

Mandeni Local Municipality

# ASSET MANAGEMENT PLAN



**SECTOR:** SOLID WASTE  
**PERIOD:** 2019 - 2028  
**DATE:** 31 MAY 2019  
**VERSION NUMBER:** V7  
**PREPARED BY:** ASHLEE MCCRINDLE



Schweizerische Eidgenossenschaft  
Confédération suisse  
Confederazione Svizzera  
Confederaziun svizra



**edtea**

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



ILEMBE DISTRICT MUNICIPALITY  
ILEMBE UMASIPALA WESIFUNDA



**Vuthela**  
ILEMBE LED PROGRAMME

**IMQS**

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## APPROVAL AND CHANGE HISTORY

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### DOCUMENT REVIEW:

DOCUMENT VERSION NO.	REVIEWER NAME	CHANGE HISTORY DETAILS	DATE
V3	<i>Ashlee McCrindle</i>	Updated from review session	22 April 2019
V4	<i>Knowledge Nkala</i>	Updated some details in financial plan	23 April 2019
V5	<i>Ashlee McCrindle</i>	Update from review	7 May 2019
V6 and 7	<i>Ashlee McCrindle, Rob Childs</i>	Update with internal review	15-31 May 2019

### Submitted:

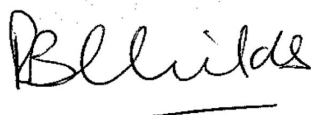


*Ashlee McCrindle*

*IMQS Sector Lead*

26/08/2019

*Date:*



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*IMQS Project Director*

26 August 2019

*Date:*

### APPROVED:

*Mbongeleni Dlamini*

*Manager: Community Services*

*Date:*

# PROJECT INTRODUCTION AND APPROACH

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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.

## ACRONYMS AND INDEX

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### TABLE OF ACRONYMS:

<b>AFS</b>	Annual financial statement
<b>AM</b>	Asset management
<b>AMP</b>	Asset management plan
<b>AR</b>	Asset register
<b>CAPEX</b>	Capital expenditure
<b>CRC</b>	Current replacement cost
<b>DRC</b>	Depreciated replacement cost
<b>EPWP</b>	Expanded public works programme
<b>ERM</b>	Enterprise risk management
<b>EUL</b>	Expected useful life
<b>FY</b>	Financial year
<b>IDM</b>	iLembe District Municipality
<b>IDP</b>	Integrated development plan
<b>IWMP</b>	Integrated waste management plan
<b>KCDM</b>	King Cetshwayo District Municipality
<b>KPA</b>	Key performance area
<b>KPI</b>	Key performance indicator
<b>LOS</b>	Level of service
<b>MLM</b>	Mandeni Local Municipality
<b>mSCOA</b>	Municipal standard chart of account
<b>MTREF</b>	Medium term revenue and expenditure framework

<b>No.</b>	Number
<b>OPEX</b>	Operational expenditure
<b>Pa</b>	Per annum (yearly)
<b>PAMO</b>	Physical asset management office
<b>PMU</b>	Project management unit
<b>R</b>	Rand
<b>RUL</b>	Remaining useful life
<b>SDF</b>	Spatial development framework
<b>SDBIP</b>	Service delivery budget and implementation plan
<b>SMME</b>	Small, medium and micro-sized enterprises
<b>SOS</b>	Standard of service

Full definitions of terminology can be viewed in Annexure B.

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## E. EXECUTIVE SUMMARY

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

<b>1</b>	<b>PLAN OBJECTIVES</b>	To plan effective and efficient infrastructure-based service delivery for the solid waste department in Mandeni 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.
<b>2</b>	<b>OPERATIONAL CONTEXT</b>	
2.1	Municipal mandate	The Mandeni Local Municipality (MLM) is required to collect and dispose of solid waste in a responsible and sustainable manner in all areas within its jurisdiction including the tribal authority areas. It is also responsible for recycling and waste reduction.
2.2	Asset scope	MLM owns no transfer stations or landfill sites, its only solid waste assets are bins, skips and collection vehicles. It currently provides 80% of the refuse collection service and has a private contractor for the remaining 20%. It currently disposes waste at the King Cetshwayo District Municipality (KCDM) landfill site.
2.3	Developmental context of the municipality and key statistics	<p>The municipality has a dispersed rural population, estimated at 148 637 people in 2018 (45 934 households), showing migration trends toward urban areas and transport routes. The area has a high unemployment rate but has identified tourism potential in some areas. There are four Traditional Council areas in MLM. The urban population accounts for only 20%.</p> <p>MLM is challenged with significant debt and relies heavily on grant funding for service provision which make it difficult to meet all the statutory requirements. Under staffing in the project management unit is also affecting service delivery and the ability to spend grant funding, having a circular effect on available budget. There is a need to stimulate economic growth. Notable commercial operators in the area are the Amatikulu sugar milling operations, the Sappi paper mills and Isithebe Industrial Area.</p>
2.4	Stakeholders	<p>The following are key stakeholders in relation to the department:</p> <ul style="list-style-type: none"> <li>• The waste management department and asset management department at MLM</li> <li>• The broader municipality</li> <li>• Customers (residents, businesses, government entities, community organisations, tourists and other visitors)</li> <li>• Private service providers.</li> <li>• District municipality</li> <li>• Neighbouring district municipality</li> </ul>
2.5	Plan maturity (and implications on its use)	<p>MLM, a class B municipality, does not implement many formal asset management systems. This first asset management plan (AMP) in this department is part of an initiative to steer the municipality towards more robust practice. It is based on limited data (confidence level of 81%) and is seen as a rudimentary AMP that establishes a baseline of practice, provides initial findings, and a platform for future plans as the practice maturity improves.</p> <p>The main input documents include the Integrated Development Plan (IDP), Integrated Waste Management Plan (IWMP 2015) as well as the 2018 asset register (AR).</p>

<b>3</b>	<b>CURRENT STATUS</b>	
3.1	Infrastructure status	<p><b>Table E.1</b> summarises the nature, extent and status of assets in the department, which are movable assets with an established replacement value (CRC) of R 5.2 million and a book value of R 4.7 million. Whilst the overall health of the portfolio (based on the condition distribution) is considered to be 'good', street bins have the lowest health status of the asset groups – 'very poor' – indicating an urgent need for renewal or replacement of the bins. The street bins that the municipality owns are a combination of bins for municipal facilities and customers. The portfolio is made up of short life assets (average estimated useful life of 9.8 years) which implies a large renewal need going forward and highlights the risk of over investing in such assets without budget to maintain them. The portfolio health grade model is shown in <b>Annexure C</b>.</p>

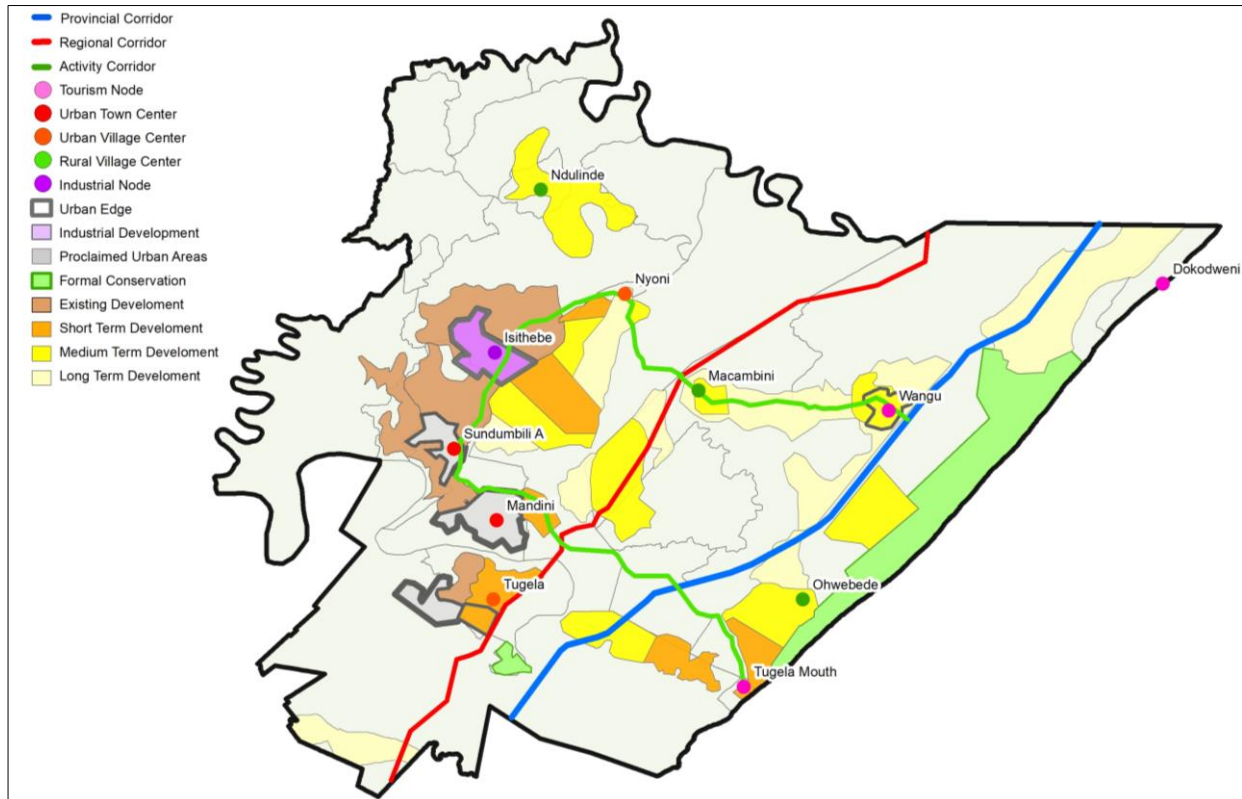
Table E.1: Asset extent summary

Modelled data								Data from AFS	
Asset Group	Extent (No.)	Replacement value (R '000)	DRC (R '000)	Portfolio Health	Residual value (R '000)	Annual consumption (R '000)	Maintenance need (R '000 pa)	AFS Cost opening (R '000)	AFS Carrying value opening (R '000)
Street bins	150	192.1	82.7	29%	38.4	30.7		165.6	71.3
Refuse skips	110	1 004.2	824.2	78%	200.8	80.3	20.1	918.0	769.8
Vehicles	2	4 058.4	2 660.5	57%	811.7	463.8	210.0	3 623.6	2 374.3
<b>TOTAL</b>	<b>262</b>	<b>5 254.7</b>	<b>3 567.5</b>	<b>60%</b>	<b>1 050.9</b>	<b>574.9</b>	<b>230.1</b>	<b>4 707.2</b>	<b>3 215.3</b>

3.2	Spatial structure	<p>Main urban centres, village centres and tourism centres are shown in <b>Figure E.1</b>. The figure highlights the nodes of potential tourism and the intended development areas from the spatial development framework (SDF). The municipality places a focus on tourism and has highlighted a need to regenerate existing industrial areas. The future capacity of the department will need to facilitate such growth at these identified nodes.</p>
3.3	Service delivery operations	<p>A more strategic approach to packaging and scheduling of capital and operational activities needs to be developed and implemented in the department. There are no scheduled solid waste capital projects, only budget for operational activities which derive funding through tariffs and grant funding. A portion of the collection service is outsourced, but it is the municipality's intention to completely in-source the collection activity in the future.</p> <p>Due to the limited budget there should be a focus on awareness campaigns in the aim of reducing waste output (which do not require significant funding). The iLembe District Municipality (IDM) has indicated an intention of providing a landfill site which would prove convenient for disposal – although no timelines or additional details are available.</p> <p>Vehicles are maintained by a separate department and Maintenance activities should be better documented for budget purposes. Operational spending in the department is very close to the current need, however there are limited human resources. There is a constrained budget and a need for additional people as currently the service is not able to guarantee a weekly collection (as per target).</p>

	<p>The collection vehicles are critical assets for the department, currently in a good condition, but need continuous maintenance. The distance to the KCDM landfill site is unfavorable for the expected life of the vehicles and the opportunity of a transfer station or composting facility would alleviate some strain on the vehicles and the human resources.</p>
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Figure E.1: Predominant development areas in the municipality



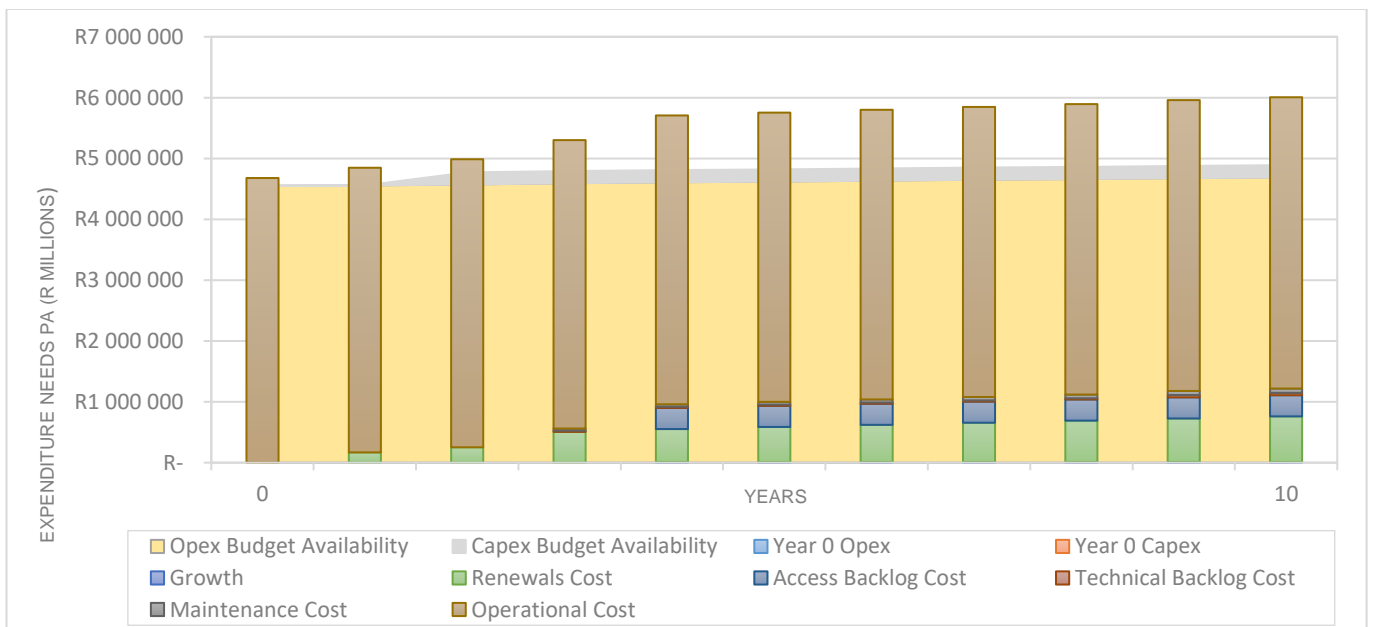
<p>3.4</p>	<p>Levels and standards of service</p>	<p>Currently the municipality pursues a minimum level of service provision of communal collection, in line with national policies. In urban areas, most existing customers are provided with kerbside collection. The standard of service pursued is a weekly service collection, which is not always achievable due to constrained resources. This will continue to be a challenge as the service is expanded to more customers, unless the corresponding human and vehicle resources are also provided for.</p> <p>Historically the municipality has been providing approximately 20 skips per year to service up to 4 000 households. However, this budget was cut in 2018 and no further capital is scheduled on the medium-term revenue and expenditure framework (MTREF) for the upcoming years. The access backlog is estimated at 17 782 households (39%), without service provision, all in rural areas. The associated capital cost to provide them with service is R 11.6 million. The major constraint with providing service is the associated capital and operational budget– this is exacerbated by the distance to the landfill site and lack of transfer stations. The operational cost associated with providing service to these backlog customers is R 1.7 million per annum for the total backlog, this figure would increase in proportion with the backlog eradicated per year.</p> <p>Maximum benefit is likely to be achieved by prioritising the available resources to the backlogs in more densely populated area - urban areas and development nodes. Specific</p>
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		nodes such as Tugela Mouth area, Dokodweni, Macambini, Nyoni and Ndulinde are all rural or tourism nodes which should be a focus of the backlog eradication.
3.5	Financial status	<p>MLM budgets the majority of spending for the department on operational expenditure (OPEX- R 4.7 estimated operational need for 2019) as opposed to capital expenditure (CAPEX- R170 000). Currently there is no budget for capital spending for the department planned in the next three years, nor a maintenance budget shown on the MTREF. Revenue generated from the department is spent on operating costs with any remaining funds going to other departments.</p> <p>The municipality relies substantially on grant funding and has a notable challenge in terms of revenue collection, with the gross debtors' balance increasing yearly. The actual grants received are not consistent in relation to the budget as actual spent in 2016/17 was 64% higher than the budget while 2017/18 actual grant funding decreased. The cost coverage ratio indicates that the municipality will struggle to meet monthly fixed operating commitments without collecting any additional revenue. Total bad debts increased by 50% in 2017/18 indicating the affordability challenge for consumers.</p>
3.6	Reported risk exposure	<p>Key risks for the department include sufficient oversight and administration of the waste function; lack of human, equipment and plant resources and the poor condition of some bin assets.</p> <p>Mitigations include appointment of a manager for oversight, additional hired plant and grant funding, review of skills retention and attraction policies as well as renewal spending on bins. The Municipal Manager is the identified risk owner. The municipality would benefit from an improved risk management system – to inform decisions around priorities.</p>
3.7	Reported performance	<p>The department's performance is measured against KPIs. The department's target is to provide 4 000 additional households with access per year (with R 200 000 capital budget- not accounting for associated operational costs). It has increased the number of households with access to service in previous years, however the lack of budget hinders the amount of people it can realistically and sustainably service. With a limited budget, providing more service means that the standard of service is affected and thus the department underperforms on its target of a weekly refuse collection.</p> <p>The strategy for addressing the backlog needs to be reviewed- strategies of promoting denser settlement and/or developing a district landfill, for easier service capacity, are envisioned.</p>
3.8	Infrastructure management maturity	The municipality has been assessed to have a low level of practice maturity (currently has a level of "awareness" in most areas) of infrastructure management and needs to pursue improvement as an ongoing commitment. Processes need to be documented and activities effectively recorded as a baseline to explore lifecycle and management optimisation. Regular (ideally annual) reviews and enhancements of this initial AMP (and those of other departments) will facilitate practice improvement.
<b>4</b>	<b>FUTURE DEMAND</b>	
4.1	Demand forecast	The growth for the municipality has been forecast at a rate of 0.28% per annum based on previous census data. The total increase in households over the ten-year period is 1 302, an average of 130 households per year up to 47 237 households in 2028.

		<p>The solid waste department implements awareness campaigns to try to reduce waste production and has started implementing some recycling programmes – such as waste separation at source at the Mandeni offices. There needs to be some planning for transfer facilities or composting facilities to reduce the distance to the current landfill and enable easier access for others to dispose waste. Providing service to the current backlog as well as growth will put increased pressure on the department operationally and further emphasises the need for transfer or landfill sites.</p>
4.2	External bulk infrastructure implications	<p>Currently the municipality makes use of the KCDM landfill site with a flat rate agreement. The agreement should be reviewed so the charge is for quantity of waste dumped and the municipality implement a budget for a transfer and composting station.</p> <p>Additionally, the KCDM landfill site has only 2-5 years remaining airspace, in the long term if IDM does not develop a district landfill then MLM may need a project to identify potential landfill sites. It is important for MLM to have a clear indication of IDMs intentions and timelines for their landfill project to accurately plan for the demand.</p>
4.3	Municipal infrastructure implications	<p>Large industries and some private customers have contracted private service providers to remove and dispose of their waste. There is also a private landfill site within the municipality, which the municipality previously made use of.</p> <p>The customer growth will create additional strain, besides the access backlog, on the budget if service is to be provided to all the new customers from the forecast growth. The total capital required to provide services to new customers would be approximately R 675 110 over the ten-year period, which equates to additional services for 1 302 households (compared to the backlog of 17.8 thousand households with no service). As such, an approach of giving priority to addressing growth in the urban areas may be considered. This approach would reduce the required capital for growth to R 80 200 over the period (additional service for 270 households). This will contribute to the departments target of 4 000 households per annum – but the target is not affordable , particularly as the associated costs are substantially higher when operational costs are factored in.</p>
<b>5</b>	<b>LIFE-CYCLE PLAN</b>	
5.1	Short and medium-term plan	<p>Currently there are no capital projects planned for the MTREF – only OPEX. However, as part of the lifecycle plan it has been identified that capital is needed for renewal of assets (replacement of vehicles, skips and bins). It is suggested that the budget be adjusted to include provision for renewal spending in the department. Renewal/replacement needs to be approximately R 500 000 pa, however as there is no current planned budget this has been reduced, in this plan, to a smaller amount for the first two years.</p> <p>It is important that budget be allocated to the current assets in poor condition and for maintenance expenditure. The operational budget for the baseline FY (2017/18) is in line with the estimated need but is not expected to need to double in the next FY (as planned in MTREF) but increase proportionally with the new service provision. Operational spending accounts for the majority of spending per year.</p> <p>Although the required budget to address the backlog is very high the suggested approach is to prioritise service provision in line with the identified nodes in the SDF and address a portion of the backlog but in a more sustainable manner and in line with available budget. The spending per year is suggested at R 347 701 for addressing the backlog (approximately 534 households per year). The budget for new service provision to accommodate growth</p>

		<p>is only R 11 457 on average per year – prioritized in the urban areas. Both these figures have a cost factor to allow for collection vehicles. More vehicles will be required to cater for the growing customer base, this requirement can be reduced if a closer dumping site is made available.</p> <p>In the short-term the department must continue with its awareness campaigns in communities as the budget is still very constrained. A potential opportunity of using the expanded public works programme (EPWP) to assist in awareness and cleanup campaigns is noted.</p>
5.2	Long term lifecycle plan	<p>The long-term focus of the solid waste lifecycle plan is to continue to address the access backlog while providing a sustainable service to existing customers. Focus shifts towards maintaining the existing assets through some capital renewal/replacement. This allows proper management and maintaining of the portfolio to provide service to the customers as per the municipal objective. These long-term plans may be updated to include provision for a landfill site if the IDM does not follow through with its plan.</p> <p>The overall lifecycle needs over the period are capital intensive and so the lifecycle plan has been adjusted in line with the envisioned available budget and prioritised department needs. It is assumed that additional budget can be procured for the department due to the renewal and new asset capital need over the 10-year period. The long-term plan is to increase spending on renewals in line with the growing portfolio and to steadily address the backlog each year. The OPEX then increases proportional to the new customers being provided with service. <b>Figure E.2</b> shows the resulting adjusted lifecycle spending and comparative budget per year – highlighting the need to secure additional funding for the department.</p>

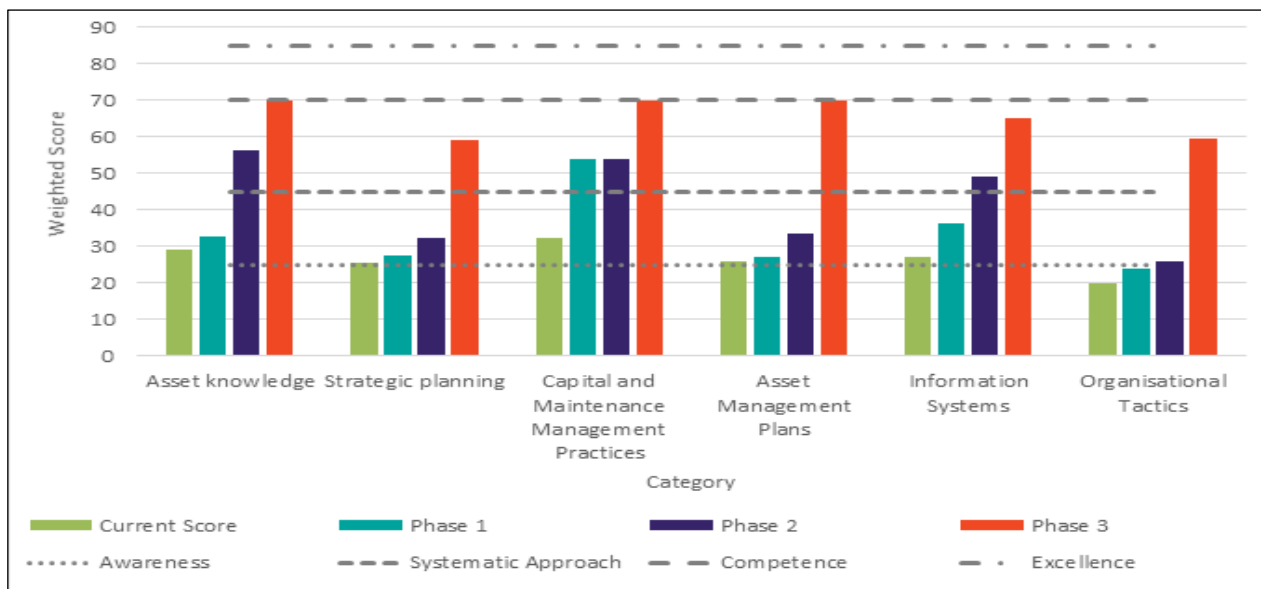
Figure E.2: Combined lifecycle adjusted spending for the portfolio



<b>6</b>	<b>FINANCIAL PLAN</b>	
6.1	Financial health, budget availability, trends, forecast	The solid waste department generates approximately R 8 million revenue per annum, however consumer debtors increased by 18% from 2015/16 to 2016/17 and a further 6% increase in 2017/18. This challenge hinders the municipal ability of increasing the tariffs

		<p>to generate more revenue. The municipality is faced with high unemployment rates and payment of tariffs is a challenge.</p> <p>MLM is highly dependent on grant funding as revenue streams are small. Capital grants and transfers (for all departments) totalled R 47.1 million in 2017/18. Currently there is no budgeted capital expenditure for the department in the budget period. Expenditure increased by 81% from actual expenditure in 2017/18 to budgeted functional expenditure in 2018/19. However, based on the previous years adjusted budgets, a 6% inflation adjustment is envisaged (considered more likely) for the planned lifecycle spending.</p> <p>If the stated functional expenditure budget is available, then some budget would need to be moved to CAPEX to spend on renewal which is flagged as a necessity.</p>
6.2	Revenue management status	<p>The revenue growth on refuse removal is on average 3% despite a tariff increase target of 6%. The municipality needs to consider affordability of rates to avoid an increase in bad debts. Forecast revenue for the department increases from R 8.4 million in 2017/18 to R 8.9 and R 9.9 million in 2018/19 and 2020/21 respectively. However, with the strategy of providing only communal collection, it is noted that the revenue will only increase if the collection rate from currently billed customers also increases.</p>
6.3	Cost management	<p>The solid waste department plans to phase out private service providers which will save on some operational costs – although it will then be required to provide the full collection and should ensure it has enough trained resources in place before this phase out. The department lifecycle plan includes a provision for increasing billed services (by 3% over 10 years) in the urban areas to ensure some growth in the billing base.</p>
6.4	Financial management strategy and plan	<p>For the solid waste life cycle plan, the municipality needed capital funds of R 168 750 in the 2018/19 financial year, increasing to R 253 130 in 2019/20 and R 560 840 in 2020/21, to allow for spending on renewals. This will require an adjustment to the current planned budget which has no capital budget (R 0 ) allocated for the department. Specifically, the operational budget reflected should have a portion reallocated to this capital renewal as the functional expenditure will not require 81% increase in the next year.</p> <p>There is an opportunity to use the EPWP grant funding for increasing human resources to support operations. Furthermore, the target for backlog provision should be adjusted as the viability of providing 4 000 households with service each year is not feasible while maintaining the state of the portfolio and standard of service.</p>
<b>7</b>	<b>ASSET MANAGEMENT PRACTICES</b>	
7.1	Asset management practice context	<p>MLM is a category B municipality and is coming off a low asset management practices base, however MLM is committed to improving its practices by implementing improvements, potentially with support from 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 MLM assessment found a relatively low level of asset management practice maturity, especially in the “physical asset management” category, in line with many municipalities in SA.</p>

Figure E.3: Overview of practice assessment results and proposed improvement phases



7.2	Current and target performance	Current practice is assessed to be predominantly “awareness”, the municipality aims to move towards a level of “competence” as shown in <b>Figure E.3</b> . The proposed 3-year phased approach will be dependent on funding availability.
7.3	Priority improvement needs	The proposed improvement plan prioritises a municipal-wide improvement of the maintenance management process followed by an enhancement of the asset register (and associated data to inform financial and physical management of assets) and finally improving the management processes associated with projects, all of which are planned to be implemented over a 3-year phased period, the cost of which will be split across all departments and potentially with KLM and IDM. <b>Figure E.3</b> shows the projected improvement per phase.
<b>8</b>	<b>CONCLUSIONS AND RECOMMENDATIONS</b>	
8.1	Objectives, challenges, and proposed response strategies	<p>The municipality aims to continue to provide a sustainable solid waste service to existing and new customers. However, there are constraints on the availability of human and vehicle resources which impacts on the standard of service it is providing, and the ability to extend the service to address backlogs and accommodate growth. Provision has been made in the forecasts to address these costs though on a prioritised basis in line with envisaged affordability.</p> <p>The approach proposed for the department is to prioritise backlog eradication in identified nodal areas of the municipality to respond to, and further encourage, development in those areas. Backlog reduction per year is tempered to allow a more sustainable service and a shift of focus to include renewals in the department. The focus on awareness campaigns and waste reduction should continue. In the longer term the feasibility of garden refuse, recycling and composting stations should be investigated.</p>
8.2	Proposed programmes and budgets	The main expenditure in the department is operational expenditure. Currently the department’s service performance needs to improve – through the provision of adequate human resources. The department has been under spending on renewals and maintenance and not properly ring-fencing such expenditure, efficiency in the operational aspects can only be improved if adequate data on such activities is



		<p>documented. The proposed expenditure in the MTREF is in annexure A and has stated a required capital need for renewal in the budget years that should be adjusted.</p> <p>An emphasis needs to be retained on adequate renewal throughout the planning period with a small budget to meet growth and a moderate budget for addressing the access backlog eradication. The risk of inadequate operational oversight can be mitigated in the same manner by filling key personnel positions. A focus on budget control and prioritisation is emphasised for the department; as well as debt and revenue collection.</p>
8.3	Recommendations	<p>It is recommended that Council:</p> <ul style="list-style-type: none"> <li>a) Note the content of this first rudimentary AM Plan, which has been prepared through the Vuthela-Ilembe LED Programme;</li> <li>b) Confirm that the report findings be used to inform; <ul style="list-style-type: none"> <li>▪ the preparation of budgets, strategies and plans relating to the lifecycle management of the solid waste department; and</li> <li>▪ proposed improvements to the management of the solid waste infrastructure, subject to securing the required funds.</li> </ul> </li> </ul>

# 1 INTRODUCTION

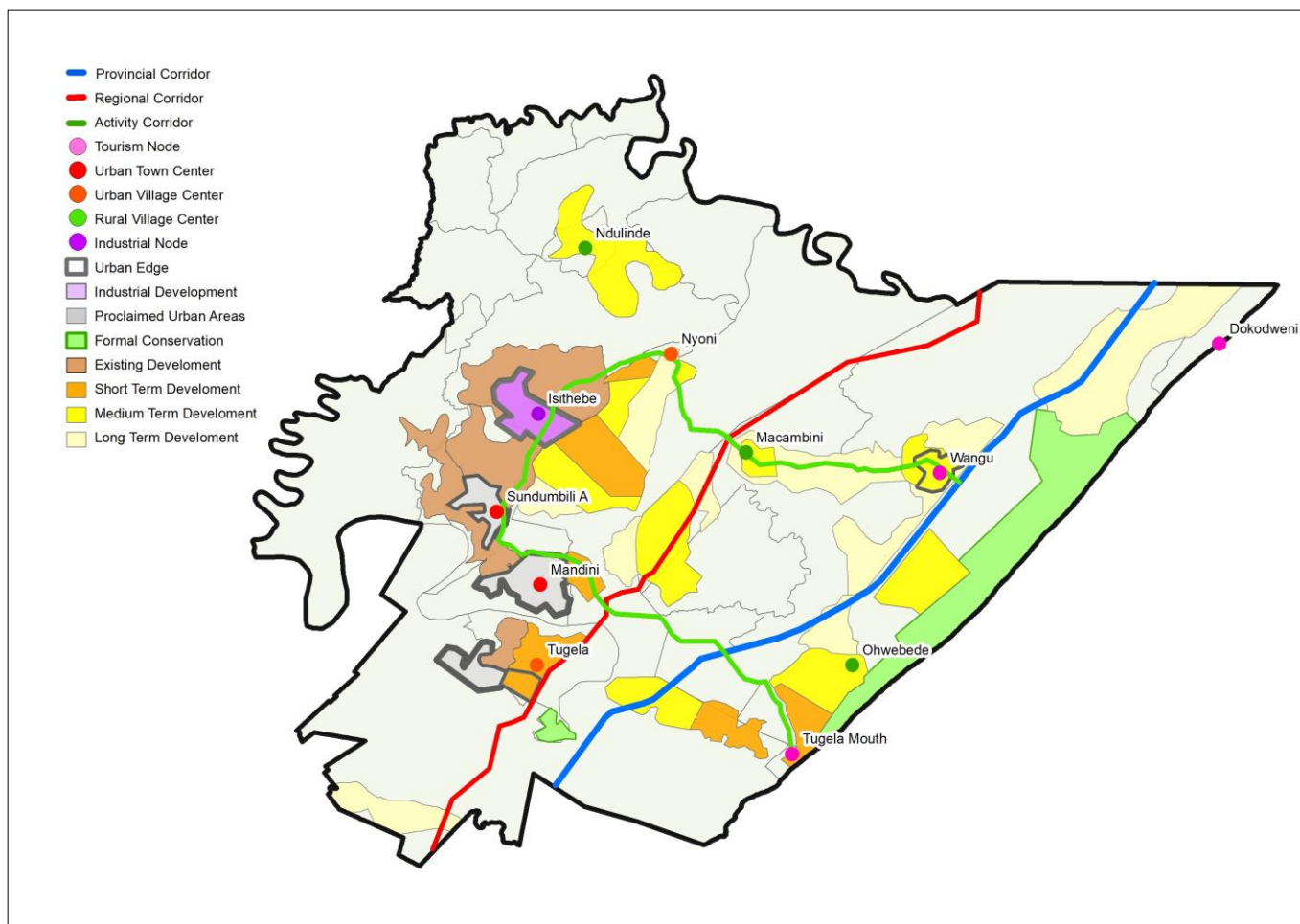
**The purpose and scope of the plan, its stakeholders, an overview of relevant internal and external context, the asset and asset management system status, and approach to reporting the level of confidence in the plan's outputs.**

1	Plan objectives	To plan effective and efficient infrastructure-based service delivery for the solid waste department in Mandeni 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	<p>The Mandeni Local Municipality (MLM) is required to ensure that solid waste is managed and removed in a responsible and sustainable manner in all areas within its jurisdiction including the tribal authority areas. Included in its mandate is refuse collection, waste disposal, recycling and waste reduction, as well as street cleaning. The promotion of a healthy and safe environment for the community also forms part of this mandate.</p> <p>MLM provides kerb collection to all registered customers (business and residential) within the urban areas of Mandeni, Sundumbili, Tugela Rail, Pardianagar, High View Park and Tugela Mouth. Informal areas adjacent to these face challenges of formalisation and access and are currently not on the billing system. Rural areas within the municipality are provided with communal bins placed strategically within walking distance of households and emptied on a weekly basis. Public amenities and services also need to be serviced as well as non-residential customers.</p>
3	Stakeholders	<p>Stakeholders who are impacted by, or have an impact on the solid waste department include, but are not limited to:</p> <ul style="list-style-type: none"> <li>• The waste management department</li> <li>• Fleet management</li> <li>• Physical asset management office and broader municipality</li> <li>• Customers</li> <li>• iLembe District Municipality (IDM)</li> <li>• Private service providers and contractors</li> <li>• Independent lobby groups/ organisations (e.g. environmentalists)</li> <li>• Tourists and other visitors to the municipality</li> </ul>
4	Social context	<p>Situated along the east coast of South Africa MLM covers approximately 545.5km<sup>2</sup> of, predominantly rural, land area. Some specific challenges faced in a social context include:</p> <ul style="list-style-type: none"> <li>• The dispersed rural population (a challenge in terms of providing waste services, especially a door to door collection, due to the high resource requirement).</li> <li>• A high rate of unemployment (tied to a notable lack of employment opportunities and marketable skills).</li> <li>• An access challenge to productive resources.</li> </ul>
5	Political context	<p>Mandeni Municipality is made up of 18 electoral wards with Ingonyama Trust land accounting for most of its land mass. There are four Traditional Council areas:</p> <p>Sikhonyane (eLangeni) Mathonsi Macambini Hlomendlini (Ngcobo)</p>

6	Economic context	<p>Mandeni local municipality has limited economic activity and high levels of poverty. Some of the key points in relation to economic context include:</p> <ul style="list-style-type: none"> <li>• Sundumbili Township and Mandeni Town are the only notable urban centres with some additional urban areas in Tugela and Tugela Mouth;</li> <li>• The key industrial activity is agriculture (farming sugar cane, or subsistence farming and mostly in the traditional land areas);</li> <li>• There is an emphasis on the need for local economic development projects to help reduce poverty levels. Communities have specifically communicated the need for job opportunities amongst youth.</li> <li>• There is a need to stimulate economic growth. There has been little recent private sector investment, nor notable expansion of the residential or commercial space in the municipality.</li> <li>• The major commercial operators in the area are the Amatikulu sugar mill, the Sappi Paper mill and the Isithebe Industrial area;</li> <li>• On the edges of the urban areas, within the Isithebe Industrial area and Sundumbili Township are informal areas with very limited basic service provision – these offer accessibility issues to solid waste collection.</li> </ul>
7	Technical context	<p>The waste department does not have any current software or smart route systems in place. There is also a data challenge in relation to billing data and the customer data base which could use a technical upgrade.</p>
8	Financial context	<p>The municipal revenue base has remained stagnant for a long period and shows signs of decline – with significant debt owed (approximately R 35 million from the waste management department alone). The municipality is also heavily reliant on grant funding for service provision.</p>
9	Legal context	<p>Several statutory documents govern refuse removal in municipalities, including:</p> <ul style="list-style-type: none"> <li>• The South African Constitution – which requires that all citizens have access to basic services;</li> <li>• the Government Municipal Systems Act -which details the municipal responsibilities in relation to provision of basic services; and</li> <li>• the National Environmental Management: Waste Act, 2008 – States a statutory obligation to provide service to an acceptable standard, designate a waste officer and develop integrated waste management plans.</li> </ul>
10	Institutional context	<p>The solid waste department in Mandeni does have an integrated waste management plan, which is currently in the process of being updated and a new version is due in 2019. The department also has to abide by specific waste bye-laws as well as rely on the governance of the waste management officer (that still needs to be appointed). Furthermore, the department is required to align projects and targets to identified needs in the IDP. Although, currently no documented procedures exist, a municipal wide asset management procedures document is being developed.</p>
11	Procurement strategy	<p>One procurement approach is the <i>Contractor Development Policy and Implementation Strategy</i>, which provides previously disadvantaged entrepreneurs with opportunity in the civil, construction and electrical sectors. While uplifting and empowering individuals the programme also sets out too:</p> <ul style="list-style-type: none"> <li>• Increase the active participation of Mandeni Municipality’s small, medium and micro-sized enterprises (SMME) and cooperatives in the local economy by 5% every year.</li> <li>• To formulate a policy enabling improved quality of life for citizens/customers, by optimising employment and economic empowerment.</li> </ul>

		<ul style="list-style-type: none"> <li>To mainstream the local and previously disadvantaged SMMEs and cooperative development in the affairs and structures of the municipality through annualised planning, implementation, monitoring and evaluation of black economic empowerment programme utilising an escalating budget of at least 10% of the municipal budget.</li> </ul> <p>Currently underspending on conditional municipal grants is a risk area for MLM. There is a strategy to mitigate delays in the tender process. Additionally, the project management unit (PMU) is understaffed causing a delay with service delivery.</p>
12	Sector strategic objectives	The main objective of the department is to provide basic service to all: the SDBIP indicates a target of providing service to an additional 4 000 households per year, though this is not sufficiently funded. The department also wants to promote a responsible and educated approach to waste reduction and recycling. Although it is noted that the current target is infeasible as the associated operational cost is currently not accounted for. This yearly target will be revised after considering the lifecycle strategy.
13	AM objectives - AMS	To ensure that a complete, accurate and up-to-date computerised assets management system is maintained.
14	AM objectives - Infrastructure	To ensure assets controlled and owned by the municipality are properly accounted for, maintained and managed to continue to provide service to the customers as per the municipal objective.
15	Key developmental themes	<p>Several developmental themes are highlighted in the SDF and IDP:</p> <ul style="list-style-type: none"> <li>Industrial regeneration to support industry in Mandeni becoming major contributors at a provincial level.</li> <li>Focus on tourism opportunities along the Mandeni coastline.</li> <li>Planning basic services to support such development – solid waste removal and adequate waste bins will be needed to ensure clean and attractive tourism areas.</li> <li>Promoting conservation and sustainable/responsible development, implementing conservation management.</li> <li>Encouraging densification along transport routes and in urban areas.</li> <li>Promoting development by introducing incentives.</li> <li>Focus on regular maintenance and upgrade of existing infrastructure.</li> </ul>
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. The municipality is comprised of 63% tribal land but is seeing a trend of urbanisation as people move away from rural areas and settle along major transport routes and developmental nodes. This is due to accessibility (including to public transport) and the availability of social facilities and basic services. Currently there is still a need for better administration of land around the urban edge.</p> <p>Main urban centres, village centres and tourism centres are shown in <b>Figure 1.1</b>. The figure also shows the main transport routes where densification is occurring – as well as municipal planning for development as set out in the SDF. These urban and tourism nodes should be a focus for service provision prioritisation in order to encourage settlement in these areas.</p>

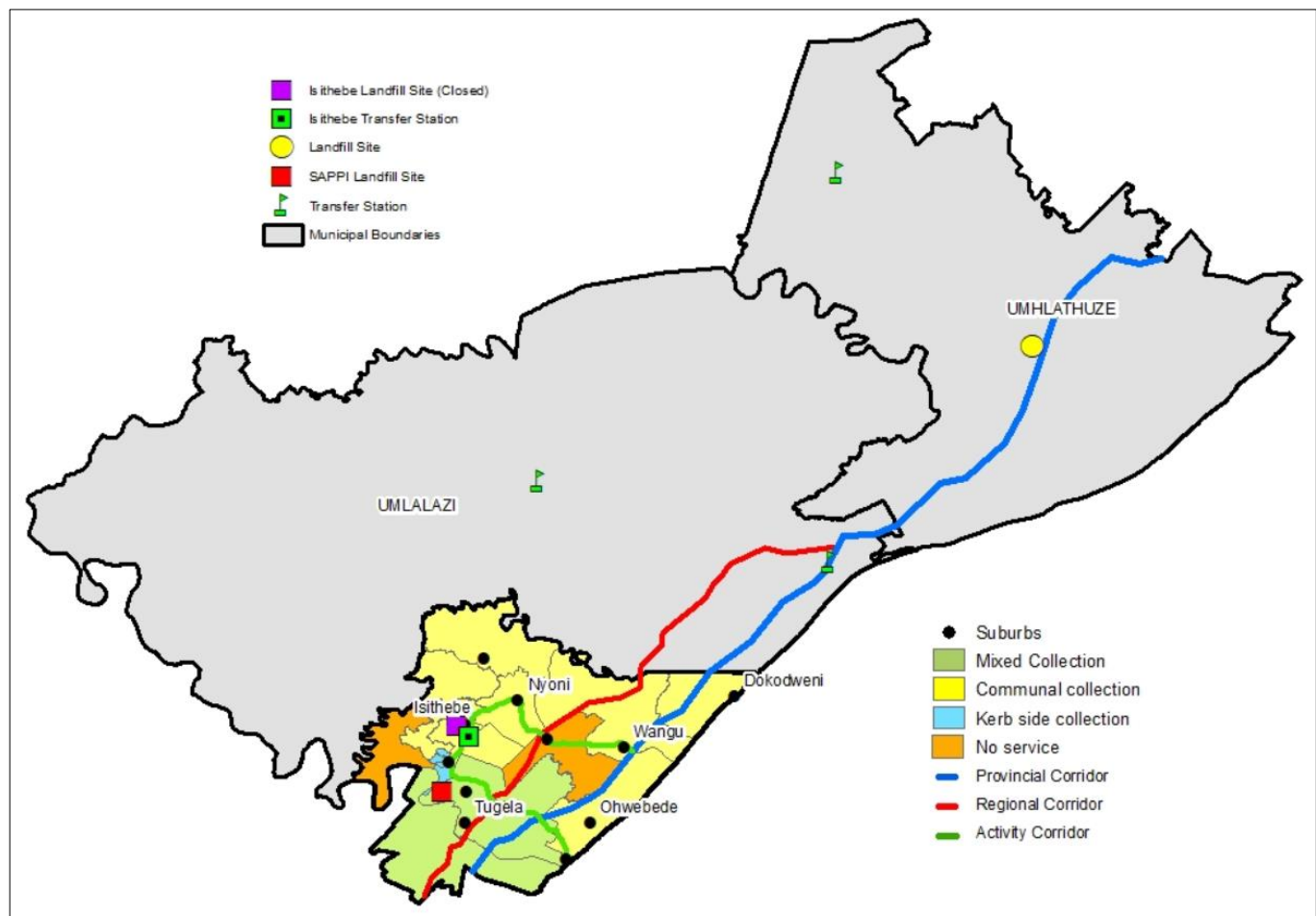
Figure 1.1: Predominant development areas in the municipality



17	Key sector AM roles (and suppliers)	<p>The Director of the department manages the planning of waste activities and the provision of public waste services; however, this is currently an acting position. Once this position is filled the municipality also needs to fill the role of Waste Officer (a statutory requirement). The following key points are highlighted for the department:</p> <ul style="list-style-type: none"> <li>• Solid waste management falls under the community services department.</li> <li>• The vacancy of Waste Officer is a risk and needs to be a key focus to fill. The waste manager oversees the department progress on KPAs, monitoring private waste disposal practice, compliance and promoting reduction and recycling initiatives.</li> <li>• Currently the municipality provides kerbside collection in most urban areas as well as communal collection skips around the municipal area. The majority of this collection is done in house and the remainder is outsourced to a private service provider.</li> <li>• The municipality previously started phasing out external suppliers and has come from a fully contracted solid waste removal service to only one contractor who provides roughly 20% of the service.</li> <li>• The two municipal collection vehicles are serviced by the technical department, but skips are maintained by the solid waste department.</li> <li>• There are no municipal landfill sites or transfer stations, there is a standing arrangement with King Cetshwayo District Municipality to take refuse to their district landfill – 70km from Mandeni, as illustrated in <b>Figure 1.2</b>.</li> </ul>
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		<ul style="list-style-type: none"> <li>• Hospitals, the mining sector and the large industrial entities in the municipality make use of private service providers to collect their refuse.</li> <li>• The Sappi Tugela mill has their own landfill site which the municipality made use of previously. The Isithebe industrial complex has its own transfer station and has closed its landfill site.</li> <li>• There is a 'youth jobs in waste' programme (an educational awareness campaign on waste management programmes targeted at schools, and residents).</li> </ul>
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Figure 1.2: Location of solid waste facilities



18	Overview of infrastructure	<p>The solid waste department does not own or control any facilities, the department assets are made up of skips, bins and vehicles for service provision. Currently only two waste collection trucks are owned and 160 waste containers.</p> <p>The wheelie bins have the lowest portfolio health with more than 70% of their value depreciated (<b>Table 1.1</b>). These are municipal owned bins provided for community facilities, public amenities and some customers. The low portfolio health indicates that the municipality will need to invest money in bins in the short term. In contrast both the skips and vehicles have 'very good' and 'good' portfolio health grades respectively. The portfolio health grading scale is shown in <b>Annexure C</b>.</p> <p>The total asset purchase value for solid waste is represented as R 4.7 million in the financial asset register. The calculated replacement value in 2018 is at R 5.2 million</p>
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		<p>(which accounts for the time value of money). This current replacement is calculated by escalating the purchase price of the assets at an averaged rate. The depreciated replacement cost is at R 3.6 million, which is based on the CRC (carrying value at R 3.2 million), showing the majority of the portfolio has not yet depreciated. However, it should be noted the department does have short life assets (EUL average 9.8 years) which means that this overall portfolio health grade will deteriorate quickly if there are no capital investment in renewal/replacement of the assets. The solid waste assets in the financial asset register (FAR) all have a residual value (RV), in the table the residual value shows the same % RV (20%) for the assets in relation to their CRC. The annual consumption, represented in current replacement terms, shows the loss of asset value per year.</p> <p>The assets are distributed across the municipality as the skips are placed to maximise their service potential to households. The lack of a landfill or transfer station within the municipality will have a large effect on the maintenance and life of the waste collection vehicles – as they will then have a reduced expected useful life (EUL).</p>
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Table 1.1: Asset extent summary

								<i>from FAR</i>	
Asset Group	Extent (No.)	Replacement value (R '000)	DRC (R '000)	Portfolio Health	Residual value (R '000)	Annual consumption (R '000)	Maintenance need (R '000 pa)	AFS Cost opening (R '000)	AFS Carrying value opening (R '000)
Wheelie bins	150	192.1	82.7	29%	38.4	30.7		165.6	71.3
Refuse skips	110	1 004.2	824.2	78%	200.8	80.3	20.1	918.0	769.8
Vehicles	2	4 058.4	2 660.5	57%	811.7	463.8	210.0	3 623.6	2 374.3
<b>TOTAL</b>	<b>262</b>	<b>5 254.7</b>	<b>3 567.5</b>	<b>60%</b>	<b>1 050.9</b>	<b>574.9</b>	<b>230.1</b>	<b>4 707.2</b>	<b>3 215.3</b>

19	Overview of the level of performance	<p>The solid waste department managed to provide some additional skips to alleviate backlog until 2018 – where the budget was cut completely. The annual target of 4 000 additional households serviced per year is dependent on budget being provided for the skips – however it should be noted that this also has a direct impact on operating expenditure in a department with already strained resources.</p> <p>Some key department risks include:</p> <ul style="list-style-type: none"> <li>• Department resourcing, vacant positions as well as cutting of expanded public work programme (EPWP) budget.</li> <li>• Illegal dumping across the municipality, a need for waste education campaigns was identified as a mitigation.</li> <li>• High cost of addressing backlog due to sparse rural population.</li> <li>• MLM has a challenge of funding and current debtors (from non-payment of services).</li> <li>• Poor road conditions further hinder service provision in some areas.</li> </ul> <p>There is opportunity to increase awareness programmes from the solid waste department officials to communities as these projects require much less resourcing.</p>
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20	AM maturity	Currently the municipality does not formally implement many asset management systems. This AMP is a high-level initial document (together with similar documents for other services) to start steering the municipality towards implementing quality asset management and asset management planning. This is the first AMP written for the department in MLM and is based on some limited information – as such it is considered rudimentary. The AMP will output projects over the ten-year project in line with strategic vision and documents to prioritise the spending of a constrained budget.
21	Availability and quality of key data and information, lifecycle models	The asset register was used as a base for modelling, but had predominantly accounting fields – a condition was assigned to assets based on RUL. Furthermore, some assets did not have a depreciated carrying value on the register – these were depreciated based on their purchase date. Some contextual information was obtained from a dated IWMP.
22	Key data / modelling assumptions	<ul style="list-style-type: none"> <li>• The purchase price for items was used to determine the current replacement cost (CRC) by adding an assumed average inflation of 4% pa.</li> <li>• A straight-line depreciation was applied to obtain the DRC from the CRC</li> <li>• RUL was assumed based on date of purchase and EUL.</li> <li>• Condition was assumed based on RUL</li> </ul>
23	Chapter summary	<p>MLM has an obligation to provide waste removal and management services within its jurisdiction, it provides weekly collection services either at a door to door basis or using communal skips. Currently the municipality makes use of a service provider for 20% of the collection services it provides. It does not own solid waste facilities and makes use of the neighboring district landfill – putting additional strain on its collection vehicles. Large industrials are currently making use of private service providers to collect and dispose of waste.</p> <p>Key stakeholders in the department include the municipality, private service providers, community members and the environment. Currently the key position of waste officer in the municipality is still vacant contributing to the department risk of scarce human resources.</p> <p>The portfolio is valued at approximately R 5.25 million with a health grade of ‘good’ (60%) overall and is comprised predominantly of short life assets. The portfolio also carries residual value on its assets.</p> <p>Key constraints, risks and opportunities include:</p> <ul style="list-style-type: none"> <li>• Dispersed, rural nature of the settlements,</li> <li>• Communities struggling with employment,</li> <li>• Opportunity due to current trend of urbanization,</li> <li>• Opportunity on focusing on reduction and awareness initiatives,</li> <li>• Municipality promoting tourism – will need associated removal services in key areas,</li> <li>• Tight budgetary constraints internally, and</li> <li>• Shortage of human and skill resources within the department and municipality as a whole.</li> </ul>



## 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	Currently around 60% of the residential MLM customers have access to waste removal services. Those in formal urban areas have a higher level of service (kerbside collection) than those in informal or rural areas, who are serviced through communal collection points. Similarly, for businesses and public facilities but currently all registered non-residentials are serviced. Large industrial companies in the area make use of private service providers.
2	Historic trends and ongoing initiatives	At the point of the 2011 census the municipal backlog in terms of refuse collection was at almost 70% not serviced (or claiming own method of disposal). With the provision of communal skips across the municipality in strategic locations to maximise service access this number is now at approximately only 40% not serviced.
3	Strategic directives	The key focus of Mandeni local municipality is to eradicate the access backlog to refuse collection, moving forward the focus shifts toward sustainability of the service and maintaining the department assets.
4	LOS / SOS criteria	The practice of providing a higher level of service in urban areas was an adoption of existing practice – adding services into the more rural and informal areas was targeted at a lower LOS (LOS 1) to try to provide the service to a maximum number of people while keeping within budget limitations.
5	Targets	<p>The current municipal target for solid waste collection is the provision of communal collection (LOS 1), this is due to a significant challenge of budget and the practicality of collection in the areas where the backlog exists. It is also the national acceptable LOS. Where feasible new development and backlogs in urban areas will be targeted at a LOS 2 (kerbside collection).</p> <p>The solid waste disposal service is at a LOS 1, as only non-hazardous waste is disposed, and LOS 1 is applicable for cleansing in urban areas with a LOS 0 for cleansing in rural areas. The main municipal targets are highlighted in <b>Table 2.1</b>.</p>

Table 2.1: Level of service target for the MLM

SOLID WASTE DISPOSAL *			
Level of service	Solid waste collection	Solid waste disposal	Cleansing public areas
LOS 0	None	None	None
LOS 1	Communal waste collection point *	Disposal of non-hazardous waste at landfill site *	Cleaning public areas and refuse bins *
LOS 2	Weekly kerbside waste removal *	Disposal of hazardous waste at landfill site*	
LOS 3	Weekly waste removal from site *		

\* With appropriate conveyance, disposal and landfill facilities provided.

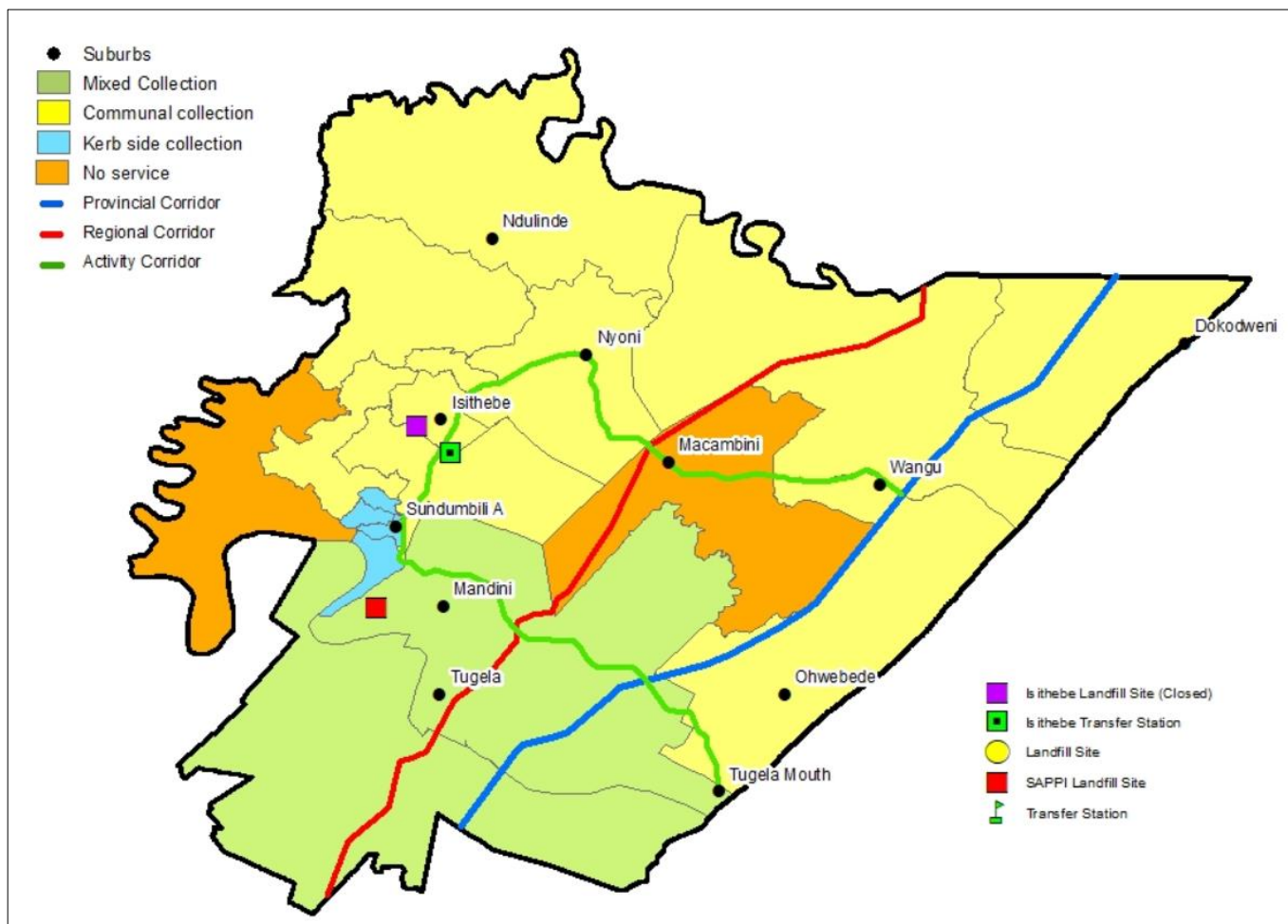
6	Service delivery backlogs	<p>Currently Mandeni local municipality provides refuse collection to 61% of its customers, with the remaining 39% having no access or making use of their own waste disposal – which is often not environmentally responsible.</p> <p><b>Table 2.2</b> shows the level of service distribution for the various customer types. Approximately 12 724 households are provided with kerbside collection of refuse, in the formal urban areas the service includes street cleaning. The municipal target is that of communal refuse collection (LOS 1), although this target is higher for urban areas, providing service to those who have a LOS 0 is prioritised. <b>Table 2.2</b> highlights the number of households with an access backlog.</p> <p>The municipality provides a weekly collection, and this is also measured as a performance target (a standard of service) currently they are not maintaining the target of weekly collection due to a lack of human resources.</p> <p><b>Figure 2.1</b> shows, at a ward level, what types of service provision are being provided. The service provision has increased since 2015 by 30% additional households. Approximately 17 000 households in rural areas still have no access and can be considered an access backlog with an additional 300 odd customers needing to be moved to a higher service level in the urban areas.</p>
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Table 2.2: Types of customers distributed into current LOS

	Total HH per customer type	Level 0	Level 1	Level 2	Level 3
Type customer		No of households	No of households	No of households	No of households
Urban	9 508	-	321	9 187	
Tribal/Traditional	35 369	17 043	14 790	3 537	
Farm	1 056	739	317		
<b>Totals</b>	<b>45 934</b>	<b>17 782</b>	<b>15 428</b>	<b>12 724</b>	<b>-</b>
<b>%</b>		<b>39%</b>	<b>34%</b>	<b>28%</b>	
Non-residential*	691		173		518

\*For completeness- currently no backlog

Figure 2.1: Type of collection (level of service) distribution per ward



7	Lifecycle cost implications	<p>Providing refuse collection for all the households in the municipality has large cost implications, not just the R 11 million capital that would be required but also the addition of R 1.7 million operational cost per annum - as shown in <b>Table 2.3</b>. This estimate is conservative, as realistically, based on the spatial locality of households in more widespread areas skips will probably not be able to be placed in such a way as to serve as many as 200 households while still being within the required distance.</p> <p>As the current planned capital expenditure is zero –eradicating the backlog in ten years appears to be unfeasible. Specific areas for providing service as well as education around waste management should be investigated as an alternative strategy if funding is not available. Development nodes, as identified in the SDF, should be priority areas to address the backlog. Such nodes include Tugela Mouth; Dokodweni; Macambini; Nyoni and Ndulinde.</p> <p>If waste transfer stations were strategically placed and the District landfill site planned to provide adequate cover, a higher service could possibly be charged and implemented in an optimized way (though with the associated payment risks). Either way there are cost implications associated with the creation / purchase of such assets as well as the renewal and maintenance thereafter.</p>
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Table 2.3: Cost implication of addressing the backlog

Cost of upgrading to target level (R '000)				
	Resolving no service backlog capital	Resolving no service backlog ops (R '000 pa)	Resolving urban LOS backlog capital	Resolving urban LOS backlog ops (R '000 pa)
Urban			104	30
Tribal/Traditional	11 108	1 566		
Farm	482	68		
<b>Total:</b>	<b>11 590</b>	<b>1 634</b>	<b>104</b>	<b>30</b>
Total capital backlog eradication:	<b>11 694</b>	Spending per year required:	<b>1 169</b>	
Total operational backlog eradication pa:	<b>1 663</b>			

8	LOS / SOS backlog reduction tactics	<p>The current approach to backlog reduction is to focus on the provision of communal skips at specific locations to service the maximum number of households (up to 200). This approach is due to low affordability, the distributed nature of the customers as well as the target to bring a basic level of service to all.</p> <p>There is currently a specific focus on the capital cost of these items without a sufficient long-term strategy around the operational and maintenance of the assets.</p>
9	Chapter confidence	<p>The majority of population and service provision data is based on the last census; thus the certainty is reduced slightly. There is a need to spatially quantify the customer base not just for accurate modelling but accurate billing purposes as well.</p> <p>Some of the key assumptions made in the modeling are detailed below:</p> <ul style="list-style-type: none"> <li>• The number of non-residential customers was informed through the valuation roll,</li> <li>• the proportion of households previously on the customer roll has increased by 2% pa for new formal housing growth,</li> <li>• assumed 10% of tribal service is kerbside collection,</li> <li>• assumed 75% of non-res is kerbside collection,</li> <li>• average km driven by collection truck – as well as service associated costs for cost elements,</li> <li>• average skip cost assumed based on register rates, and</li> <li>• 20% additional cost for providing skips in remote areas.</li> </ul>
10	Chapter summary	<p>Currently approximately 39% of customers do not receive any level of service in MLM. This is a large backlog (17 782 households with no access at a cost of R 11.6 million to address – plus additional upgrade of service needed in the urban areas) to be addressed through the provision of communal skips. However, there is not only a large capital cost associated with this service provision but an additional operational cost per year of providing this service (at an increased rate in rural areas). Completely eradicating the backlog is unfeasible; instead specific areas of provision have been highlighted and a move towards these areas needs to be promoted.</p>

### 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>Population in the municipality grew from 138 078 to 147 808 between the census 2011 and the community survey in 2016. This was a smaller increase than that of the previous census and has been used to forecast the population going forward. Notably Mandeni still had a positive population growth unlike Ndwedwe and Maphumulo (two other local municipalities in the district), but smaller than the growth of KwaDukuza.</p> <p>The positive growth is linked to some urban opportunities in the municipality as the current trend is a population shift towards economic opportunities.</p>
2	Demand drivers	<p>It is anticipated that the population growth rate will not increase but stay at around 0.28%. Despite a focus on tourism and increased industrial potential for the area which may have a positive impact on growth there is also an anticipated negative impact from people moving to larger urban centers in search of job opportunities, thus the net is assumed to remain constant at a slow growth factor per annum.</p>
3	Growth strategy	<p>Due to the current dispersed nature of the customer base and the negative impact on the ability to provide basic services, there is a focus on developing specific identified nodes in the area. There are urban nodes and tourism nodes that will have a growth focus. The SDF identified development areas are highlighted in <b>Figure 1.1</b>.</p> <p>A focus on more dense development in specific nodes benefits the provision of refuse removal as it makes implementing a higher (kerb side) level of service to customers more feasible.</p>
4	Sector demand forecast	<p>Currently the customer demand is forecast to increase at a slow but steady rate per year. If not met this will accentuate an already large access backlog and service provision challenge. Notably though the growth trend is a movement to developed areas or along transport routes – such a pattern of more dense and localized development should be encouraged as it makes service provision more feasible.</p> <p>As areas become denser and urbanized, there will be a greater demand on the service (dense living areas make it more challenging for individuals to dispose of their own waste). The current department budget is such that the backlog won't be able to be addressed – thus provision for growth will fall far behind. Over the 10-year planning period the number of households in the municipality is expected to increase by 1 302, as shown in <b>Table 3.1</b>. The total number of households forecast per year are shown in <b>Table 3.2</b>.</p> <p>Waste reduction and waste recycling awareness and education campaigns are envisaged to be increased to try influence the waste generated per person in the municipality. Without a waste officer to drive and implement such initiatives, however, they will not gain momentum.</p>

Table 3.1: Mandeni population growth forecast

Current Population (2018)	Growth Rate (p/a)	Population at end of Planning period (2028)	Population Increase	Household Increase
148 637	0.28%	152 852	4 215	1302

Table 3.2: Mandeni population and household forecast per year

	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Population	149 053	149 470	149 889	150 309	150 729	151 152	151 575	151 999	152 425	152 852
Household	46 063	46 192	46 321	46 451	46 581	46 711	46 842	46 973	47 105	47 237

5	Infrastructure impact	<p>An increased customer base is going to continue to put pressure on an already strained solid waste department. A sustainable alternative landfill site is needed in the long term that is located at a closer distance than that in KCDM.</p> <p>In the short term the agreement with KCDM over rates charged for disposal should be reviewed – charges should be related to the amount of waste being brought in to the landfill and not a set rate per month. This will also provide the MLM department with waste generation figures to accurately estimate and plan for required air space of customers.</p> <p>The KCDM landfill site has only 2-5 years remaining airspace and, although they are planning on opening a new cell, the preliminary design only started in 2018. In the long term if IDM does not develop a regional landfill then MLM may need to consider a local landfill site. A project to investigate potential sites will only be budgeted for if the district plan gets discarded.</p>
6	Demand management tactics	<p>There is a need to focus on awareness projects within the communities in MLM, such projects are still implementable on a constrained budget – even if other approaches are not. MLM has started implementing some recycling programmes – such as waste separation at source at the Mandeni offices.</p> <p>Part of the solid waste department initiative was to hire through the EPWP for cleanup and waste collection, although, some of this budget had since been reduced. As part of a wider campaign EPWP workers could be involved in the awareness as well as paid to clean and collect refuse. Small scale recycling could also be incentivized and EPWP workers sourced in remote areas to pick up refuse while talking to communities about the importance of environmentally sound waste management.</p>
7	Chapter confidence	<p>The growth forecast is based on a number of assumptions on future economic, social and behavioral trends. Despite this it still gives an overview of the direction the growth is headed in and what factors need to be considered when planning for such growth. As such the alternative demand management approaches and impacts should be considered.</p>
8	Chapter summary	<p>Growth is never predictable but sound assumptions have been used to assume that the growth will remain at a low percentage increase per year going forward (a total of 1 302 additional households predicted over the 10-year period). Important is the municipality's spatial vision of priority nodes and promoting the growth within those areas to ease the demand on service delivery. Realistically the full growth need per year will not be met within the budget – but if services are promoted in specific areas it will encourage growth in those areas in line with the municipal spatial vision.</p>

		<p>Key notes:</p> <ul style="list-style-type: none"><li>• There is an opportunity to promote proper waste management awareness and community projects even on a constrained budget.</li><li>• Opportunity to involve the EPWP programme.</li><li>• There is a risk of the landfill charge being a flat rate and not per weight of waste disposed.</li><li>• The distance to the landfill means that larger amounts of vehicles will be needed to address the growth in demand.</li><li>• A possible opportunity if the District goes through with their plan to build a district landfill.</li></ul>
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## 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	<p>Currently the overall portfolio health status according to available data is ‘good’ and indicates that the majority of the of the assets have not yet significantly depreciated. It should be noted that the portfolio is made up of short life assets (average EUL is 9.8 years) and thus this portfolio health can change quickly as the assets continually deteriorate each year. In the absence of capital renewal the portfolio health grade will move steadily towards a state of ‘very poor’. This concept is represented in <b>Figure 4.1</b>. The figure also shows how the addition of new assets will improve the health status, but only briefly as these assets will then start the deterioration cycle and only through capital renewal (or replacement) can the portfolio health status be maintained.</p> <p><b>Table 4.1</b> highlights key operational and delivery risks, critical infrastructure and opportunities in the lifecycle of the solid waste portfolio.</p>
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Figure 4.1: Current portfolio health status

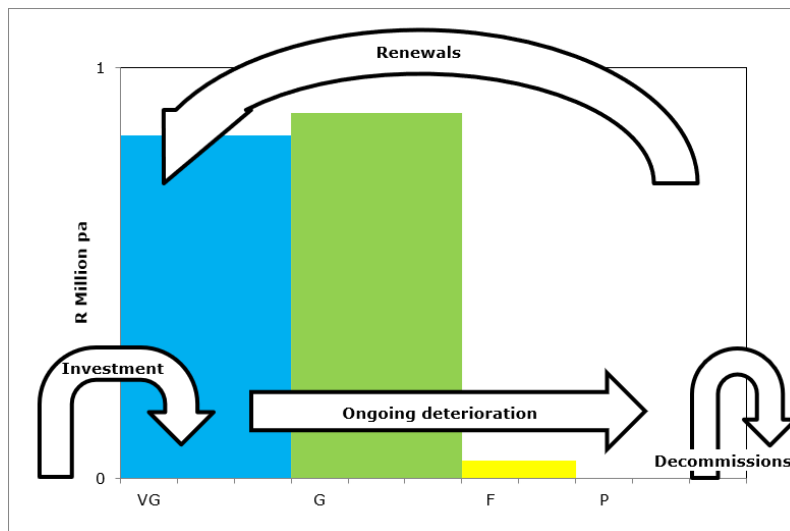


Table 4.1: Summary of solid waste portfolio life cycle risk and opportunity

Asset Group	Operational / delivery risks	Critical infrastructure	Opportunities
Wheelie bins	Current low health of assets - needs investment	Low criticality	
Refuse skips		Moderate criticality for specific skips that service facilities	With proper maintenance life of asses can be sweated
Vehicles	Risk of reduced EUL due to distance to landfill	Critical as no service can be provided if vehicles are not functioning	With introduction of transfer facilities required vehicles, maintenance could be reduced and EULs increased.



2	Capital programmes	<p>In the previous financial year, the solid waste budget that was initially allocated to the solid waste department was then reallocated to other departments after the budget adjustment. However, the target for the department performance is to provide service to 4 000 additional households which requires investment of approximately R 182 575 per year minimum (not accounting for additional vehicles that would be required). The current growth projection is just under a third of that.</p> <p>Due to such a restrained budget there are currently no ongoing capital programmes. The department has identified the need for a garden refuse and composting station as well as a feasible landfill site that is less than the current 70km away. Strategically located facilities would reduce operating costs and potentially provide more opportunity to provide a higher level of service to communities outside the urban area - but would require a high capital input initially.</p> <p>The district municipality has started identifying feasible sites for a district landfill site, however, this project has no set timelines yet. The site would be beneficial to MLM solid waste service provision and would alleviate the required capital of planning for and running a local site. Currently no budget has been provided for facilities in the lifecycle plan as MLM awaits set timelines for the district facility.</p>
	2.1 Growth capital requirements	<p>The capital requirement aspect of the service provision is higher for a communal collection point than for kerbside collection – this is due to the cost of skip provision (<b>Table 4.2</b>). Although, the associated increase in operational cost is far higher for kerbside and site removal services. The operational costs, <b>Table 4.3</b>, include provision for fuel and labor associated with collection service as well as licensing for vehicles.</p> <p><b>Table 4.4</b> shows the costs forecast per year to provide services to meet the growth in population. Predominantly this growth is urban residential and amounts to R 675 000 over the planning period, the urban figure includes a provision towards non-residential. The non-residential growth is considered less than the residential over the period and a portion is assumed to be privately provided for. On average the spending to meet the increased demand from growth is around R 67 000 per year. Growth will be encouraged in a structured way to enforce densification; providing for the total estimate in population growth is not feasible due to the other capital demands on the sector such as access backlog eradication.</p> <p>The large difference in the expected needs for growth provision and the current access backlog are highlighted in <b>Figure 4.2</b>. This further emphasises the need for an alternative approach to service provision, as providing every household across the municipality with a communal service collection is a resource exhaustive task. With provision of skips or bins for new customers the service capacity will be constrained by operational aspects such as human and vehicle resources. The required capital planned to address the growth and access backlog makes provision for fleet and as the customer base increases, additional vehicles will need to be procured.</p>

Table 4.2: Capital cost (R) for service provision per household (not including facility infrastructure provision)

	Skip capital	Capital per household	Kerbside capital	Capital per household
Skips	9 129	456		
Vehicles		87		409
	<b>Total:</b>	<b>543</b>		<b>409</b>

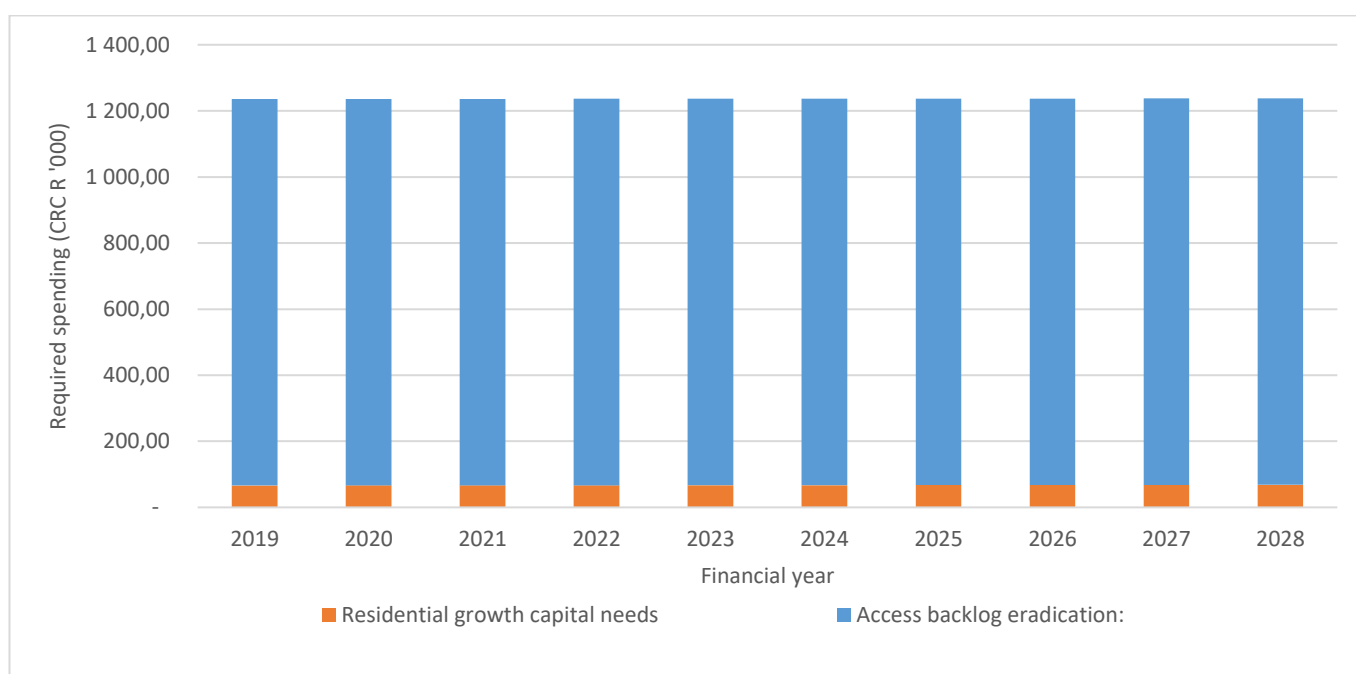
Table 4.3: Operational cost associated with provision of service (per annum cost)

LOS provision		2018 operational cost per household (R)
1	Communal waste collection point	92
2	Weekly kerbside waste removal	194
3	Weekly waste removal from site	1 494

Table 4.4: Capital needs to provide target LOS to additional customers from growth (R '000)

Customer type:	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	Total R
Urban	11	11	11	11	11	11	11	11	12	12	114
Tribal/Traditional	54	54	54	54	54	55	55	55	55	55	545
Farm	2	2	2	2	2	2	2	2	2	2	16
<b>Total:</b>	<b>67</b>	<b>67</b>	<b>67</b>	<b>67</b>	<b>67</b>	<b>68</b>	<b>68</b>	<b>68</b>	<b>68</b>	<b>68</b>	<b>675</b>

Figure 4.2: Required capital expenditure for access backlog and growth



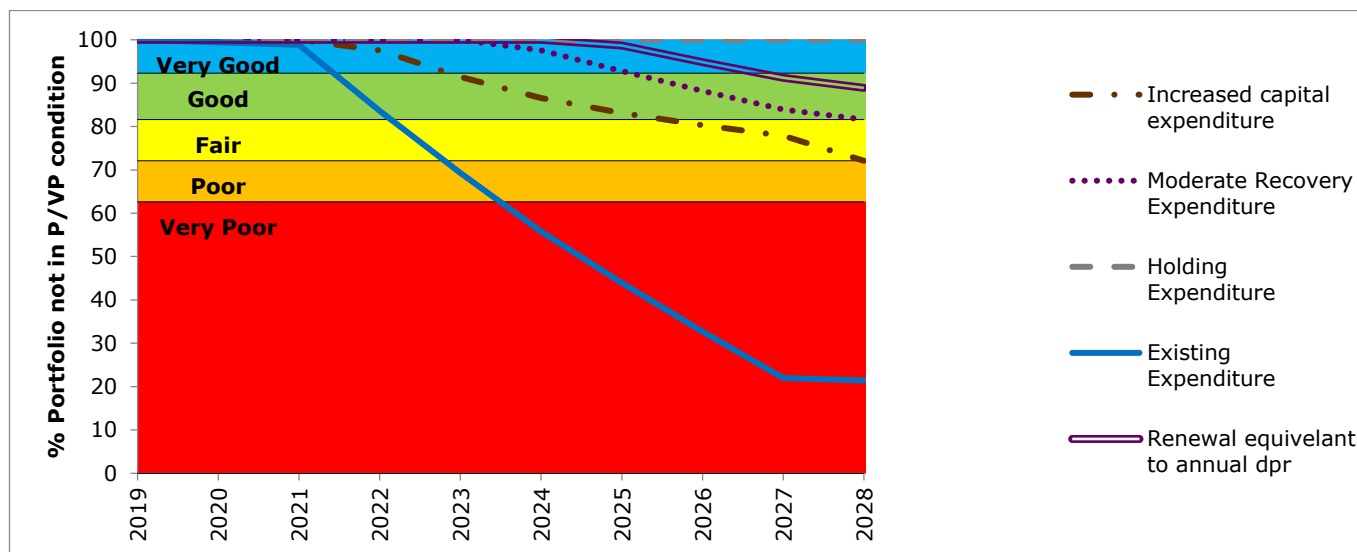
2.2 Renewal capital requirements	<p>While discussing the current state of the portfolio it was noted that the street bins on the register have a 'very poor' health grade. This indicates they have used up the majority of their expected life – and the assets need capital input in the form of replacement or renewal. This is also influenced by having a residual value and an expected life span of less than 10 years. The replacement of these existing bins is a technical backlog and is R192 096, 3.7% of the portfolio asset value. It was noted that more than half are currently in a bad condition and the low health grade indicates the remaining bins will deteriorate quickly.</p>
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		<p>Currently all the assets in the solid waste portfolio are short-life assets, and currently no landfill sites or transfer stations are in use. The renewals value total over ten years will be approximately the current replacement value, and would budget for the replacement of existing skips, vehicles and bin assets. However, new investment in the portfolio and the technical backlog needs to be accounted for. Thus, different renewal scenarios were projected to illustrate the effect of different levels of renewal spending per year. The renewal spending is given as an average indicator per year, in reality the spending would probably be grouped in a specific year where renewal projects are planned, e.g. the replacement of two vehicles (may be a combination of a number of years' renewal forecast).</p> <p><b>Table 4.5</b> shows what spending is considered in the different scenarios for new capital investment (in current value) and capital renewal. <b>Figure 4.3</b> then illustrates the state of the portfolio after 10 years with these yearly investment scenarios. The following points are noted:</p> <ul style="list-style-type: none"> <li>• If the department continues to spend nothing on capital renewal the portfolio will be in a 'very poor' overall condition by 2024. The department will need to replace some of its existing assets as they become dilapidated.</li> <li>• Trying to keep the existing 'very good' health status will require too much capital (R 871 000pa).</li> <li>• Spending of R 250 000 will result in a portfolio of only 'fair' at the end of the period – even if there is a higher investment in new assets.</li> <li>• A minimum of R 500 000 capital renewal is required yearly to maintain the current portfolio at a level of between 'fair' and 'good' without any new investment. This minimum requirement increases with the amount of new investment put into the portfolio.</li> <li>• The current modelled new asset spending is based on the current target of providing service to 4 000 households per year – it is far less than the spending required to eradicate the backlog.</li> <li>• Thus if more is spent per year to eradicate the backlog than more renewals are also required per year.</li> <li>• The moderate recovery expenditure scenario is recommended with approximately R 511 000 per year – noting that for every million new investment on short life assets approximately R 100 000 additional renewal would be required (modelled to increase renewal at a 2 year off-set to investment).</li> </ul>
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Table 4.5: Different capital renewal investment scenarios (CRC value)

Scenario Type	Constant Expenditure Scenarios R per annum					
	Existing Expenditure	Holding Expenditure	Moderate Expenditure	Recovery	Increased capital expenditure	Renewal equivalent to annual depreciation
New/Upgrading	182 575	200 000		200 000	1 170 000	182 575
Renewal	0	671 568		511 199	245 191	574 890
Decommissioned	9 129	9 129		9 129	9 129	9 129
<b>Total Portfolio Spending</b>	<b>182 575</b>	<b>871 568</b>		<b>711 199</b>	<b>1 415 191</b>	<b>757 465</b>

Figure 4.3: Portfolio health as a result of different renewal investment scenarios



3	Maintenance management	<p>Currently the maintenance in the department is split between the skip maintenance carried out in-house and the vehicle maintenance done by the technical department. The municipality currently has no operations and maintenance plan and has requested the technical department to assist with creating one.</p> <p>MLM currently has no budget for maintenance on the MTREF – this indicates that some of the internal maintenance needs to be better defined and reported on to motivate for specific maintenance budget going forward.</p> <p>The required annual maintenance is taken as a proportion of the current replacement cost of the portfolio. As such the requirement increased in relation to the investment in new assets (as new assets are created to accommodate service provision, the corresponding maintenance need per year also increases). The projected maintenance, <b>Table 4.6</b>, increases from R 291 930 per year in 2019 to R 848 520 in 2028 – showing the large financial implications of providing all customers with service beyond the direct capital cost. Notably the vehicle maintenance expense is associated with the technical department and so will not be part of the solid waste budget.</p> <p>If less spending goes into new assets then the required maintenance will also be less.</p>
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Table 4.6: Required annual maintenance expenditure if projected capital investment occurs (R ' 000)

	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Maintenance Cost vehicles*	247	284	321	358	396	433	470	507	544	581
Maintenance internal	45	70	94	119	144	169	193	218	243	267
Maintenance total	292	354	416	477	539	601	663	725	787	849

\*Vehicles maintained by technical services department- not under solid waste department budget

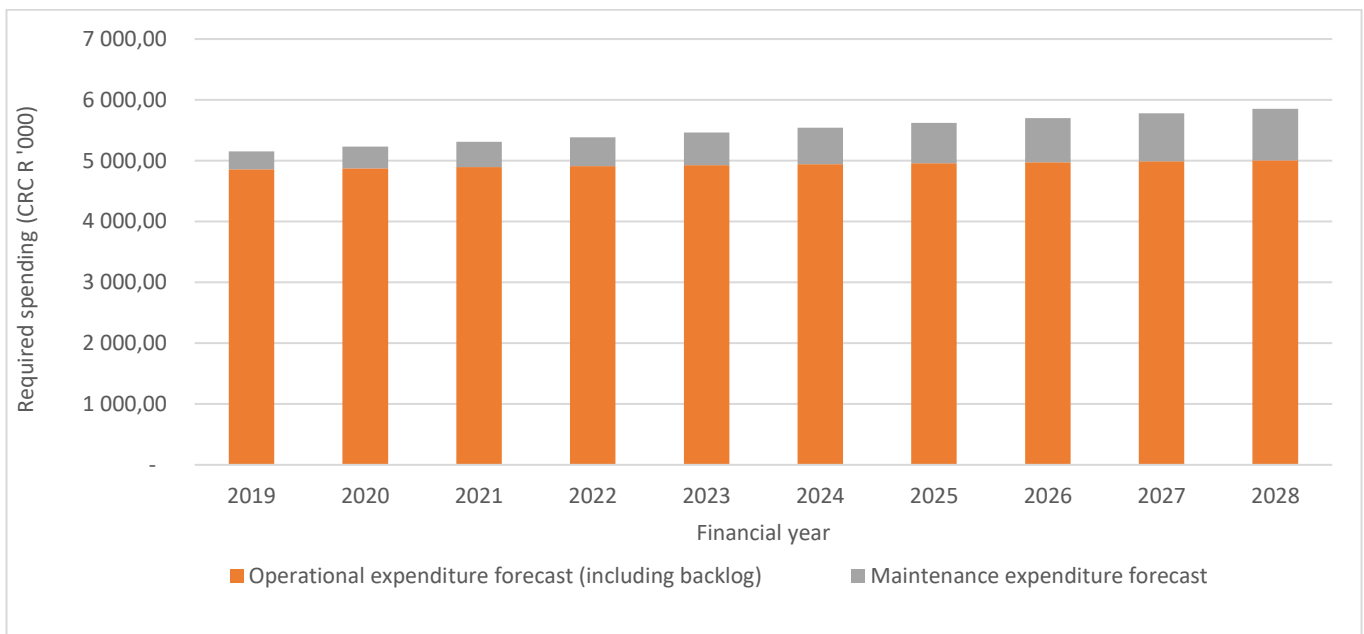
4	Operations management	<p>Providing services to those with an access backlog comes with an associated operational expense in addition to the capital expense and it will be an ongoing expenditure need. <b>Table 4.7</b> shows the expected operational needs per year. The operational needs increase</p>
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		<p>with a reduction in backlog, due to the associated costs of providing the service to additional customers, from R 4.9 million in 2019 to R 5.0 million in 2028. The table shows the increasing operational cost due to growth and an associated total operational cost per year if the backlog was eradicated evenly over the period.</p> <p>A higher service level has a higher associated operational cost. The cost is also higher due to the distance required to travel to the landfill site. Which is a cost that can be reduced with municipal transfer and landfill sites.</p> <p><b>Figure 4.4</b> shows the combined OPEX expenditure needs for the planning period. The figure shows that the maintenance needs increase significantly during the planning period but that the operational cost only increases by 3% - however the maintenance remains only a small portion of the operational cost.</p>
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Table 4.7: Operational spending required per year to service new customers from access backlog and growth (R '000)

Customer type:	2019	2020	2021	2025	2028	Total R
Urban	2 610	2 617	2 624	2 650	2 670	26 402
Tribal/Traditional	2 055	2 064	2 073	2 110	2 138	20 961
Farm	29	30	30	31	32	306
<b>Total:</b>	<b>4 694</b>	<b>4 710</b>	<b>4 726</b>	<b>4 791</b>	<b>4 840</b>	<b>47 669</b>
Total with operational for backlog eradication:	4 861	4 877	4 893	4 957	5 006	49 332

Figure 4.4: Required OPEX (operation and maintenance) spending per year



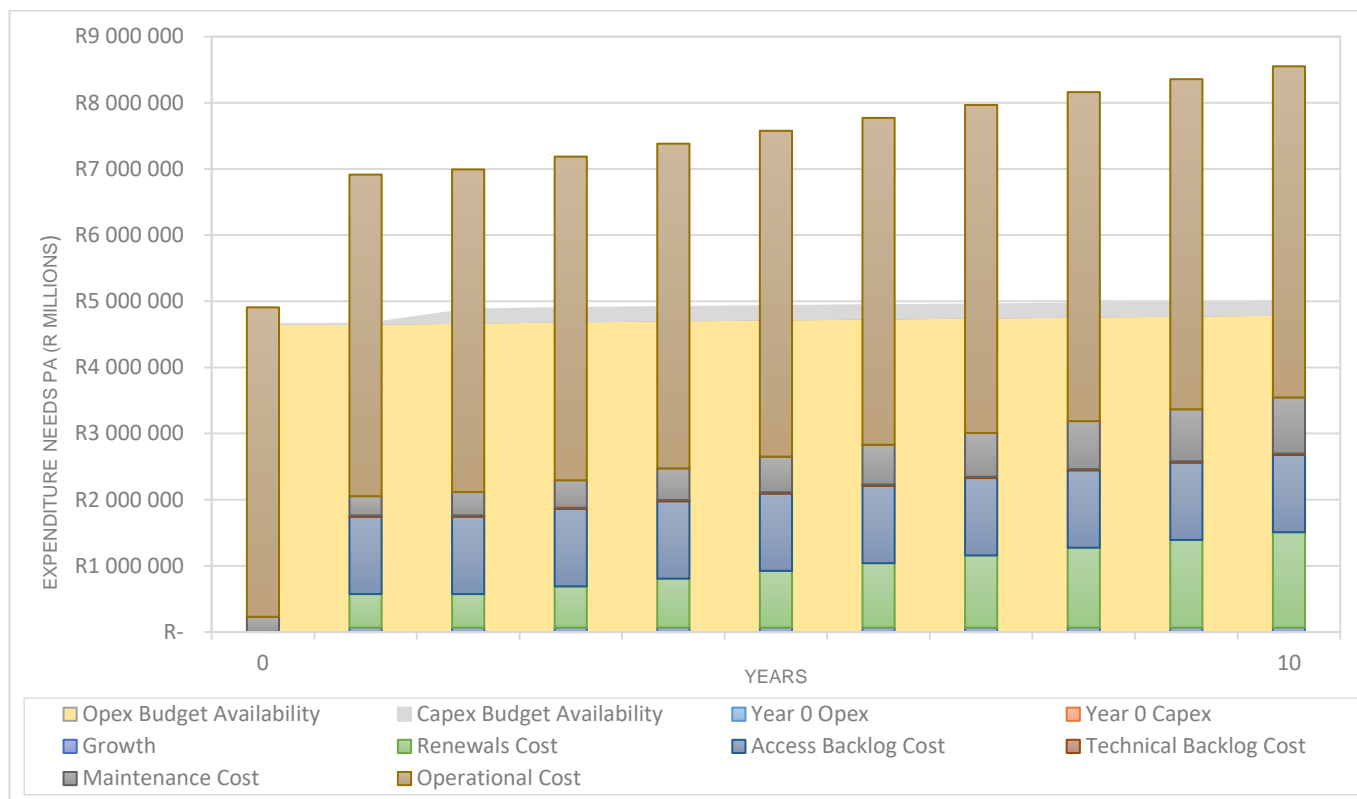
5	Delivery packaging and scheduling	A Strategic approach to packaging and scheduling of capital and operational activities, needs to be developed and implemented. A summary of the suggested spending in an mSCOA format is shown in <b>Annexure A</b> .
6	6.1 Life-cycle plan	The total lifecycle plan for the solid waste department is made up of all the individual aspects discussed earlier in the chapter. <b>Figure 4.5</b> and <b>Table 4.8</b> show the combined department NEEDS for the planning period – a projection based on what the directives are

	<p>but without constraint. All figures in the lifecycle needs forecast are depicted in present day value. In reality there are budget constraints – the funding for the department is very limited. A challenge increased due to the provision of communal collection having no associated increase in collection fees.</p> <p>The table depicts the capital needed to provide services to all new customers from both population growth and eradicating the access backlog. The growth is addressed per year as anticipated and the backlog is planned to be eradicated evenly over the ten-year period. The technical backlog allows provision for assets currently in a ‘very poor’ condition (bins), while the renewal cost is a provision for capital renewal of existing assets (vehicles, skips and bins) as their condition declines. The assets currently in worse condition and more critical need to be prioritised for renewal and technical backlog spending, and as a result other asset not currently in such a poor state may decline to such a point and become the priority and technical backlog in a future year.</p> <p><b>Figure 4.5</b> illustrates the funding gap with the available operational budget being fairly high (shown as shadows behind the bar graph) but currently no capital budget forecast for the department – so the assumed budget is the minimum capital previously spent to meet the target access (4 000 households) shown after 2020 (as nothing is budgeted in the MTREF period).</p> <p>The life cycle plan has been adjusted (in the next subsection) so the department spending is reduced to account for the limited budget – but allows for the department to prioritize spending and motivate for more budget going forward.</p>
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Table 4.8: Combined lifecycle needs for the solid waste department for the planning period

Mandeni budget need (R '000)	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Growth	67	67	67	67	67	68	68	68	68	68
Renewals Cost	506	506	623	740	857	974	1 091	1 208	1 325	1 442
Access Backlog Cost	1 169	1 169	1 169	1 169	1 169	1 169	1 169	1 169	1 169	1 169
Technical Backlog Cost	19	19	19	19	19	19	19	19	19	19
Maintenance Cost	292	354	416	477	539	601	663	725	787	849
Operational Cost	4 861	4 877	4 893	4 909	4 925	4 941	4 957	4 974	4 990	5 006
<b>Total:</b>	<b>6 914</b>	<b>6 992</b>	<b>7 187</b>	<b>7 382</b>	<b>7 577</b>	<b>7 772</b>	<b>7 968</b>	<b>8 163</b>	<b>8 358</b>	<b>8 554</b>

Figure 4.5: Combined lifecycle needs for the portfolio



<p>6.2 Life-cycle plan - adjusted</p>	<p>Due to the realities of a restricted budget the spending needs to be prioritised in the department. The assessed lifecycle need from section 6.1 above was adjusted in line with the envisioned available budget.</p> <p>The following adjustments were made to the lifecycle needs:</p> <ul style="list-style-type: none"> <li>• R 0 capital expenditure on access backlog and growth in 2019-2021 as currently there is no capital expenditure planned in the MTREF.</li> <li>• Only the backlog for customers with no access is prioritised and spending per year is reduced to 3% from 10% - so spending is R 347 700 pa over the period, addressing 533 households per year.</li> <li>• Associated maintenance will reduce due to a lower increase in assets in the portfolio, also there is currently no maintenance budget on the MTREF – although this should be reviewed for 2021.</li> <li>• Operational costs will be less due to reduced spending on new customers (as only a portion of the growth and access backlog need will be provided for).</li> <li>• Only growth in urban areas will be met – aiding in promoting the move towards a denser municipal structure.</li> <li>• Renewal spending is reduced from the needs, but the annual spending should be at a minimum of R 506 000 per year. This was adjusted lower in the first three years as currently there is no scheduled spending however, the MTREF should be reviewed for some renewal allocation as it is a priority. This renewal is a provision for capital renewal of the existing assets in the portfolio (vehicles, skips and bins).</li> </ul> <p>It is noted that even though the lifecycle plan has been adjusted there are still critical areas in need of funding such as renewal of existing infrastructure (replacement of vehicles, skips and bins). Potential ways of increasing revenue or funding need to be investigated to enable the department to get the funding that is required. <b>Table 4.9</b> and <b>Figure 4.6</b></p>
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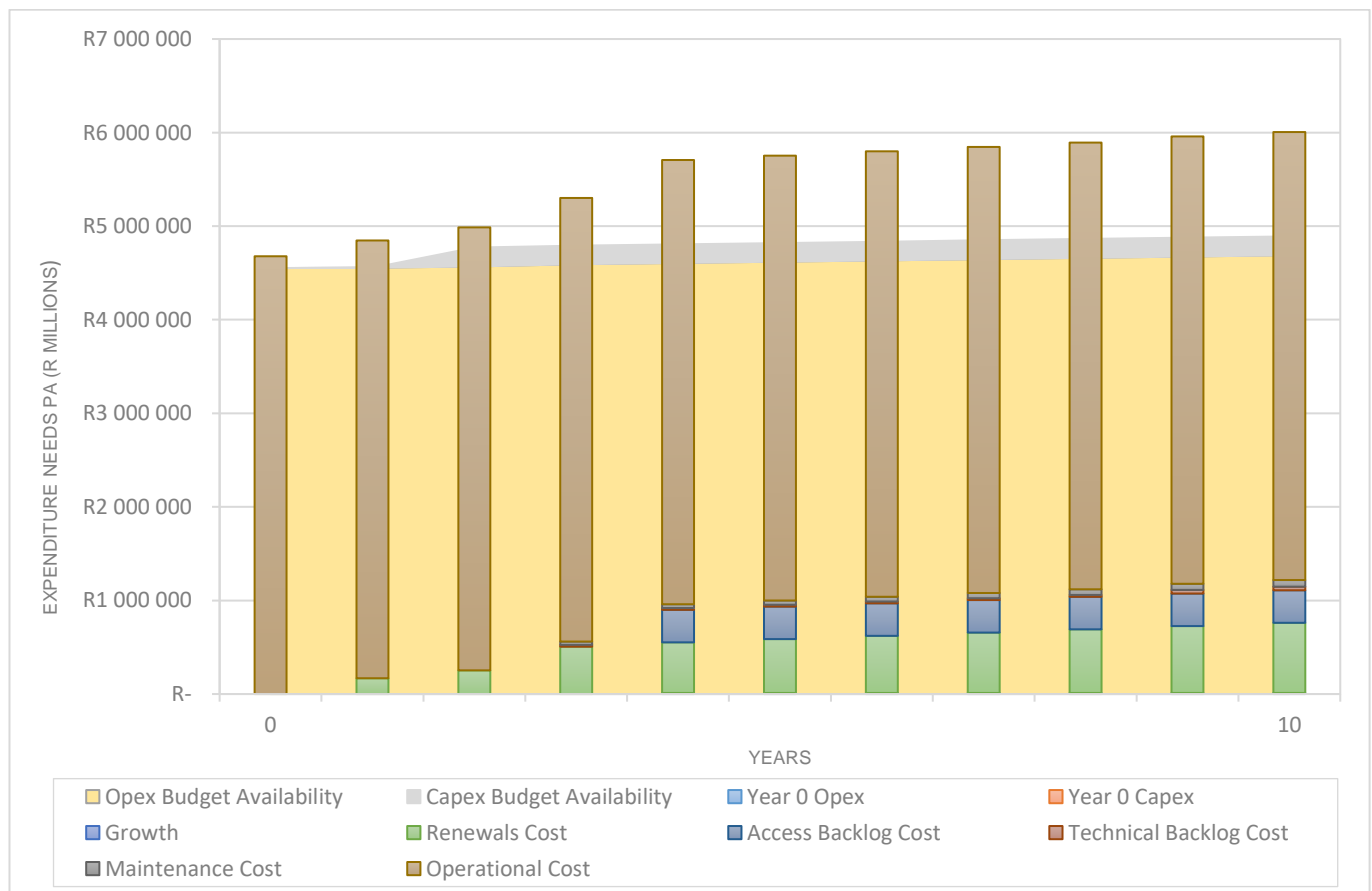
	summarize the proposed adjusted lifecycle plan for the department, all the forecast values per year are shown in current values.
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Table 4.9: Combined lifecycle adjusted spending for the solid waste department for the planning period

Mandeni budget adjusted (R '000)	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Growth	-	-	-	11	11	11	11	11	12	12
Renewals Cost	169	253	506	541	576	611	645	680	715	750
Access Backlog Cost	-	-	-	348	348	348	348	348	348	348
Technical Backlog Cost (replacing existing bins in 'very poor' condition)			19	19	19	19	19	19	38	38
Maintenance Cost*			35	40	46	51	56	61	66	71
Operational Cost	4 678	4 734	4 741	4 747	4 754	4 761	4 767	4 774	4 781	4 788
<b>Total:</b>	<b>4 847</b>	<b>4 987</b>	<b>5 301</b>	<b>5 707</b>	<b>5 754</b>	<b>5 800</b>	<b>5 847</b>	<b>5 893</b>	<b>5 959</b>	<b>6 006</b>

\*excluding vehicle maintenance done by technical services

Figure 4.6: Combined lifecycle adjusted spending for the portfolio





7	Chapter confidence	<p>The confidence for the chapter varies for different aspects of the life cycle. Overall the confidence in the chapter is at 75% with some areas of estimation. Key estimates include:</p> <ul style="list-style-type: none"> <li>• The maintenance for non-vehicle assets was assumed to be at 2% of the portfolio value.</li> <li>• The operational cost was calculated based on averaged rates for fuel, labour, maintenance and other factors related to collection routes.</li> <li>• The renewals (including replacement of vehicles, skips and bins) are suggested based on current value and status of assets – but a full investigation could be done to refine this figure.</li> <li>• The non-residential growth was assumed to be less than the residential and a proportion assumed to be serviced by the private sector.</li> </ul>
8	Chapter summary	<p>The overall portfolio health status is 'good'; though it can change quickly as the assets continually deteriorate each year and are short life assets. Wheelie bins have a 'very poor' health status and need investment – known as a technical backlog (R192 096). Transfer facilities will allow less travel time and maintenance on vehicles – so more service can be provided, but bulk capacity considerations are not planned for in this iteration of the AMP until IDM clarifies its timelines for a district landfill site. The department has a constrained budget; if budget wasn't an issue the required lifecycle needs could be addressed in full:</p> <ul style="list-style-type: none"> <li>• Backlog: currently an estimated 17 782 households have no service and 321 households in the urban areas need upgrading from communal collection to kerbside. This is a capital cost to upgrade of R 11.6 million and R0.1 million respectively.</li> <li>• The majority of projected growth is residential and the capital investment need amounts to R 675 000 over the planning period. On average this is around R 67 000 per year.</li> <li>• A minimum of R 500 000 capital renewal is required yearly to maintain the current portfolio at a level of between fair and good without any new investment, this minimum will increase with new investment into the portfolio.</li> <li>• The projected maintenance increases from R 291 930 per year in 2019 to R 848 520 in 2028 (267 460 for non-vehicle assets), this is directly in line with new asset growth.</li> <li>• The operational needs increase with a reduction in backlog due to the associated costs of providing the service to additional customers from R 4.86 million in 2019 to R 5.01 million in 2028.</li> </ul> <p>Unfortunately budget is an issue so the following adjusted lifecycle spending is suggested:</p> <ul style="list-style-type: none"> <li>• Only spending on renewal and operational budget is proposed for the first two years, the suggested renewal spending will require adjustment of the current MTREF.</li> <li>• The growth addressed per year (from 2022) should focus on urban areas.</li> <li>• Backlog eradication is reduced with a focus on strategy toward urbanization, only 21% addressed over the period but spending is more in line with the current budget.</li> <li>• Renewal spending requires a minimum of R506 000 per year to maintain the portfolio.</li> <li>• Operational spending increases from R 4.68 million in 2019 to R 4.79 million in 2028 (in real terms).</li> </ul>

		<ul style="list-style-type: none"><li>• Over the period, the adjusted approach reduces the spending in the department from the assessed needs by R 20 million.</li></ul> <p>Spending is a challenge in the department and the priority highlighted is the renewal input and maintaining the operational budget – while only spending on backlog in specific areas. Thus, still increasing services but in such a way as to promote growth in line with the municipal vision.</p>
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## 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>MLM managed to meet 79% of its financial targets in terms of KPIs.</p> <p>Some objectives, directives and targets include:</p> <ul style="list-style-type: none"> <li>• The investment policy aims at gaining optimal return without incurring undue risks. It also notes that all reasonable steps should be taken to ensure monies owed are collected as soon as possible after the due date.</li> <li>• The municipality has commissioned an urban regeneration strategy to regenerate CBD areas.</li> <li>• Defined nodal development is promoted - specific to the functionality of such nodes such as tourism and industrial development i.e., Mandeni, Tugela Mouth, Wangu and Isithebe Industrial Zone.</li> <li>• Sufficient funds need to be collected and generated to ensure a sustainable and viable municipality.</li> <li>• Maintenance of fixed assets should be at least 5% of operating budget.</li> <li>• The revenue growth on refuse removal is on average 3% although a tariff increases of 6% is targeted. The municipality need to consider affordability of rates in order to avoid an increase in bad debts.</li> </ul>
2	Financial performance	<ul style="list-style-type: none"> <li>• The expected revenue generated by the solid waste department is R 8 million and operational costs estimated at R 5 million (approximately).</li> <li>• The solid waste department is funded internally from service charges to consumers and the appointment of some contract workers is funded from the EPWP programme.</li> <li>• The total expenditure for MLM in the financial year 2017/18 amounted to R 220 million (FY2016/17: R248 million). <b>Figure 5.1</b> depicts that the municipality spends significant amounts on employee related costs.</li> <li>• The repairs and maintenance budgets were 5% and 3% in the 2015/16 and 2016/17 financial years respectively. Which is below the targeted 8% (of carrying value), shown in <b>Table 5.1</b>.</li> <li>• Actual expenditure for repairs and maintenance was reflected as 4% in 2015/16 and 2% in 2016/17 financial years, underspending on the already low budget.</li> <li>• The municipality uses various sources of funding including internal and external funding, however the major portion is the government grant fund. The municipality is highly dependent on grant funding as revenue streams are too small. Capital grants and transfers totaled R 43.9 million, across all departments, in the 2015/16 financial year and increased to R 47.1 million 2017/18.</li> <li>• Grant funding is forecast to increase by 5.4% in the next two FYs.</li> <li>• The Municipal budget for the grant received in the past 3 years versus actual grants in not consistent as actual spent in 2016/17 was 64% higher than the budget while 2017/18 actual decreased (13% decrease for 2017/18 financial year).</li> </ul>

	<p>The different ratios investigated in <b>Table 5.1- Table 5.6</b> show the following regarding the financial viability of the municipality:</p> <ul style="list-style-type: none"> <li>• The municipal cost coverage ratio achieved in 2017/18 is 1 month which is within the target of 1-3 month and this ratio indicates that the municipality will find it difficult to meet its monthly fixed operating commitments from cash and short-term investments without collecting any additional revenue.</li> <li>• MLM current ratio attained in 2017/18 is 2.23 which is within the targeted current ratio of a range between 1.5-2.1, indicating that the municipality's current assets exceed its liabilities and has the ability to pay its current obligations and continue operations at a desired level.</li> <li>• The capital expenditure, as a proportion of total expenditure, is above the norm of 20% for two financial years, this then reflects higher spending on infrastructure and acceleration in service delivery. In 2017/18 this ratio was at 10% (only half the norm) – which should not set the trend going forward.</li> <li>• The collection rate is below the norm as the municipality is not collecting revenue as billed. This poses a threat as MLM needs the revenue to adequately fund service provision while maintaining its assets in an acceptable condition.</li> <li>• R 13.7 million in unconditional grants were not spent in 2017/18, an increase in underspending from the previous two years.</li> </ul>
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Table 5.1: Repairs and Maintenance ratios (R '000)

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

Table 5.2: Value of grant received past 3 year versus total budget (R '000)

	2015/16		2016/17		2017/18		2018/19		2019/20	
	Budget	Actual	Budget	Actual	Budget	Actual	Budget	Actual	Budget	Actual
MIG		34 263	25 757	33 757	35 940	35 936	37 857		39 882	
NDG		9 623		8 569	11 178	4 898				
<b>Total</b>		<b>43 886</b>	<b>25 757</b>	<b>42 326</b>	<b>47 118</b>	<b>40 834</b>	<b>37 857</b>		<b>39 882</b>	
Growth				-64%		13%				

Table 5.3: Cost coverage ratio

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

Figure 5.1: Historical expenditure

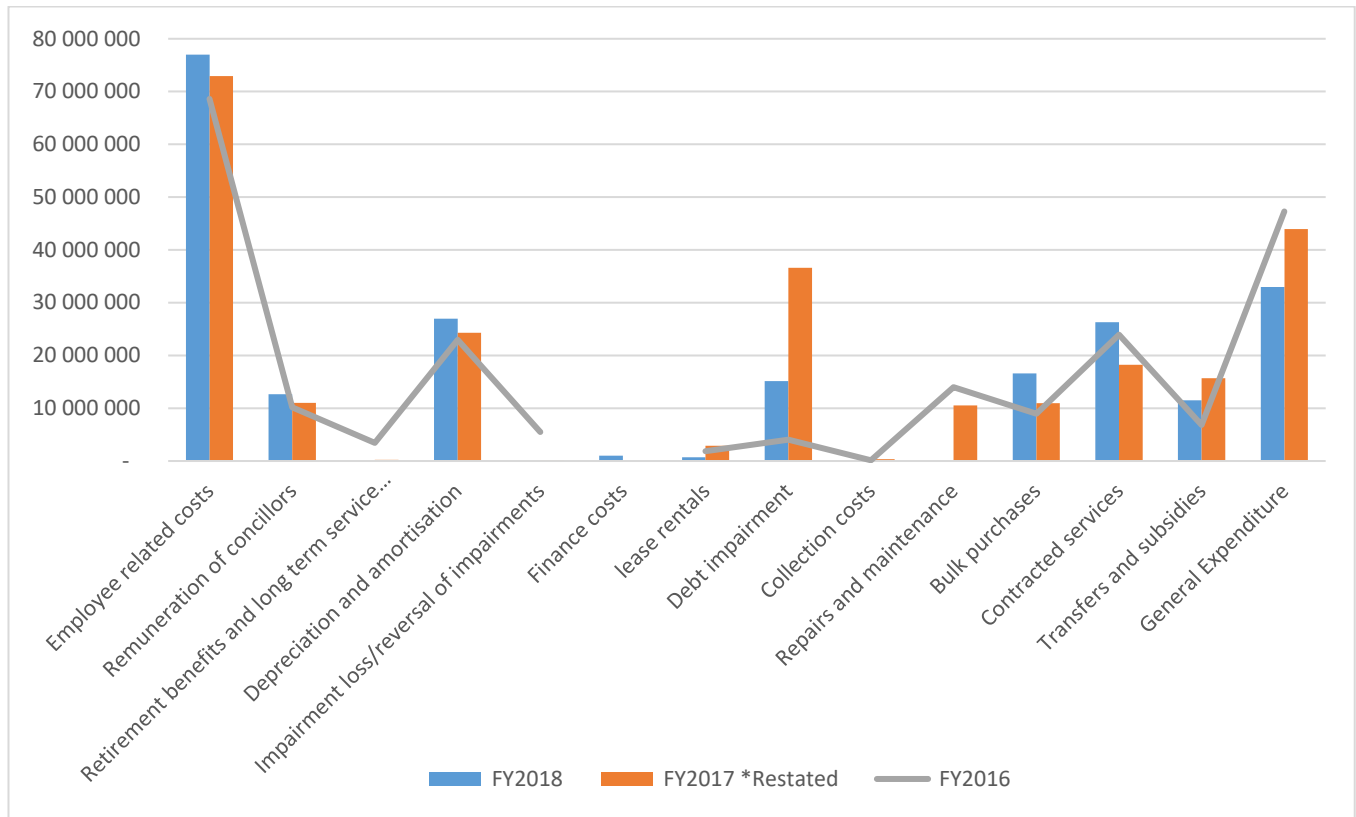


Table 5.4: Current ratio

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

Table 5.5: Capital and operational expenditure ratio

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

Table 5.6: Debt and revenue ratio

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

3	Municipal affordability	<p>The municipality consumer debtors have increased by 18% from 2015/16 to 2016/17 and a further 6% increase in 2017/18. Total bad debts increased by 50% in 2017/18 indicating the affordability challenge for consumers. The large opening debtors balance in 2017/18 of R 148 million, <b>Table 5.6</b>, makes up 62% of the total municipal expenditure in that FY.</p> <p>The municipality is faced with high unemployment rates and payment of tariffs is a problem. The municipality intends to consider other revenue enhancement opportunities and determine an appropriate level of tariff that is affordable to consumers. MLM currently doesn't borrow funds but may need to consider doing so for specific infrastructure investment.</p> <p><b>Table 5.7</b> illustrates the reduction in the use of contractors to provide refuse collection from the 2015/16 to 2017/18 period (reduced from R 7.2 million to R 2.0 million), the budget then decreases by 50% for the 2018/19 year. Although MLM will save on paying the contractor, this operational budget needs to then go to the department to be able to provide the service internally. The cost should be less to provide the service in-house but that is dependent on having adequate human and equipment resources capable of doing the service. If challenges are faced in procuring people to provide the service, then the option of keeping the service provider for a portion of refuse collection should be considered.</p> <p><b>Table 5.8</b> shows an 81% increase for the budget in 2018/19 from the actual functional expenditure in 2017/18. The large increase seems infeasible due to the previous years adjusted budget moving capital away from the solid waste budget. The adjusted lifecycle plan requires a more moderate 6% increase in budget (R 4.85 million). If the current R 8 million is available, then the spending on addressing backlog can be increased as well as the renewal spending for the three budget years (FY 2019, 2020 and 2021). However, due to the fact that there are no capital budget projects for the budget years this would imply the increased functional expenditure all relates to operational costs. There is an opportunity to re-allocate some of this budget to capital spending within the department but also a risk that this budget is dependent on revenue collection and so miss-representative.</p> <p><b>Table 5.9</b> indicates forecast revenue for the department, however, with the strategy of providing only communal collection the revenue will only increase if the collection rate from currently billed customers also increases. This is also the reason that the strategy for addressing additional growth is to focus on extending kerb side collection to the new growth in urban areas, even though the target is communal collection in other areas- thus being able to increase the billing base slightly.</p>
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Table 5.7: Expenditure and budget on contracted services

	2015/16	2016/17	2017/18	Budget Year 2018/19	Budget Year +1 2019/20	Budget Year +2 2020/21
Contractors -refuse	7 227 082	3 222 997	1 983 600	1 000 000	1 054 000	1 111 970
Contractors - landfill site				1 000 000	1 054 000	1 111 970
Contractors - debt collection services				600 000	632 400	667 182

Table 5.8: Functional expenditure of solid waste department compared to proposed lifecycle spending

	2015/16	2016/17	2017/18	Budget Year 2018/19	Budget Year 2019/20	Budget Year 2020/21
Waste management - functional expenditure	7 474 188	3 449 964	4 552 024	8 225 962	8 043 034	8 485 401
Life cycle plan adjusted				4 847 130	4 987 130	5 301 470
Waste management - % increase		-54%	32%	81%	-2%	5%
Life cycle plan adjusted - % increase				6%*	3%	6%

\*% increase from the previous year's actual functional expenditure

Table 5.9: Service charges for refuse removal expenditure and budgeted

	2015/16	2016/17	2017/18	Budget Year 2018/19	Budget Year +1 2019/20	Budget Year +2 2020/21
Total refuse removal revenue	6 339 108	7 750 472	8 395 482	8 898 700	9 379 230	9 895 087
Less cost of free basis services (removed once a week to indigent households)	-	-	-	505 300	532 586	561 878
Net service charges - refuse revenue	6 339 108	7 750 472	8 395 482	8 393 400	8 846 644	9 333 209

4	Funding strategy	<p>MLM needs to establish a committee to implement its revenue collection strategy in order to improve collection rates and increase revenue from tariffs. There has been budget allocated in the FY 2019 to FY 2021 for a debt collection contractor as summarized in <b>Table 5.7</b>.</p> <p>MLM needs to consider other sources of funding in order to fulfill its objective of sustainably providing services. Currently the historic budget is not sufficient to facilitate spending on service for the access backlog while still maintaining the state of the portfolio. Currently the department only spends a portion of its revenue generated (54% in 2017/18), it has budgeted to spend an increased proportion up to 92% (<b>Table 5.10</b>), going forward.</p> <p>For the solid waste life cycle plan the municipality needs capital funds of R 168 750 in the 2018/19 financial year, increasing to R 253 130 in 2019/20 and increasing to R 560 840 in 2020/21. This will require an adjustment to the current planned budget which is R 0 capital for the department. It is highlighted as an important need as renewal is essential to maintain the portfolio. There is an opportunity to reallocate some of the operational budget, to cater for this renewal need.</p> <p>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. Additionally, the municipality may need to start planning alternative spending on a landfill site if the iLembe District Municipality does not construct one as planned. This due to the KCDM site only having 2-5 years of airspace remaining. However, that planning will be reviewed once the IDM confirms their project deadline, and planned airspace.</p>
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Table 5.10: Department expenditure compared to revenue

	2015/16	2016/17	2017/18	Budget Year 2018/19	Budget Year +1 2019/20	Budget Year +2 2020/21
Waste management - functional expenditure	7 474 188	3 449 964	4 552 024	8 225 962	8 043 034	8 485 401
Total refuse removal revenue	6 339 108	7 750 472	8 395 482	8 898 700	9 379 230	9 895 087
<b>Functional expenditure as % of revenue</b>	<b>118%</b>	<b>45%</b>	<b>54%</b>	<b>92%</b>	<b>86%</b>	<b>86%</b>

5	Chapter confidence	<ul style="list-style-type: none"> <li>In general data reliability is moderate, although a lot of effort has been spent validating the accuracy of the information, much of this information has been gained from multiple sources with different grades of confidence and has not been independently verified.</li> <li>The IDP, budgets and financial statements were the primary planning documents referenced in this chapter.</li> </ul>
6	Chapter summary	<ul style="list-style-type: none"> <li>MLM aims at providing reliable services while being viable and sustainable.</li> <li>The overall financial health of the municipality needs improvement in order to allocate budgets to capital and maintenance projects and improve service delivery.</li> <li>The internal revenue of the municipality needs to be increased in order for sustainable operations, but there is an affordability challenge from customers with an already high debtors' rate (gross debtors opening balance 2017/18 R 148 million, after R 10 million written off as bad debt).</li> <li>There is a risk that as level of service provision is increased through communal skips the billing customer base will not increase, hence the operational cost will increase without additional revenue.</li> <li>The current collection rate needs to be improved and budget has been allocated for debt collection services.</li> <li>Total grants received in 2017/18 were R 6 million less than budgeted – the forecast is for an increased MIG budget in the next two years.</li> <li>The life cycle plan for the department was adjusted to be 6% higher than the 2017/18 functional expenditure in the department (from the assessed needs) – thus achievable. However, the current budget for the year is 81% higher than that (although questionable due to the 2017/18 actuals), which would imply the target spending is achievable if some of the operational budget is used for renewal of the portfolio.</li> </ul>



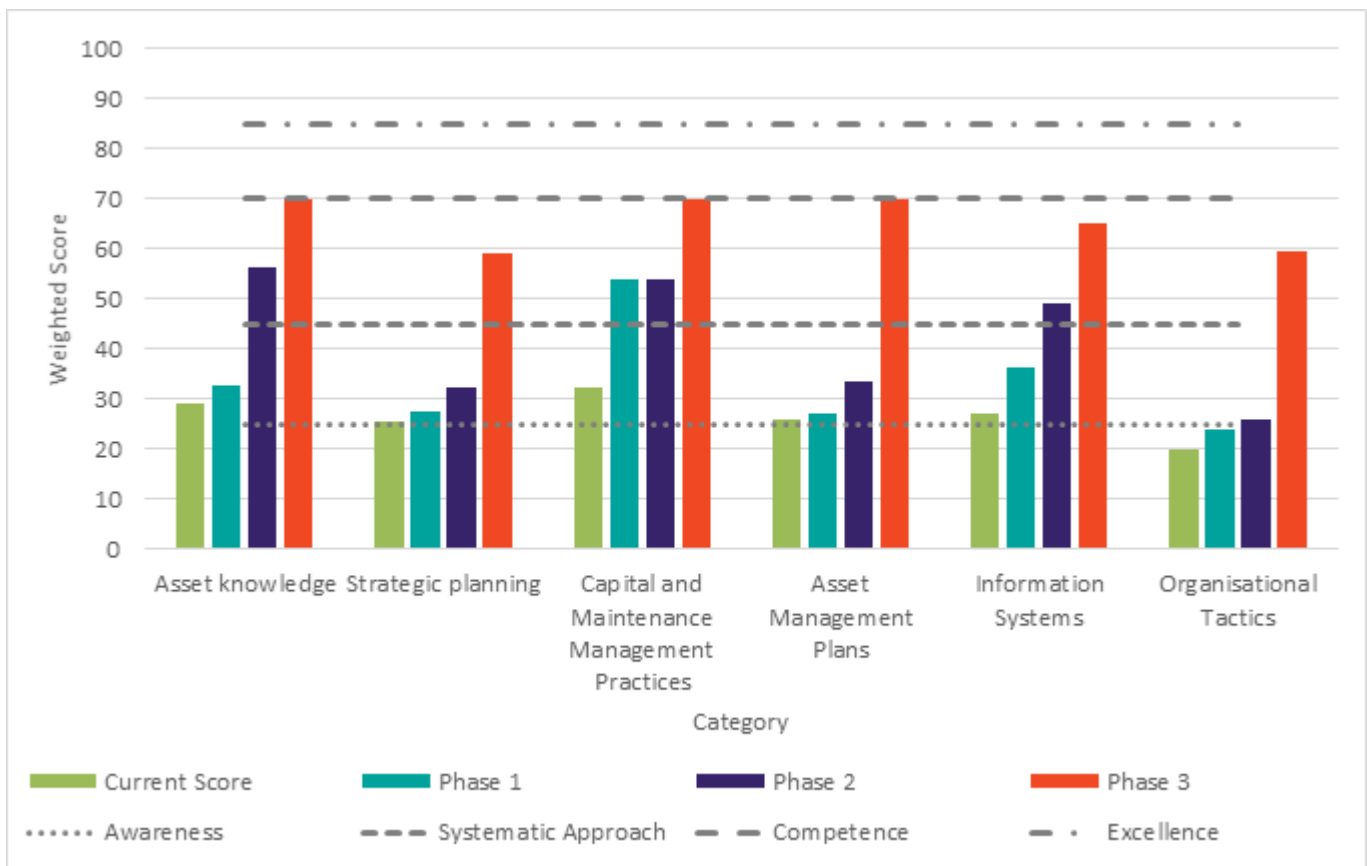
## 6 ASSET MANAGEMENT PRACTICES

### 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>MLM is a category B municipality and is coming off a low asset management practices base, however MLM has demonstrated its commitment to improving its practices by participating in the Vuthela-Ilembe LED Project.</p>
2	Ongoing practice improvement activities	<p>MLM as part of the Project 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, albeit over a few years.</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 are shown in Error! Reference source not found..</p> <p>Some of the MLM data practices approach a ‘systematic approach’ rating; subcategories:</p> <ul style="list-style-type: none"> <li>• asset categorisation,</li> <li>• condition data and</li> <li>• financial data</li> </ul> <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 solid waste department also has additional 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"> <li>• Enhancing the maintenance management process – this will directly benefit community members (year 1).</li> <li>• Enhancing the asset register – allows for cross-departmental integration as well as more easily mapping operational activities to strategic objectives (year 2).</li> </ul>

		<p>Enhancement of the management processes associated with projects – including a review of this preliminary AMP to include improved data (year 3).</p> <p><b>Figure 6.1</b> shows the impact of the phased improvement approach on the different practice categories.</p> <p>This phased approach is set out in the practices improvement plan and is estimated at a total of R 17.5 million to implement (including VAT, disbursements, software and service provision). The work breakdown structure of the improvement plan is detailed in Annexure D along with the associated cost estimates. In order to implement such improvements MLM 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 practice assessment results and impact of phased improvement plan



5	Chapter confidence	The confidence in the practice assessment is 75% - with some areas of estimation.
6	Chapter summary	<p>MLM currently has an asset management practices level of “awareness” for most of the categories of assessment with some small areas approaching a “systematic approach”.</p> <p>The proposed improvement plan prioritizes an improvement of the maintenance management process followed by a municipality-wide enhancement of the asset register and finally improving the management processes associated with projects; all of which to be implemented over a 3-year period at an estimated cost of R 17.5 million, in partnership with LKLM and IDM.</p>

## 7 RISK MANAGEMENT PLAN

The department'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>Mandeni has a risk register which summarizes key risks for different departments, it predominantly reflects process and operational risks as opposed to physical asset risks. The risk register includes:</p> <ul style="list-style-type: none"> <li>• A description of the risk and the department it falls under;</li> <li>• Root cause;</li> <li>• Description of consequences;</li> <li>• Inherent rating, current controls and resulting residual risk rating;</li> <li>• The future plan and progress on achieving it; and</li> <li>• Any additional comments.</li> </ul>
2	Historic risk management performance	<ul style="list-style-type: none"> <li>• Currently the municipality has an overall risk register, which compiles risks from all the departments.</li> <li>• The register assigns a risk owner as well as action owner for future plans and a due date.</li> <li>• The register also notes and planned future mitigation effect on the inherent risk rating.</li> <li>• One area for improvement is expanding on some infrastructure risks.</li> <li>• One risk in the register is the risk culture and awareness – which highlights the need for formally developed policies and procedures relating to Executive Risk Management (ERM).</li> <li>• Specifically, the risk framework needs to be defined and shown on the risk register for interpretation. The acceptable levels of risk need to be documented to ensure the risks can be properly managed.</li> </ul>
3	Key risks	<p>Key risks relating to the solid waste department that are included in the register:</p> <ul style="list-style-type: none"> <li>• Oversight and administration of the waste function resulting in lack of collection as well as illegal dumping (residual risk 3/5).</li> <li>• Plant and equipment is insufficient for increasing service delivery – currently the available plant isn't coping with the current infrastructure maintenance requirements (residual risk 4/5).</li> <li>• Attraction/retention of scarce skilled personnel (within operations and maintenance), skills required for critical functions in operations and maintenance – the inability to build and maintain such skills in-house leads to poor asset management and thus poor state of infrastructure (residual risk 4/5).</li> </ul> <p>Additional risks highlighted in other departments' documents but not on the risk register:</p> <ul style="list-style-type: none"> <li>• Lack of human resources to perform operations.</li> <li>• Budget being moved away from department – stops service provision and ability to maintain assets.</li> <li>• Collection of revenue billed for services provided, growing number of debtors.</li> <li>• Many instances of illegal dumping across the municipality.</li> <li>• Risk of not increasing the billing customer base while still increasing the service provision.</li> </ul>

		<ul style="list-style-type: none"> <li>The Municipal Manager is the identified risk owner.</li> </ul>
4	Key risk mitigation tactics	<p>The risk of current assets in very poor condition should be mitigated through the application of the technical backlog spending and capital renewals as scheduled in the proposed lifecycle plan.</p> <p>The mitigation of risks on the risk register are as follows::</p> <ul style="list-style-type: none"> <li>Bye laws, appointment of manager for oversight of waste management and a dedicated supervisor. Future plan to create standard operating procedures.</li> <li>Use of additional hired plant to meet the need for maintenance plan and monthly maintenance schedules. Future plan to apply for grant funding from the Small-Town regeneration grant for critical plant required to meet service delivery requirements.</li> <li>To review the attraction and retention policy with the intention to add a scarce skill allowance, existing mitigation is to outsource through consultants and contractors.</li> </ul> <p>The risk of low budget and funding constraints can be alleviated by better debt control and billing to customers. There is a need to properly manage the service tariff collection and additional awareness campaigns can be carried out to mitigate illegal dumping instances.</p>
5	Chapter confidence	<p>The risk chapter is informed predominantly from the current risk register (2017/18), the input is compiled from various departments and additional specific information was used to highlight risks that are not currently on the register. The confidence in the information in the chapter is 90% - with some minor inaccuracies.</p>
6	Chapter summary	<p>Key aspects to note:</p> <ul style="list-style-type: none"> <li>The municipality has a risk register in place although it doesn't have a lot of detail on infrastructure risks – it also needs policies and procedures for ERM</li> <li>Key risks for the department include oversight and administration of the waste function; lack of human and monetary resources.</li> <li>A number of mitigation controls are already in place and additional ones have been suggested – but a set framework needs to be developed to inform if the resulting risk is acceptable in terms of the municipal risk appetite.</li> </ul>

## 8 PERFORMANCE PLAN

### The department's asset management performance objectives and forecast.

1	Performance objectives	<p>The municipality measures performance through key performance indicators (KPIs) per municipal key performance area (KPA). The relevant basic service delivery KPA deals with access to solid waste disposal. The municipal strategy is to increase the number of households with communal access to collection through the provision of skips. It is measured through the number of households with access to refuse removal at least once a week.</p> <p>The performance indicator is listed under the section for community services and public safety in the 2017/18 annual performance report. The 2018 target of households having access to monthly refuse removal is 4 431 with the actual being 4 910, however the municipality fell short of its target for households with weekly access to refuse removal (as per their SOS target). With the current budget the target for each year should be re-assessed for practicality and alternative approaches should be considered.</p>
2	Historic performance	<p>From 2015 to 2018 Mandeni Local Municipality has increased its % of serviced households, however it only had a capital expenditure of R 419 000 in 2015/16 and no capital budget in the subsequent years. Hence it has had slow performance overall in meeting targets. The department targets should be reviewed in terms of practicality of service provision across the region and alternative strategies considered in order to better spend on backlog eradication while creating sustainable service provision approaches.</p>
3	Chapter confidence	<p>The performance plan chapter is informed predominantly through the SDBIP – and as such is considered representative. A 90% confidence is given as the chapter is a summary of performance in the department to date.</p>
4	Chapter summary	<p>The solid waste department has increased the number of households with access to service in previous years, however the lack of budget hinders the amount of people it can realistically and sustainably service. With a limited budget providing more service means that the standard of service is affected and thus the department underperforms on its target of a weekly refuse collection. The target of addressing the backlog should be re-assessed and strategies of promoting denser settlement or a district landfill for easier service capacity promoted instead of propagating the full provision of service to the customers as is – thus ensuring better performance.</p>

## A ANNEXURE: BUDGET BREAKDOWN OF PROJECTION

Detail to support the plan including a breakdown of forecasted expenditure and performance.

Projects and Programmes Years 1-5																	
Project/Programmes reference				Fund Segment		Projects segment					Function segment		Cash flow (R)				
Programme	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))	Function/ Department	Core function/Non-core Function	2019	2020	2021	2022	2023
Adjust MTREF	Renewal of infrastructure	001	All	Revenue	Sales of Goods and Rendering of Services	Capital	Infrastructure	Existing	Renewal	Solid Waste Infrastructure	Waste Management	Core Function	168 753	253 130	506 260	541 030	575 801
MTREF	Operational expenditure	002	All	Revenue	General Revenue	Operational	Infrastructure	Existing	Upgrading	Solid Waste Infrastructure	Waste Management	Core Function	4 678 372	4 734 000	4 740 634	4 747 283	4 753 949
Planned	Maintenance expenditure	003	All	Revenue	Sales of Goods and Rendering of Services	Operational	Maintenance	Infrastructure	Corrective Maintenance		Waste Management	Core Function	-	-	35 371	40 467	45 563
Planned	Capital for growth	004	All	Revenue	Sales of Goods and Rendering of Services	Capital	Infrastructure	New	Solid Waste Infrastructure		Waste Management	Core Function	-	-	-	11 364	11 395
Planned	Capital access backlog	005	All	Revenue	Sales of Goods and Rendering of Services	Capital	Infrastructure	New	Solid Waste Infrastructure		Waste Management	Core Function	-	-	-	347 701	347 701
Planned	Capital technical backlog (replacement of existing bins)	006	All	Revenue	Sales of Goods and Rendering of Services	Capital	Infrastructure	Existing	Renewal	Solid Waste Infrastructure	Waste Management	Core Function	-	-	19 210	19 210	19 210
													<b>4 847 126</b>	<b>4 987 130</b>	<b>5 301 475</b>	<b>5 707 056</b>	<b>5 753 619</b>

Projects and Programmes Years 6-15																
Project/Programmes reference		Fund Segment		Projects segment					Function segment		Cash flow (R)					
Program me	Regional allocation	mSCOA (2)	mSCOA (3)	CAPEX/ OPEX	mSCOA (2)	New/Existing/L and (mSCOA (3))	Expenditure type (mSCOA (4))	Asset Class (mSCOA (5))	Function/ Department	Core function/Non-core Function	Total Cost	2024	2025	2026	2027	2028
Planned growth	All regions	Revenue	Sales of Goods and Rendering of Services	Capital	Infrastructure	New	Solid Waste Infrastructure		Waste Management	Core Function	57 444	11 426	11 457	11 489	11 520	11 552
Planned renewal	All regions	Revenue	Sales of Goods and Rendering of Services	Capital	Infrastructure	Existing	Renewal	Solid Waste Infrastructure	Waste Management	Core Function	3 400 555	610 571	645 341	680 111	714 881	749 651
Planned access backlog	All regions	Revenue	Sales of Goods and Rendering of Services	Capital	Infrastructure	New	Solid Waste Infrastructure		Waste Management	Core Function	1 738 507	347 701	347 701	347 701	347 701	347 701
Planned technical backlog (replacing existing bins)	All regions	Revenue	Sales of Goods and Rendering of Services	Capital	Infrastructure	New	Solid Waste Infrastructure		Waste Management	Core Function	134 467	19 210	19 210	19 210	38 419	38 419
Planned maintenance	All regions	Revenue	Sales of Goods and Rendering of Services	Operational	Maintenance	Infrastructure	Corrective Maintenance		Waste Management	Core Function	304 257	50 659	55 755	60 851	65 947	71 043
Planned operation	All regions	Revenue	General Revenue	Operational	Infrastructure	Existing	Upgrading	Solid Waste Infrastructure	Waste Management	Core Function	23 870 290	4 760 631	4 767 328	4 774 042	4 780 772	4 787 518
												<b>5 800 198</b>	<b>5 846 793</b>	<b>5 893 404</b>	<b>5 959 241</b>	<b>6 005 885</b>

## B ANNEXURE: GLOSSARY OF TERMS

Detailed definitions of specific asset management terminology used in the document

### GLOSSARY OF TERMS:

<b>Asset</b>	A physical component of a facility which has value, enables services to be provided and has an economic life of greater than 12 months.
<b>Asset management (LGIAMG)</b>	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 minimise their related risks and costs over their entire life.
<b>Asset management objectives (IIMM)</b>	Specific outcomes required from the implementation of the asset management system.
<b>Asset management plan</b>	A documented plan developed for the management of 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.
<b>Asset management policy (PAS 55-1: 2004 BSI)</b>	The overall intentions and direction of an organisation related to the assets and the framework for the control of asset-related processes and activities.
<b>Asset management practices (IIMM)</b>	The asset management processes and techniques that an entity undertakes, such as demand forecasting, developing and monitoring levels of service and risk management.
<b>Asset management strategy (IIMM)</b>	The high-level long-term approach to asset management including asset management action plans and objectives for managing the assets.
<b>Asset management system (ISO 55000)</b>	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.



<b>Asset register (LGIAMG)</b>	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. The unit of account in an asset register is a component.
<b>Capacity (IIMM)</b>	Maximum output that can be produced or delivered using existing network or infrastructure.
<b>Capital expenditure (CAPEX)</b>	Expenditure used to create new assets, increase the capacity of existing assets beyond their original design capacity or service potential, or to return 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.
<b>Carrying amount</b>	The amount at which an asset is recognised after deducting any accumulated depreciation and accumulated impairment losses.
<b>Cash flow</b>	The stream of costs and / or benefits over time resulting from a project investment or ownership of an asset.
<b>Competence (ISO 55000)</b>	The ability to apply knowledge and skills to achieve intended results.
<b>Component (IIMM)</b>	A component is a specific part of a complex item that has independent physical or functional identity and specific attributes such as different life expectancy, maintenance and renewal requirements and regimes, risk or criticality. Which is recognised separately on an asset register.
<b>Condition (IIMM)</b>	The physical state of the asset.
<b>Critical assets (IIMM)</b>	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.
<b>Current replacement cost (IIMM)</b>	The cost the entity would incur to acquire the asset on the reporting date.
<b>Decommissioning (IIMM)</b>	Actions required to take an asset out of service.
<b>Demand management</b>	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.
<b>Depreciable amount (GRAP)</b>	The cost of an asset, or other amount substituted for cost, less its residual value.
<b>Depreciated replacement cost (IIMM)</b>	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.

<b>Depreciation (GRAP)</b>	Depreciation is the systematic allocation of the depreciable amount of an asset over its useful life.
<b>Disposal (IIMM)</b>	Actions necessary to decommission and dispose of assets that are no longer required.
<b>Expected useful life</b>	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.
<b>Facility (IIMM)</b>	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.
<b>Integrated Development Plan</b>	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.
<b>Impairment loss (GRAP)</b>	An impairment loss of a cash-generating asset is the amount by which the carrying amount of an asset exceeds its recoverable amount.
<b>Infrastructure assets (LGIAMG)</b>	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.
<b>Level of service (IIMM)</b>	Levels of service statements describe the outputs or objectives an organisation or activity intends to deliver to customers.
<b>Lifecycle (IIMM)</b>	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.
<b>Lifecycle asset management</b>	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.
<b>Lifecycle cost (IIMM)</b>	The total cost of an asset throughout its life including planning, design, construction, acquisition, operation, maintenance, renewal and disposal costs.
<b>Maintenance</b>	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.
<b>Maintenance expenditure</b>	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.
<b>Maintenance plan (LGIAMG)</b>	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.

<b>Modern equivalent asset (IIMM)</b>	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).
<b>Monitoring (ISO 55000)</b>	Determining the status of a system, a process or an activity.
<b>Operating expenditure (OPEX)</b>	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.
<b>Operation</b>	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.
<b>Performance (ISO 55 000)</b>	Measurable result of either quantitative or qualitative nature that can relate to the management of activities, processes, products or services, systems or organisations.
<b>Performance measure (IIMM)</b>	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.
<b>Performance monitoring (LGIAMG)</b>	Continuous or periodic quantitative and qualitative assessments of the actual performance compared with specific objectives, targets or standards
<b>Rehabilitation</b>	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.
<b>Renewal</b>	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.
<b>Repair</b>	Action to restore an item to its previous condition after failure or damage.
<b>Replacement</b>	The complete replacement of an asset that has reached the end of its life, to provide a similar, or agreed alternative, level of service.
<b>Remaining useful life (IIMM)</b>	The time remaining until an asset ceases to provide the required service level or economic usefulness.
<b>Residual value (GRAP)</b>	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.
<b>Revenue</b>	An increase in economic benefits during an accounting period through an enhancement of an asset or through a decrease in a liability.
<b>Risk (IIMM)</b>	The effect of uncertainty on objectives. Risk events are events which may compromise the delivery of the entity's strategic objectives.
<b>Risk controls (IIMM)</b>	Measures to manage or mitigate identified risks.

<b>Risk exposure (IIMM)</b>	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.
<b>Risk management (IIMM)</b>	The application of a formal process that identifies the exposure of an entity to service performance risk and determines appropriate responses.
<b>Strategic plan</b>	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.
<b>Upgrading</b>	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.

Some definitions obtained from CIDMS online knowledge centre.

## C ANNEXURE: PORTFOLIO HEALTH STATUS

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<b>Infrastructure Health Grade</b>	<b>Portfolio Health description</b>	<b>(DRC-RV)/(CRC-RV)</b>
1	Very Good	61% or more
2	Good	54% to 61%
3	Fair	47% to 54%
4	Poor	40 to 47%
5	Very Poor	40% or less

## D ANNEXURE: PROPOSED IMPROVEMENT WORK BREAKDOWN STRUCTURE

NO	ACTIVITY	TASKS	OUTCOMES	TOTAL PER ACTIVITY MLM	TOTAL PER ACTIVITY KLM	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 KLM	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	<b>Review and update Asset Management Plans (AMPs) and a Strategic Asset Management Plan (SAMP) for all immovable assets</b>	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	<b>Risk Management Strategy</b>	Develop a Risk Management Strategy focused on infrastructure	Established a Risk Management Strategy focused on infrastructure				469 392	469 392
<b>Total</b>				<b>17 535 205</b>	<b>24 470 883</b>	<b>20 445 082</b>	<b>1 301 242</b>	<b>63 752 411</b>