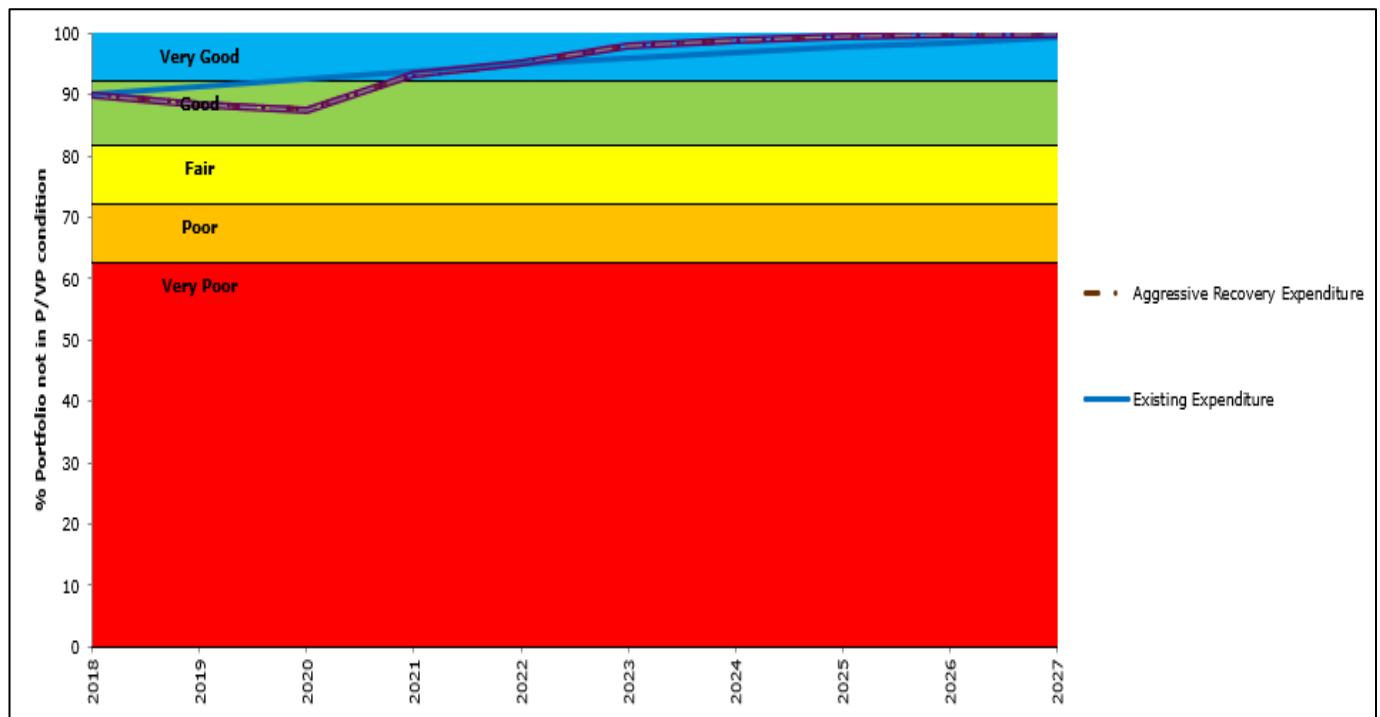


Figure 4.1: Health grade forecast

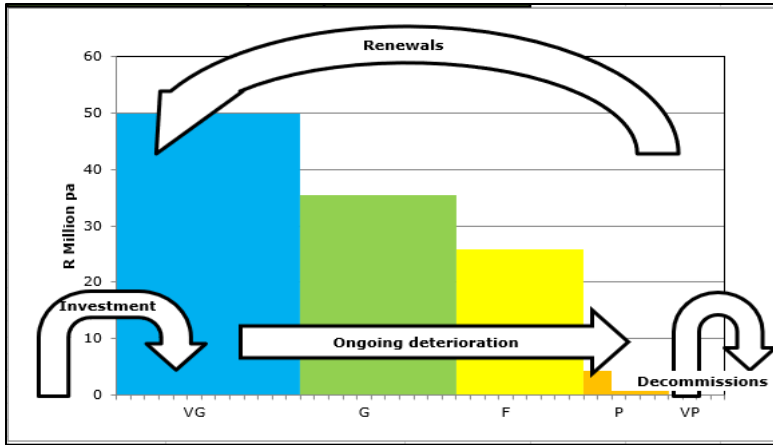


Figure 4.2: Conceptual illustration of the portfolio lifecycle management

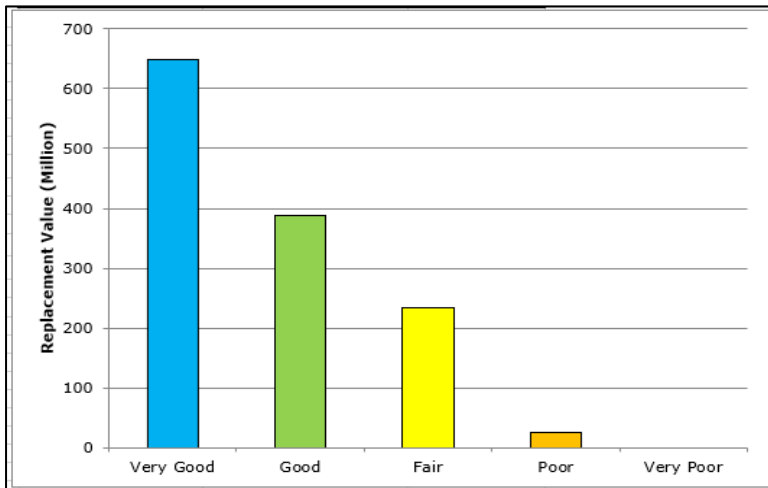


Figure 4.3: Condition Distribution

2	Capital programmes	<ul style="list-style-type: none"> • There is no formal capital program in place. • New infrastructure is constructed around housing developments. • The total capital required for the planning period is R1 300 million.
3	Maintenance management	<ul style="list-style-type: none"> • Minor repair work is done by internal maintenance teams • KwaDukuza has its own plant and equipment which improves maintenance performance reliability. • The maintenance required for the planning period is R559 million. • There is a need for improved co-ordination between stakeholders.
4	Operations management	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • Capital projects are handled by the Project Management Unit. • The roads and stormwater masterplan identifies upgrading and renewals needs and packages these per area with schedules for a period of three years.

		<ul style="list-style-type: none"> Due to budget constraints, roads and stormwater networks that are worked on are those in dire conditions and ones that are reported as problematic.
6	Life-cycle plan	<ul style="list-style-type: none"> Total expenditure (capital and operational) in the sector in the baseline reference year is approximately R122 million while the total need is R154 million This equates to a 26% increase in the current budget. Project prioritisation should be applied in the case where major budget increases are not available. <p>Below is a summary for the 10-year planning period:</p> <ul style="list-style-type: none"> Total capital required for access backlog eradication is R413 million Total capital required for the growth of new customers is R104 million Total capital required for renewals is R 783 million

Table 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	41	41	41	41	41	41	41	41	41	41
Renewals	60	63	67	71	75	80	84	89	94	100
Growth	10	10	10	10	10	10	10	10	10	10
Maintenance	43	45	48	51	54	57	60	63	67	71
Total Lifecycle need	154	160	167	173	180	188	196	204	213	222

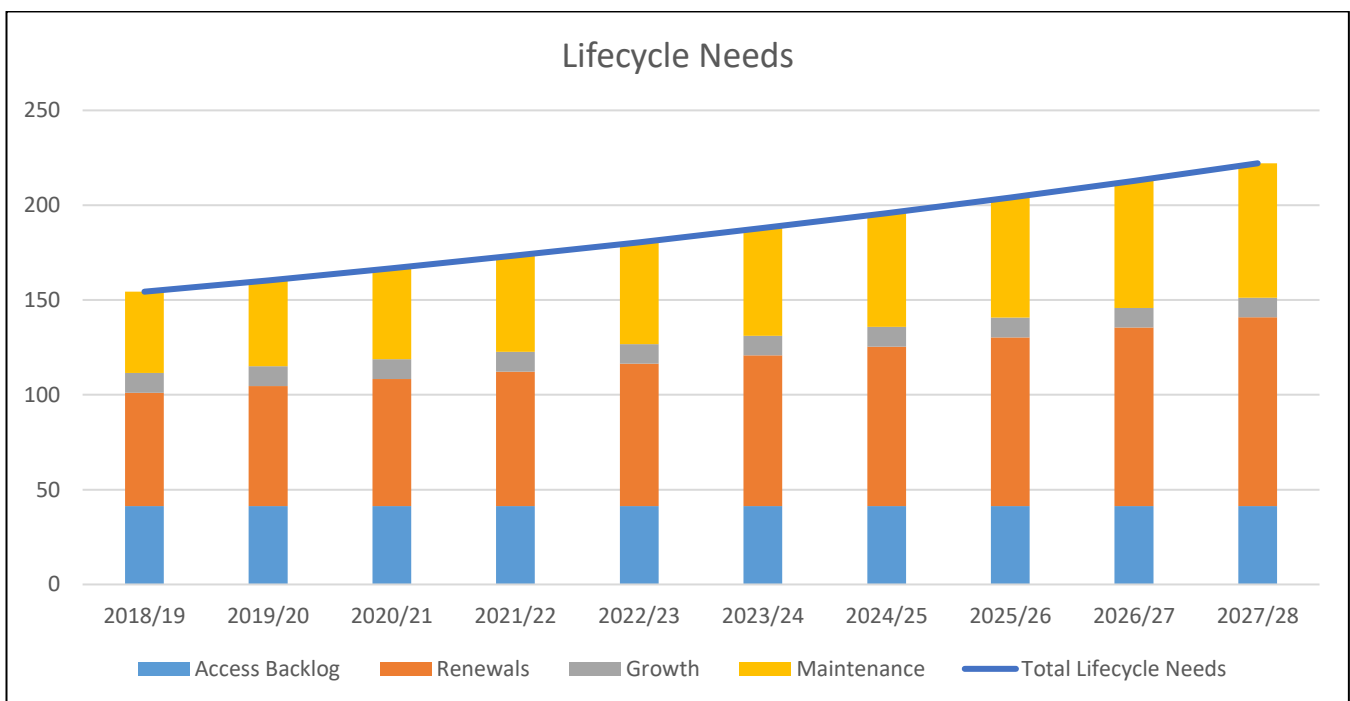


Figure 4.5: Lifecycle needs

7	Chapter confidence	<ul style="list-style-type: none"> • The reliability of data used to prepare this chapter of the plan is considered 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 to be trusted without independent verification. • An asset register exists however it is not mSCOA aligned. • Gaps within the asset register will need to be addressed to enable more accurate lifecycle analysis. • Costs were determined by analysing households within the municipality and their distribution. Costs were compared to the current master plans and escalated where applicable to obtain a realistic present value as a baseline for high-level lifecycle modelling.
8	Chapter summary	<p>Key factors that inform the life cycle plan:</p> <ul style="list-style-type: none"> • High level modelling suggests that current budget levels are adequate to continue to keep the portfolio in its current (good) health grade. • However, budget increases would facilitate more rapid addressing of the access backlogs. • A significant portion of the budget relates to maintenance and capital renewal activities – optimisation of these should be a focus going forward.

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	<p>KDM managed to meet 73% of its financial targets in terms of KPIs.</p> <p>Some objectives, directives and targets include:</p> <ul style="list-style-type: none"> • The municipal investment policy aims at gaining optimal return without incurring undue risks. • To improve expenditure on capital budget by spending 100% expenditure on implementation of New MIG infrastructure. • 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	<ul style="list-style-type: none"> • KDM’s financial performance is currently sound; however, the municipality still faces challenges in providing service delivery and addressing ageing infrastructure problem and it faces low collection rates. • The municipalities revenue marginally increased by 7% in 2017/2018 to R1.5 billion compared to the previous year amounting to R1.4 billion whilst the total expenditure increased marginally by 3% to 1.3 billion in 2017/18 compared to prior year amount of R1.3 billion. • The total expenditure for the municipality amounted to R1.3 billion which is significant. The major expenditure for the municipality is employee costs (26%), bulk purchases (44%), contracted services (10%) and general expenses (11%) as per Figure 5.2 • KDM’s profitability significantly increased by 43% in 2017/18 to R223 million compared to the prior year amount of R156 million indicating a strong financial performance. • The Roads and Stormwater Department is a non-income generating portfolio which is mainly funded from the municipality infrastructure grant and borrowings. The current total allocated grant amounts to R64 million (85% of this grant is allocated to MIG funding) and the municipality has long term borrowing amount to R221 million as at 2017/2018, this facility has been used to finance Property, Plant & Equipment. The facility not yet utilized (as at 30 June 2018) was R2 186 333. • The municipality need to prioritise the budget to ensure elevation of service backlogs. • The current estimated capital expenditure forecast for the 3-year period ending 2020/21 is R319 million, 56% of this budget will be allocated to construction of new assets,18% replacement and renewal and 26% will be allocated upgrading of Road and stormwater infrastructure as per Figure 5.1.

		<ul style="list-style-type: none"> • If this budget is implemented this will amount to improvement in KDM road infrastructure network. • KwaDukuza is heavily reliant on internal sources of fund and very low dependence on grant as depicted in Table 5.2 • The municipality is underspending on maintenance of roads and stormwater therefore service delivery is affected. • The ratio analysis in Tables 5.1-to 5.2 shows the following regarding the financial viability of the municipality: • The municipal cash cost coverage ratio attained in 2017/18 is 4 months, this indicates that the municipality will be able to meet its annual fixed operating commitments from cash and short-term commitments without collecting any additional revenue as per Table 5.3. • The municipal current ratio of 2.29 attained in 2017/18 indicates that the municipality's current assets exceed its liabilities and can pay its current obligations and continue operations at the current level. • The capital expenditure to total expenditure for 2015/16 and 2014/15 financial years is above the norm of 20%, however the % drop drastically to 11% in 2017/18 as per Table 5.2. This reflects a lower spending on roads and stormwater infrastructure and acceleration in service delivery. • The collection rates attained in 2017/2018 is 98% which was above the target for 95% as per Table 5.5. The municipality collection rates are high, and this trend should continue.
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Figure 5.1: Roads infrastructure 3-year MTREF CAPEX forecasts

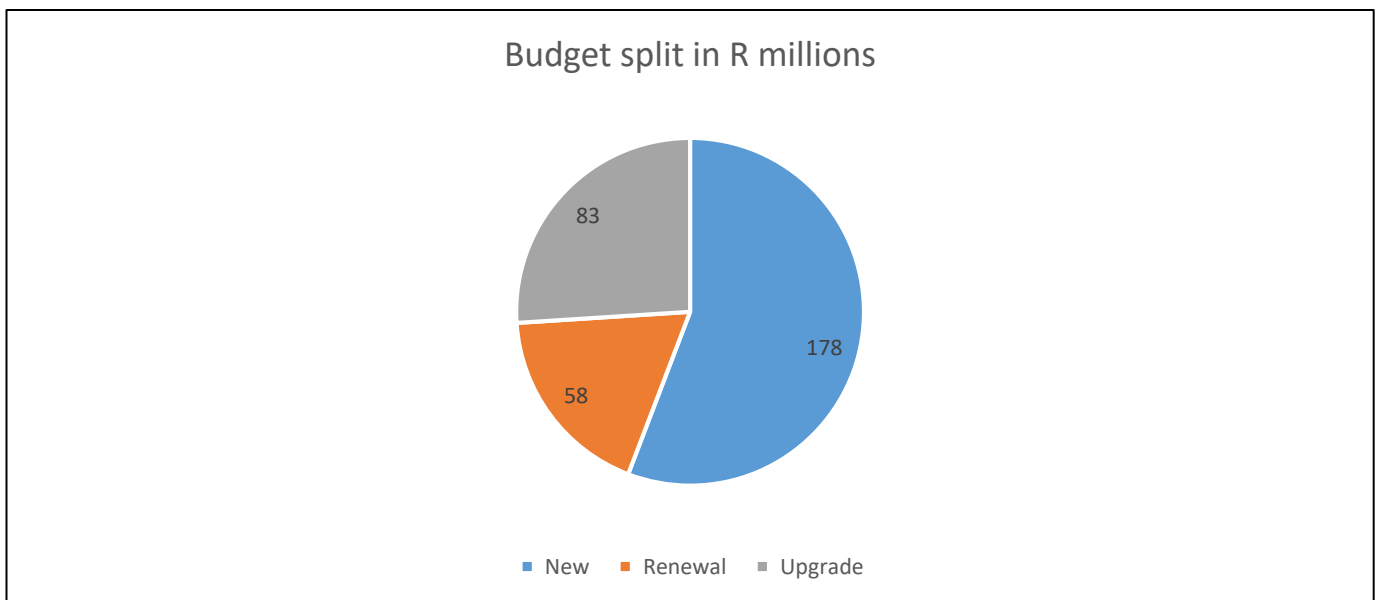


Table 5.1: Municipality and Sector Repairs and Maintenance

R'000	2015	2016	2017	2018
Repairs and Maintenance Ratio	Actual	Actual	Actual	Actual
Total Repair & Maintenance (Municipal Wide)	53,686	63,326	68,819	69,879
Total Road & Stormwater R&M	16,728	25,537	21,868	15,172
Proportion of Sector repair and maintenance to total repairs and maintenance	31%	40%	32%	22%
Total Carrying value of Road & Stormwater infrastructure	397,448	455,439	724,817	796,045
Sector Repairs and Maintenance Ratio/Sector carrying value%	4%	6%	3%	2%

Table 5.2: Current ratio

R'000	2016	2017	2018
Current Assets	614,479	558,879	719,385
Current liabilities	345,494	302,005	313,826
Calculation	1.78	1.85	2.29
Norm	1.5-2.1	1.5-2.1	1.5-2.1

Table 5.3: Cash coverage months

R'000	2015	2016	2017	2018
Cash and Cash equivalents	540,391	452,173	542,371	403,908
unspent Conditional Grants	39,226	19,919	75,476	52,234
Overdraft	-	-	-	-
Short term investments	347,596	382,530	359,200	106,873
Total Annual Operational Expenditure	1,081,097	1,211,455	969,587	1,232,663
Calculated cash coverage months	9	8	10	4
Norm	1-3 Months	1-3 Months	1-3 Months	1-3 Months

3	Municipal affordability	<ul style="list-style-type: none"> • The Road and Stormwater Department is a non-generating income portfolio, therefore do not have consumer debtor's exposure. • The municipality is currently experiencing a significant increase in the total municipal debtors. The consumer debtors increased significantly by a cumulative 49% over the 3-year period from 2014/15 amounting from R89 million to R139 million in 2017/18. The huge jump depicts the increasing affordability and unemployment of the consumers. The municipality need to relook at the tariffs reasonableness and introduce debt collection strategy. • The bad debt written off in comparison to the allowance for impairment is significantly very low, constituting approximately 1% of allowance in each year. • KwaDukuza municipality has a R284 401 balance of unspent municipality assistance programme grant as at 30 June 2018 used to strengthen credit control and debt collection processes. The challenge of increase in consumer debtors has been highlighted above and the municipality needs to utilise the funds available to decrease the current debt and increase liquidity of the municipality. • 71% of the current assets is made up of cash and cash equivalents and short-term investments as per Table 5.4. This indicates a stronger liquidity position for the Municipality as these can be easily converted into cash to enable the Municipality to meet its financial obligations. • If the unspent conditional grants are paid back to the sources, the municipality will still have excess cash on hand which could be used to finance the expenditure in the sector. Excess cash amount of R351 million was on hand for 2017/18 FY (see table 5.6). • Total Capital grants allocation for the MTREF period 2017/18 FY amounted to R658 million, this makes up approximately 43% of the total revenue generated by the municipality while 67% of the revenue was generated from exchange transactions, this revenue mix is significantly high and indicates that the municipality is not entirely dependent on grants. Therefore, sufficient internal funding that could be utilised for the sector expenditure.
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Table 5.4: Consumer debtors and bad debt impairment

	2018	2017	2016	2015
Total consumer debtors	138,709	129,980	118,174	89,269
% increase		7%	10%	32%
Allowance for impairments	40,740	40,740	57,685	27,197
Bad debts written off - Exchange Transactions	42	764	857	282
Bad debts as % of allowance for impairments	0.10%	1.88%	1.49%	1.04%

Table 5.5: Excess Cash on hand

R'000	2015/16	2016/17	2017/18
Cash and cash equivalents	452 173	270 209	403 908
Unspent conditional grants	(19 919)	(47 200)	(52 324)
Excess cash on hand after grants are paid back	432 254	223 010	351 584

Table 5.6: Gross debtor collection rate

R'000	2016	2017	2018
Gross Debtors closing balance	118,207	129,980	145,142
Gross Debtors opening balance	129,980	118,207	164,267
Bad debts written off	4,372	2,048	3,510
Billed Revenue	1,201,809	1,287,181	1,283,485
Calculated collection rate	99%	101%	98%
Target	95%	95%	95%

4	Funding strategy	<ul style="list-style-type: none"> The municipality needs to establish a committee to implement its revenue collection strategy to improve collection rate and increase revenue from tariffs. For the roads and stormwater life cycle plan the municipality needs capital funds of R 111 million in the 2018/19 financial year, R115 million in 2019/20 and increasing to R 119 million in 2020/21. This will require an adjustment to the current planned budget which is R319 Million capital for the sector over the forecasted 3 years. This reflects the limitations of the capital funds against the overwhelming capital roads and infrastructure needs. Alternative sources of funds should be considered, for example increasing the grant funding or allocating more internally generated funds. The capital requirements will increase after the first 3 years to address service provision for backlog and growth. Only a portion of the backlog is suggested to be addressed as it is not affordable to service the entire municipal area at the target levels of service.
5	Chapter confidence	<ul style="list-style-type: none"> In general, the reliability of available data used for the preparation of this chapter is considered poor 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 been used without independent verification. The IDP, budgets and financial statements were the primary planning documents for the municipality.
6	Chapter summary	<ul style="list-style-type: none"> The municipality aims to provide reliable services while being viable and sustainable. The overall financial health of the municipality is good. The existing road and storm-water infrastructure portfolio is generally in good health, though there is a need to identify opportunities for additional budget to address backlogs..

		<ul style="list-style-type: none">• Currently the capital budget addresses approximately 11km of the total 132km backlog.• Consumers accounts are owing for greater than 120 days indicating the affordability pattern of consumers struggling to make payments of municipal accounts. The municipality needs to introduce a strict debt collection strategy in order to recover the debts.• To further improve the collectability, the municipality has to implement various mechanisms to enhance the revenue collection. Amongst these is a proposed Revenue Enhancement project
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6 ASSET MANAGEMENT PRACTICES

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

1	Asset management practice context	<p>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 added to by a tight budget and skills challenge. Strong leadership (and leadership support) is vital to affect any AM practices improvements.</p> <p>KDM is a category B municipality and is coming off a low asset management practices base, however it has committed to improving its practices by implementing the Vuthela-Ilembe LED project.</p>
2	Ongoing practice improvement activities	<p>KDM 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 target a level of competence across all the practices categories.</p>
3	Current AM performance	<p>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.</p> <p>Some of the KDM data practices approach a ‘systematic approach’ rating; subcategories:</p> <ul style="list-style-type: none"> • asset categorisation; • condition data and • financial data <p>The ‘Risk management strategy’ practice was the highest score from the planning approach section – but still only scores at an ‘awareness’ level. Overall the Existing asset management planning practice had a low score, but the Asset Register System scored almost at a ‘systematic approach’ level (from an information system category).</p> <p>Completing a 5-year capital infrastructure funding plan is a key performance area and would indicate an improvement in the existing capital and maintenance management practice category.</p> <p>The roads and stormwater department also have 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.</p>
4	Priority improvement needs	<p>The following priority improvement areas were identified and proposed to be included in an improvement plan phased over three years:</p> <ul style="list-style-type: none"> • 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).

		<ul style="list-style-type: none"> • Figure 6.1 shows the impact of the phased improvement approach on the different practice categories. <p>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. The work breakdown structure of the improvement plan is detailed in Annexure D along with the associated cost estimates. To implement such improvements KDM will need to seek funding from donors, there is potential to extend the Vuthela-Ilembe LED project to assist with these improvements.</p>
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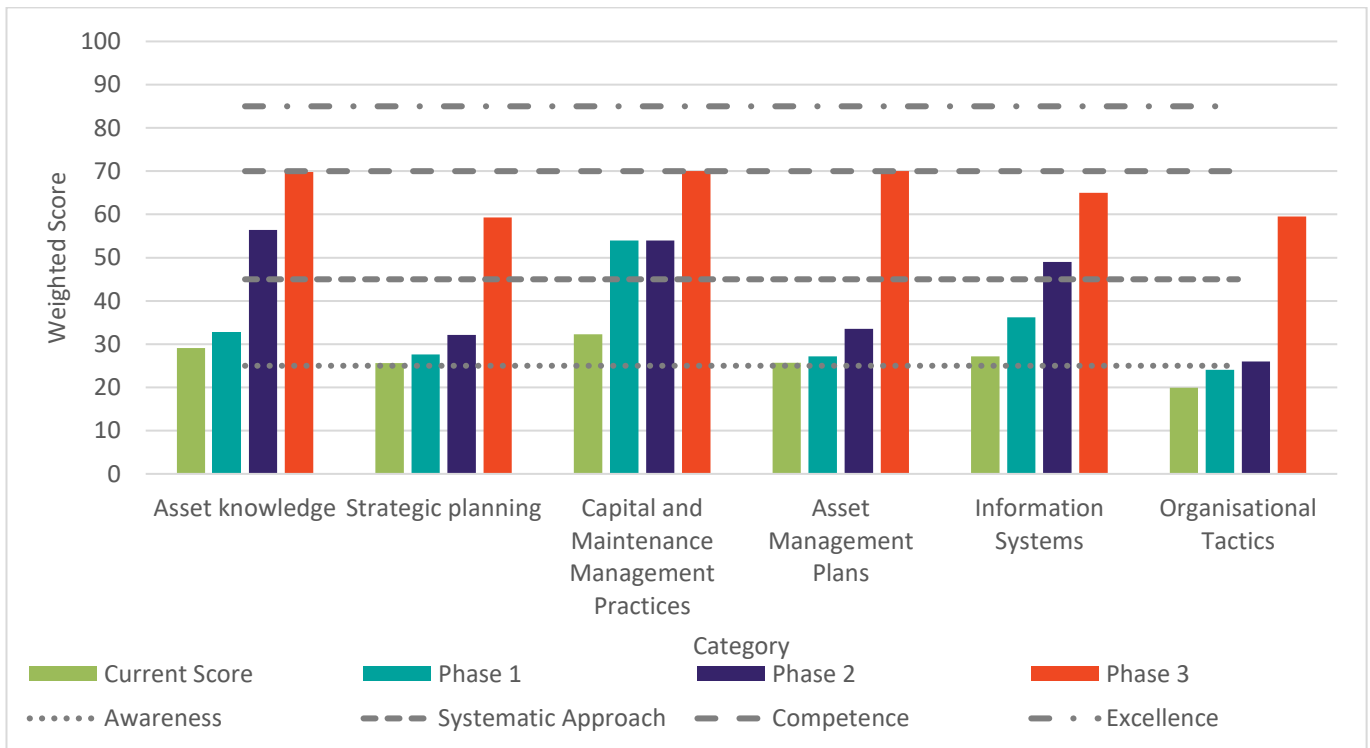


Figure 6-1: Overview of the proposed improvement in AM Practice

5	Chapter confidence	<ul style="list-style-type: none"> • In general data reliability 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 been used without independent verification. The IDP, budgets and financial statements were the primary planning documents for the municipality.
6	Chapter summary	<ul style="list-style-type: none"> • KwaDukuza Local Municipality currently has a practices level of ‘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, with an estimated cost of R 24.5 million (for three municipalities). (See Annexure E)

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	<p>The objective of risk management within KDM 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.</p> <p>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:</p> <ul style="list-style-type: none"> • 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. <p>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.</p>
2	Historic risk management performance	<ul style="list-style-type: none"> • The past risk mitigation tactics were not effective to address the risks experienced by the municipality. • A risk register exists which indicates the risks identified by the municipality. • KDM needs to keep its Customer Complaints Register and Quarterly Performance Plans up to date.
3	Key risks	<ul style="list-style-type: none"> • Inability to maintain existing municipal roads. • Poor storm water management

4	Key risk mitigation tactics	<ul style="list-style-type: none"> • Inability to maintain Municipal roads – Additional plant and machinery are procured, and others are outsourced. • Poor storm water management - Storm water assessment lists must be compiled, and flood prone areas should be monitored, and current infrastructure upgraded. • In addition, hydrological assessments of flood prone areas should be conducted, and the appropriate counter measures should be determined.
5	Chapter confidence	<ul style="list-style-type: none"> • In general data reliability is moderate as KDM 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 had to be trusted without independent verification. • An asset register which is mSCOA aligned needs to be established to allocate accurate criticality and condition grades which will assist in risk matrix establishment
6	Chapter summary	<ul style="list-style-type: none"> • The municipality has a risk register. • Mitigation tactics are listed in the risk register. • 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: <ul style="list-style-type: none"> ○ 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	<ul style="list-style-type: none"> • Key Performance Indicators (KPIs) and benchmarks are management tools for monitoring and improving the performance of people, systems, processes within the municipality. • This is the first asset management plan for the roads and stormwater department of KDM. • Monthly reports linked to KPIs are submitted which indicate areas of interest • A fresh approach is required to record asset movements, asset investments and asset custodianship
2	Historic performance	<ul style="list-style-type: none"> • 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. <p>The necessary components include:</p> <ul style="list-style-type: none"> • 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; <p>Yearly sector targets are reported on a quarterly basis which are:</p> <ul style="list-style-type: none"> • 4km of new gravel roads to be constructed. • 43km of roads to be rehabilitated. • 5.4km of new paved roads with associated stormwater to be constructed. • Potholes to be repaired within 5 days • Non-financial measurable performance objectives in the form of targets and indicators; and • Detailed capital project plan broken down by ward over three years.
3	Chapter confidence	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • South Africa has seen several evaluation and monitoring initiatives in the last five years.

		<ul style="list-style-type: none"> • There is a tendency, however, to promote ambitious monitoring programmes, with scores of indicators, and this is not considered sustainable in practice (which is evident from the fact that at present there is very little monitoring happening). • KDM has a score card linked to KPI's within the roads and stormwater sector that is not as extensive as it should be however it is a good starting point. • The departmental monthly performance reports are submitted to the office of the Municipal Manager to allow the compilation of the Municipal Performance Report. • The report indicates actual performance against pre- determined targets. • As per section 46(1) (iii) of the MSA, the Municipality is required to reflect on the measures which are or were taken to improve performance. • A review on KPI's should be conducted regularly to ensure that the desired service delivery objectives are achieved.
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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	33 582 328	35 093 533	36 672 741	38 323 015	40 047 551
Renewals (Existing)	Renewal	002	All	Revenue	Capital	Capital	Infrastructure	Existing	Roads Infrastructure	Roads Infrastructure	All	All	internal	Road Transport	Core Function	59 819 970	63 341 838	67 061 288	70 989 065	75 136 482
Growth	Growth	003	All	Revenue	Capital	Capital	Maintenance	New	Roads Infrastructure	Roads Infrastructure	All	All	internal	Road Transport	Core Function	8 152 790	8 586 119	9 042 480	9 523 097	10 029 259
Maintenance	Maintenance	004	All	Revenue	Capital	Operational	Maintenance	Existing	Roads Infrastructure	Roads Infrastructure	All	All	internal	Road Transport	Core Function	42 907 288	45 386 770	48 003 041	50 763 416	53 675 599
																144 464 395	152 410 280	160 781 571	169 600 614	178 890 913

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	41 849 690	43 732 926	45 700 908	47 757 449	49 906 534
Renewals (Existing)	Renewal	002	All	Revenue	Capital	Capital	Infrastructure	Existing	Roads Infrastructure	Roads Infrastructure	All	All	internal	Road Transport	Core Function	79 515 459	84 138 543	89 018 954	94 170 608	99 608 162
Growth	Growth	003	All	Revenue	Capital	Capital	Maintenance	New	Roads Infrastructure	Roads Infrastructure	All	All	internal	Road Transport	Core Function	10 562 324	11 123 722	11 714 959	12 337 621	12 993 377
Maintenance	Maintenance	004	All	Revenue	Capital	Operational	Maintenance	Existing	Roads Infrastructure	Roads Infrastructure	All	All	internal	Road Transport	Core Function	56 747 691	59 988 221	63 406 161	67 010 951	70 812 525
																188 677 188	198 985 438	209 843 008	221 278 656	233 322 626

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	<p>A physical component of a facility which has value, enables services to be provided and has an economic life of greater than 12 months.</p> <p>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.</p>
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.
Capacity (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 capacity of an organisation as measured in depreciated replacement cost.
Capital expenditure (CAPEX)	Expenditure used to create new assets, increase the capacity of existing assets beyond their original design capacity 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)	<p>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.</p> <p>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.</p> <p>Note 2: A complex item is one that can be disaggregated into significant components. Infrastructure and buildings are considered complex items.</p>
Comprehensive Infrastructure Plan	Municipal
	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 city 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 city 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 city. The projects within the IDP is also linked to the city'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 capacity 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 capacity 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

No.	Ref.	Risk name	Risk Description	Root Cause	Consequence	Inherent Risk Rating	Controls	Control effectiveness	Residual risk Rating
1.	CH1	Infrastructure: Maintenance	Inability to maintain Municipal roads.	<ul style="list-style-type: none"> -Roads maintenance plan not adequately cash backed. -Budgetary constraints -Shortage of plant and equipment used for road maintenance (Grader, Water cuts etc.). -Outdated Geographical 	<ul style="list-style-type: none"> -Poor service delivery. -Litigation. -Financial loss. -Tarnished image of the Municipality. -High accident rate 	High	<ul style="list-style-type: none"> -Additional Machines and plants are Procured and others are outsourced. -Customer Complaints Register. -Quarterly Performance Plan. -Quarterly Road Inspections. -Roads Maintenance Plan. -Service providers and Engineers. 	Weak	High

No.	Ref.	Risk name	Risk Description	Root Cause	Consequence	Inherent Risk Rating	Controls	Control effectiveness	Residual risk Rating
				<p>Information System</p> <p>Database (Road network register).</p> <p>-Ageing roads infrastructure— road deterioration.</p> <p>-Inadequate human capacity</p> <p>-Rapid traffic volume increase</p> <p>-Adverse weather conditions (Floods etc.)</p>			-Road Master Plan		

No.	Ref.	Risk name	Risk Description	Root Cause	Consequence	Inherent Risk Rating	Controls	Control effectiveness	Residual risk Rating
2.	CH2	Infrastructure: Storm water Management Planning	Poor storm water management.	-Lack of a storm water management plan. -Poor maintenance of storm water infrastructure. -Rapid urban development. -Inadequate budget to provide storm water infrastructure.	-Damage to property. -Claims for damages.	High	-Storm water assessment list		High

No.	Ref.	Risk name	Risk Description	Root Cause	Consequence	Inherent Risk Rating	Controls	Control effectiveness	Residual risk Rating
				-Ageing storm water infrastructure					
6.	F1	MFMA: Compliance	Non-compliance to the MFMA in terms of irregular expenditure	<p>-Lack of identification and reporting of irregular expenditure.</p> <p>-Poor procurement planning by user departments.</p> <p>-Failure to adhere to section 32 of the MFMA.</p>	<p>-Qualification of the financial statements.</p> <p>-Non recoveries of irregular/fruitless wasteful and unauthorised expenditure due to fraud and corruption.</p>	High	<p>-Adhoc Compliance Reviews.</p> <p>-Maintenance of a Register of UIFW.</p> <p>-Monthly Reporting to COGTA and Council.</p> <p>-Payments Compliance Checklist.</p> <p>-SCM Compliance Checklist.</p>	Weak	High

No.	Ref.	Risk name	Risk Description	Root Cause	Consequence	Inherent Risk Rating	Controls	Control effectiveness	Residual risk Rating
							-Weekly Reporting to Clean Audit Committee. -Improved template for reporting		
7.	F6	Liquidity risk	Liquidity risk	-Aggressive capital budget spent over the last 5 years -Increases in operating budget with exceeded revenue growth over the corresponding period	-Financial loss	High	-Controls limited to reporting	Weak	High

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

NO	ACTIVITY	TASKS	OUTCOMES	TOTAL PER ACTIVITY MLM	TOTAL PER ACTIVITY KDM	TOTAL PER ACTIVITY IDM	TOTAL SHARED COST PER ACTIVITY	TOTAL PER ACTIVITY
				(Fees including disbursement, software, vat, total)	(Fees including disbursement, software, vat, total)	(Fees including disbursement, software, vat, total)	(Fees including disbursement, software, vat, total)	(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	TOTAL PER ACTIVITY KDM	TOTAL PER ACTIVITY IDM	TOTAL SHARED COST PER ACTIVITY	TOTAL PER ACTIVITY
				(Fees including disbursement, software, vat, total)	(Fees including disbursement, software, vat, total)	(Fees including disbursement, software, vat, total)	(Fees including disbursement, software, vat, total)	(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 electricity 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