



Mogale City Local Municipality Capital Expenditure Framework

Draft Capital Expenditure Framework

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e n g i n e e r e d s o l u t i o n s



Mogale City
Local Municipality

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Disclaimer

This document contains forward-looking statements. While due care has been used in the preparation of forecasted information, the actual outcomes may differ from the forecasts. Whilst reasonable care was taken in the development of this document, forecasts and recommendations made in this document may be influenced by external factors or events that may occur after the development of this document, or by information or events that may not have been disclosed or known and therefore not incorporated at the time of the development of this document. The reader is therefore cautioned not to place inappropriate reliance on forward-looking statements.

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Introduction

1 Introduction

This report is an interim deliverable of the process of developing a Capital Expenditure Framework (CEF). A CEF is a requirement of the Spatial Planning, and Land Use Management Act of 2013 (Act 16 of 2013) emphasised as an essential tool in the Integrated Urban Development Framework (IUDF) released in 2016 by the Department of Cooperative Governance and Traditional Affairs (COGTA). Since 2018, the IUDF was institutionalised as part of the planning and fiscal framework for municipalities.

1.1 Background

1.1.1 Legislative Context of a Capital Expenditure Framework

The term “Capital Expenditure Framework” (CEF) became a municipal mandate with the promulgation of the Spatial Planning and Land Use Management Act, Act 16 of 2013 (SPLUMA) section (21)(n). However, the concept of a Capital Investment- or Capital Expenditure Framework has been alluded to in several other preceding legislative and policy instruments. The legislative context is best understood when considering a brief history of municipal planning, with specific reference to Integrated Development Plans (IDPs), Spatial Development Frameworks (SDFs), and Municipal Budgeting. To understand the evolution of municipal planning in this context, the point of departure is the Constitution of South Africa.

Section 153 of the Constitution of South Africa states that a municipality must structure and manage its administration, budgeting, and planning process to prioritise basic needs and promote social and economic development. The Constitution instructs municipalities to have a developmental focus and that this should be achieved through the planning- and budgeting processes.

1.1.2 Municipal planning processes

The Local Government Transitions Act (Act 209 of 1993) was the first act stating that a municipality should compile an IDP - it did however not define the content or the nature thereof.

The Local Government Transitions Act Second Amendment (Act 97 of 1996) then defined an IDP as a plan aimed at the integrated development and management of the area of jurisdiction of a municipality. Section (10)(c) specifically showed that IDPs would promote rational and developmentally oriented budgeting, monitoring and tracking of development. A similar definition of an IDP was included in the Local Government Municipal Structures Act (Act 117 of 1998). This definition further underlined the inter-relationship between the planning and budgeting process.

The Local Government Municipal Systems Act (MSA) (Act 32 of 2000) was a successor to the Local Government Municipal Structures Act (Act 117 of 1998). The MSA was deemed the most important statute furthering all aspects of integrated development planning. Chapter 5 of the act is titled “Integrated Development Planning” and provides that municipalities must undertake developmental-oriented planning. This is to ensure that the objectives of local government and its developmental duties (as set out in the constitution) are achieved.

The act states that an IDP is the principal, single, inclusive and strategic planning instrument of a municipality. One of the objectives of the IDP is to align the resources and capacity of the municipality with the implementation of the plan. This forms the policy framework and general basis on which annual budgets must be based and should be compatible with, national and provincial development plans and planning requirements. The core components and content of an IDP must reflect the following:

- The municipality’s vision for its long-term development of the municipality;
- An assessment of the existing level of development in the municipality;
- The municipality’s development priorities and objectives;
- The municipality’s development strategies;
- The municipality’s Spatial Development Framework (SDF);

- The municipality's operational strategies;
- An applicable disaster management plan;
- A financial plan, and;
- Performance indicators and performance targets.

In section (5)(1)(a) of SPLUMA (Act 16 of 2013), it is stated that municipal planning consists of the compilation, approval, and review of an IDP. SPLUMA further states in Part E (20)(2) that the municipal SDF must be prepared as part of a municipality's IDP in following the provisions of the MSA (Act 32 of 2000).

Section 21 of SPLUMA prescribes what the content of a municipal SDF must be. Section 21(n) is of particular importance as it states that a municipal SDF must determine a CEF for the municipality's development programmes, depicted spatially.

1.1.3 Municipal budgeting processes

The Municipal Systems Act (Act 32 of 2000) states that an IDP must be inclusive of a financial plan. The Municipal Planning and Performance Management Regulations (Regulation 2 of 2001) describes the details of such a financial plan and states in section (3) that the financial plan in a municipality's IDP must:

- Include budget projections;
- Indicate the financial resources that are available for capital project developments, and;
- Include a financial strategy that defines sound financial management and expenditure control, as well as ways and means of increasing revenues and external funding for the municipality and its development priorities and objectives.

After the MSA (Act 32 of 2000) defined what should be done in terms of the IDP and financial planning, the Local Government: Municipal Finance Management Act (MFMA) (Act 56 of 2003) was established to secure sound and sustainable management of the financial affairs of municipalities and other institutions in the local sphere of government and to establish treasury norms and standards for local government. The MFMA (Act 56 of 2003) was revised in 2011 and redefined its aim to enable improved processes of municipal planning budgeting, allowing for more informed decisions.

To achieve the aim of the MFMA (Act 56 of 2003), the MFMA prescribes the typical content of municipal budgets in Chapter 4. In Chapter (3)(b) the act states that when an annual budget is tabled it must be accompanied by measurable performance objectives for revenue from each source and each vote in a budget, considering the municipality's IDP. This means that a municipal budget cannot be drafted in isolation from the IDP.

1.1.4 The relationship between the planning and budgeting processes

From the legislative context provided in this section, the following municipal mandate imperatives are highlighted:

- That the Constitution of South Africa demands planning and budgeting processes in local government (Constitution of South Africa, Act 108 of 1996);
- That the Constitution of South Africa demands local government be developmental and resource-efficient (Constitution of South Africa, Act 108 of 1996);
- That an IDP is deemed as the principal, single, inclusive and strategic planning instrument of a municipality and it should comprise a financial plan as well as an SDF (Municipal Systems Act, 32 of 2000);
- That the municipal budgeting process cannot stand alone from the IDP process (Municipal Finance Management Act, 56 of 2003), and;
- That the SDF must contain a CEF that is spatially referenced (Spatial Planning and Land Use Management Act, 16 of 2013).

1.2 The role of the CEF

A Capital Expenditure Framework is a consolidated, high-level view of infrastructure investment needs in a municipality over the long term (10 years) that considers not only infrastructure needs but also how these needs can be financed and what impact the required investment in infrastructure will have on the financial viability of the municipality going forward.

Guide to Preparing an Infrastructure Investment Framework, SALGA, 2017, page 2

The role of a CEF is to frame the outcomes of a multitude of planning documents within the municipality to ensure that implementation is guided by strategic, spatial, financial and socio-economic logic. A CEF serves not only as a performance evaluation mechanism but also as a rationale towards capital investment planning that provides business intelligence, data validation, project synchronisation and prioritisation. Furthermore, the role of the CEF is to establish or strengthen the process currently institutionalised within the municipality, and to show how capital investment matures from planning to implementation. The primary outputs of the CEF are summarised below:

- The SDF is unpacked to identify the spatial vision and to inform the functional areas and priority development areas for the municipality to prepare a socio-economic and developmental profile for the municipality.
- The socio-economic and developmental profiling serves as a primary input to the demand quantification and setting of programmatic long-term infrastructure investment targets required to realise the spatial vision of the municipality.
- Before subjecting projects applying for the budget to a prioritisation and budgeting process, the municipality must first identify all capital demand or needs that are required over the long-term within their jurisdiction, irrespective of whether the capital demand stems from local, provincial or national spheres of government. The Integrated Infrastructure Investment Framework (IIIF) or Capital Investment Framework (CIF) therefore aims to gather the long-term capital demand required for the municipality to function optimally.
- The spatial development vision of the municipality, along with other strategic, financial, policy, socio-economic and technical objectives are used to prepare a prioritisation model to rank or score capital demand (projects) based on their alignment to the spatial, strategic, financial, policy, socio-economic and technical objectives of the municipality.
- The process of setting up a budget for the CEF draws from the outcomes of the long-term financial plan whereby the affordability envelope and the optimal funding mix for capital investment for the municipal are modelled based on key socio-economic and population growth projections. Once the affordability envelope is known, the 10-year capital budget can be prepared with inputs from the project prioritisation results.
- The final step in preparing the CEF is to define an implementation programme for the medium term – in line with the Medium-Term Expenditure Framework (MTEF). The medium-term implementation plan of the CEF is known as the Capital Expenditure Implementation Programme (CEIP) which is essentially the first three budget years of the 10-year Capital Expenditure Framework.



Socio-Economic Profiling

2 Socio Economic Profiling

2.1 Notes on data, the use and presentation thereof

Spatial analysis and profiling areas depend on quality, detail and geographical data sets. The challenge is to present and use data in such a way that it conveys a message based on facts. The analyst's duty and skill are to combine different datasets and extract value from the process.

There are three challenges to overcome. The first is that data represents a picture at a specific time. These time or date differences makes direct comparisons very challenging. Secondly, data have a particular granularity depending on the spatial scale the data was generated or presented. This makes the disaggregation of data to a more advanced level of granularity more challenging. The third issue is that related data are generated from different bases, often for different purposes. For example, what is the difference between a family unit, a household or a residential customer in a municipality? They are all related and might even be the same, but they have different interpretations, whether one does social, economic, or financial analyses.

There are three basic ways to overcome these challenges. The first is mapping to do pattern recognition within the timeframe of rates of change. For example, quoting the 2011 census number of population values can no longer be valid in 2022. However, a map depicting the distribution of population language majorities may still allow the spatial analyst to make every valid observation and essential conclusion because these patterns are slow to change. Secondly, the approach is to do trend analysis by plotting temporal data and then statistically calculating and determining the trend the data values represent at different points in time. Finally, the third option is spatial or numerical cross-comparisons between different and unrelated datasets to draw inferences on trends and outcomes developing in the area.

The approach remains to find the most recent and credible data but to supplement it with historical or comparative data to extract the maxim value from the data. As a word of caution, simply quoting a figure is meaningless if its not put in context or these implications there assessed.

2.2 The use of place names

Place names used in this document are the place names reflected in official national and provincial datasets. Official names are designated through the South African Geographical Names Council. The official governing body of South Africa advises the central government's executive branch (in the form of the Minister of Arts and Culture) on new geographical names and the changing of existing ones. The Council was established by the South African Geographical Names Council Act 118 of 1998. We are aware that there are often discrepancies between official and local names. Using official names is practical and should not be construed as disrespecting local names, customs and traditions.

2.3 Introduction

This report forms part of formulating a Capital Expenditure Framework for the Mogale City Local Municipality. This report focuses on the municipal area's socio-economic and spatial characteristics. The municipality's spatial and socio-economic profile drives future demand, capital, and operating investment and expenditure.

The purpose of compiling a socio-economic profile for the municipality is to establish a baseline for assessment and long-term infrastructure demand modelling and identify functional areas that support consistent planning and policy approaches. Furthermore, an analysis of the municipality's socio-economic profile contributes to a better understanding of the municipal area's development dynamics and service delivery processes.

The socio-economic variables form the basis for projecting future growth and set a framework for determining long-term infrastructure demand. Understanding the municipality's socio-economic and spatial profile enables the municipality to make more accurate and informed decisions regarding capital investment in the future.

Social profiling is usually a part of the process of formulating an SDF. However, given the general lack of quantification and empirical data in the existing SDFs, municipal and functional area profiling became necessary in the CEF guidelines for evidence-based planning.

2.4 Aims and objectives of this report

This report aims to achieve the following:

- To describe the current socio-economic conditions and assess how they may change,
- To understand the structural impediments that underpin infrastructure development within the municipality, and
- To provide an integrated basis for the development of the Capital Expenditure Framework.

2.5 Context of the Municipality

2.5.1 Demarcation history

South Africa undergoes a reassessment of its municipal boundaries before each municipal election. Changes in municipal boundaries affect all planning levels and long-term development strategies. Table 2-1 shows the municipality(s) which previously formed part of the current municipality.

Table 2-1: Demarcation history

	2016	2011	2006	2001	1996
District municipality(s) / Metropolitan area(s) affected	City of Johannesburg West Rand	City of Johannesburg West Rand	City of Johannesburg MM City of Tshwane MM West Rand DC	Bojanala DM City of Johannesburg MM City of Tshwane MM West Rand DM	Eastern TDC Rustenburg TDC Unknown Unknown
Local municipality(s) affected:	City of Johannesburg Mogale City	City of Johannesburg Mogale City	Johannesburg Krugersdorp Pretoria Sterkfontein DMA DM	City of Johannesburg Metro City of Tshwane Metro Madibeng Mogale City West Rand	Crocodile River TRC Eastern Region Remaining TRC Gatsrand TRC Hartebeespoort TLC Krugersdorp TLC Magaliesberg LAC Magaliesberg TRC Northern Johannesburg MLC Randfontein TLC Rustenburg Region TRC Western Johannesburg MLC
Number of wards	38	35	33	35	No data

Source: Municipal Demarcation Board

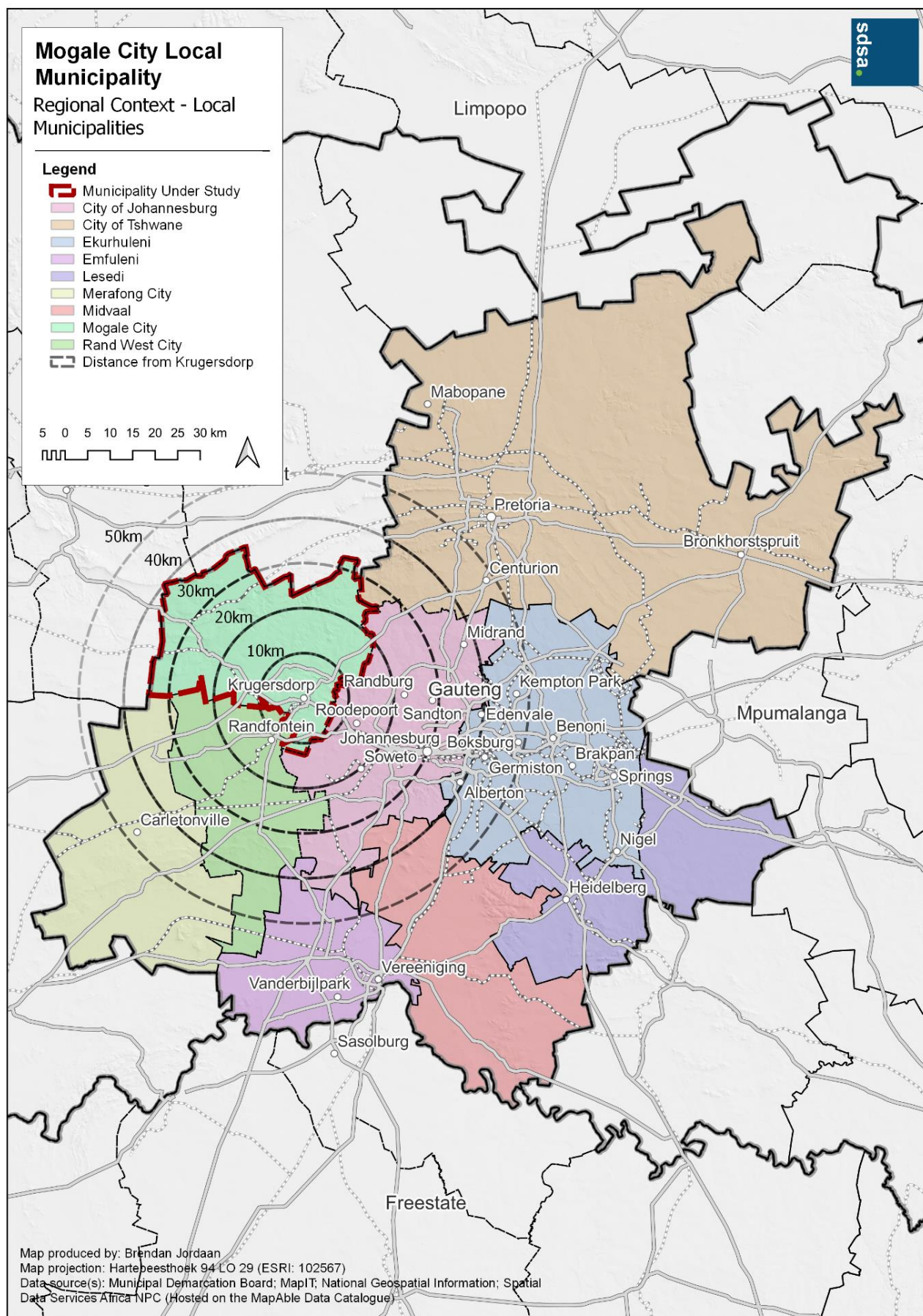
The data shows that the municipality had various demarcation disruptions over its history. However, fewer demarcation changes contribute to stability in the area and allow growth and development without the institutional and service delivery disruptions that typically accompany municipal boundary changes.

2.5.2 Regional context

Mogale City Local Municipality is situated in the West Rand District Municipality of the Gauteng Province in South Africa. It is strategically located on the western outskirts of Johannesburg, one of the country's major economic hubs. The municipality shares borders with several other local municipalities, including the City of Johannesburg Metropolitan

Municipality to the east, the Merafong City Local Municipality to the southwest, and the Madibeng Local Municipality in the North West Province to the west. This favourable regional position places Mogale City at the intersection of various economic and social dynamics, allowing it to benefit from the proximity to Johannesburg's urban opportunities while retaining its unique identity. Mogale City is linked to the City of Tshwane via the R28/N14 highway, but there is no real spatial integration between these two areas, as the Tshwane urban areas are separated from Mogale City by natural open space areas. However, there are still significant flows between the two areas, both from a commuter perspective and the flow of goods and services.

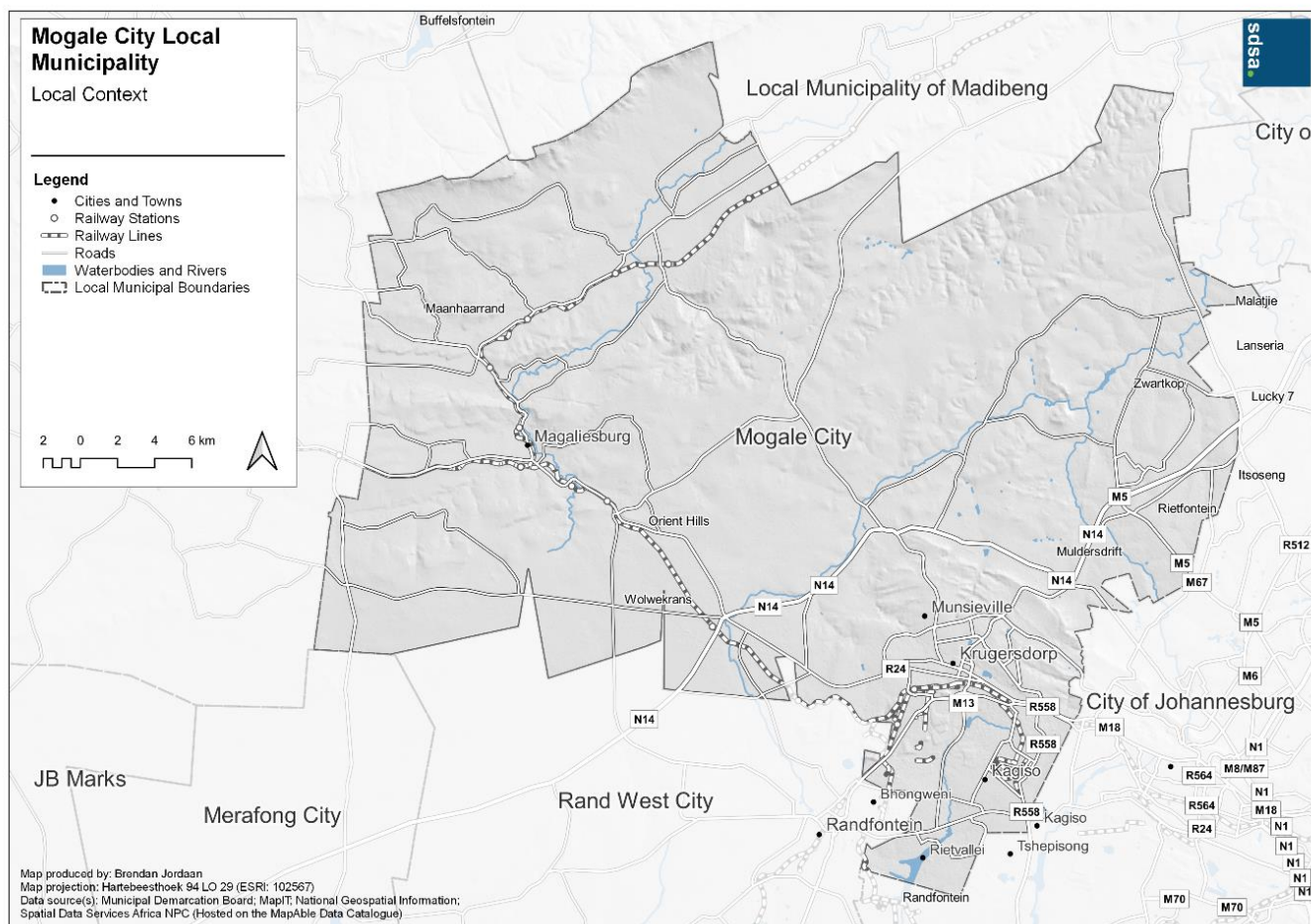
Map 2-1: Regional context



2.5.3 Local context

It covers an area of approximately 134 525 ha and is home to nearly 450 000 residents. The municipality comprises the towns of Krugersdorp, Kagiso, and Randfontein, as well as numerous smaller settlements and rural areas. Mogale City is renowned for its rich cultural heritage, historical significance, and natural beauty. It encompasses a significant portion of the UNESCO World Heritage Site, the Cradle of Humankind, which showcases the fossilized remains of early hominids and offers a fascinating glimpse into the origins of humankind. The municipality is committed to sustainable development, community empowerment, and improving the quality of life for its residents through the provision of essential services, infrastructure development, and fostering economic growth in key sectors such as mining, manufacturing, and tourism.

Map 2-2: Local context (Reference map)



Source: SDSA (MapAble 2020)

2.6 Demographic Profile

The basis for assessment is expected changes in the municipality's demographic profile. The core of this assessment is the relationship between population and households as the basis of the council's customer base.

A range of factors impacts the demographic profile of the municipality. These factors interact horizontally and, importantly, have a hierarchical relationship with national, provincial and regional demographics. Therefore, variables

are analysed on a comparative basis by exploring relationships between demographic variables and the demographics' relationship with economic development.

2.6.1 Population characteristics

The factors considered in this chapter are:

- Population size, household numbers and size and the expected change in these numbers
- Age, language, and education
- The impact of HIV and AIDS on population growth expectations
- Migration

a. Population structure, age, and gender

The total population is the starting point. For any planning assessment, the total population is fundamental to the current and long-term demand for services and facilities. Table 2 below shows the population, with a gender split, for the three census periods, Community Survey 2016 and the 2020 WoldPop.org data. The time-related figures can draw inferences about population growth or decline. Gender splits, if appropriate under local conditions, also serve as a proxy for migrant labour. Generally speaking, male absenteeism is a proxy for labour leaving an area. Table 2 below shows that, regarding the gender split, the region has more males than females, which may indicate migrant labour.

Table 2-2: Population and gender

	1996	2001	2011	2016	2020
Males	116 575	152 480	185 047	199 017	230 500
Females	110 462	143 507	177 489	192 394	213 300
Population density (persons/ha)	0.47	2.20	2.69	2.91	3.3
Total Population	227 037	295 988	362 536	391 411	444 340
Males	116 575	152 480	185 047	199 017	230 500

Source: Census 1996, 2001, 2011, Community survey 2016, /SDSA (MapAble 2020) /WoldPop2020

Age groups are significant in any demographic assessment. The population's age structure indicates the expected long-term demand for community and social services, housing, and infrastructure services. Table 2-3 below only shows four age categories. The first category is the preschool population, the second is the school-going population's extent, and the third is the economically active population. The last group is the elderly population.

The study area's age structure has remained relatively unchanged over all age groups. Interestingly, over 64.2% of the population falls within the economically active group of 20 to 65 years, as reported in the 2016 community survey figures. This percentage has increased from 59.9% in 1996. The two following maps (Map 3 and Map 4) show the population below 19 years and the working-age group population. Map 4 emphasises the high percentage of people within the municipality's working-age group.

Table 2-3: Age groups (StatsSA)

	1996		2001		2011		2016	
	Male	Female	Male	Female	Male	Female	Male	Female
<5	11 995	12 278	20 090	19 801	14 457	14 707	17 023	16 537
5 to 20	28 096	27 783	40 574	40 221	37 326	35 775	41 057	43 164
20 to 65	71 698	64 441	118 029	108 891	95 943	86 891	130 007	121 449
>65	3 589	4 913	6 354	8 577	4 754	6 135	10 931	11 243
Unspecified	1 197	1 048	0		0			
Total	116 575	110 462	152 480	143 507	185 047	177 489	199 017	192 394
	227 037		295 988		362 536		391 411	

Source: Census 1996, 2001, 2011, Community survey 2016/SDSA (MapAble 2020)

Table 2-4 below shows the different gender groups for a more detailed breakdown of the age groups.

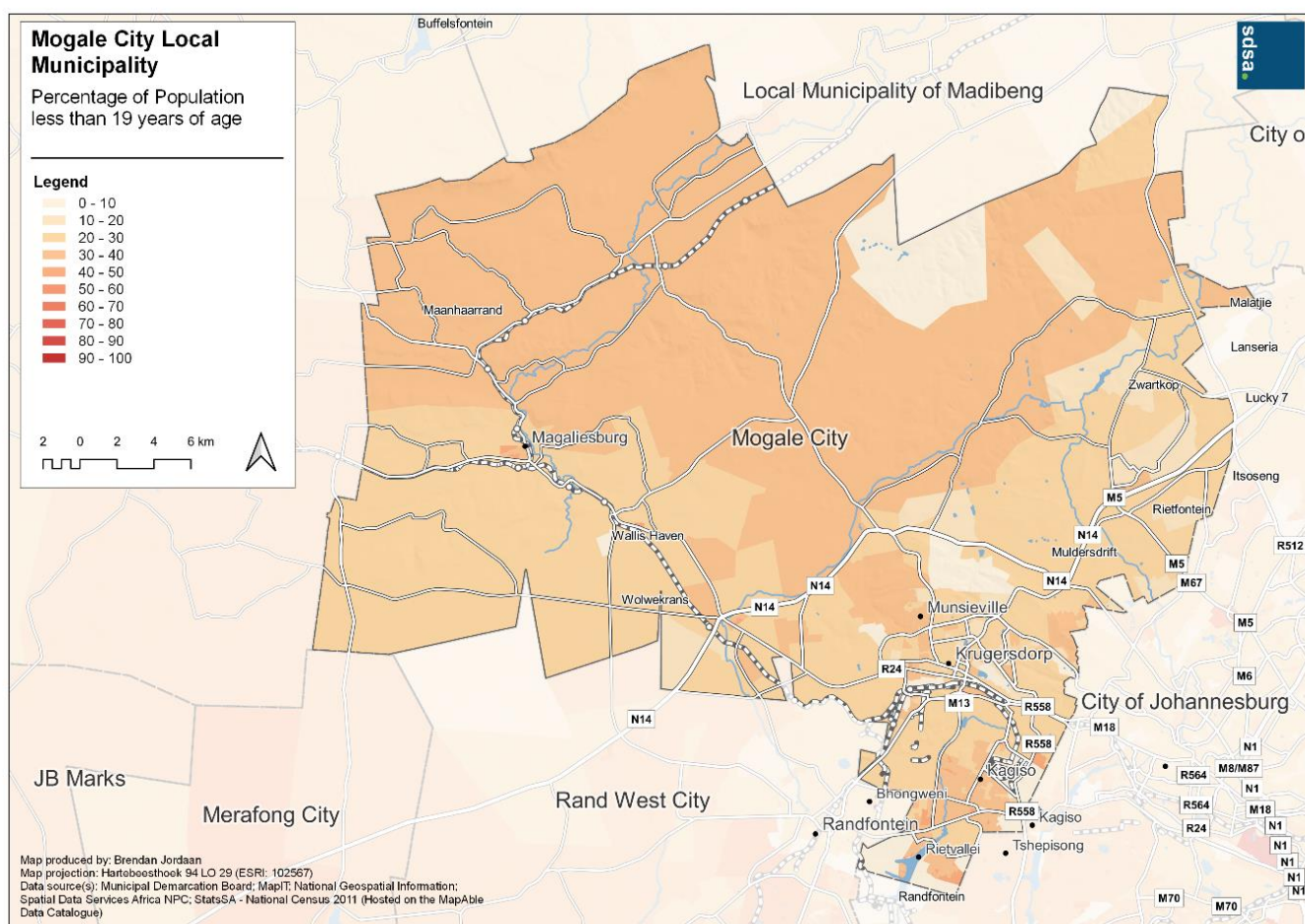
Table 2-4: Age Groups 2020

Age Group	Description	Male	%	Female	%	Total	%
0 - 5	Pre-school age	18 143	7,87%	18 071	8,47%	36 214	8,15%
6 - 13	Primary school age	26 390	11,45%	26 714	12,52%	53 104	11,95%
14 - 18	Secondary school age	15 382	6,67%	15 516	7,27%	30 898	6,95%
19 - 35	Young adults	76 746	33,30%	65 975	30,93%	142 722	32,12%
36 - 65	Adults	83 307	36,14%	75 424	35,36%	158 731	35,72%
66 - 75	Senior adults	7 634	3,31%	8 162	3,83%	15 796	3,55%
75 and up	Elderly	2 897	1,26%	3 438	1,61%	6 875	1,55%
	Total	230 500	100%	213 300	100%	444 340	100%

Source: www.worldpop.org as calculated by SDSA (SDSA 2020)

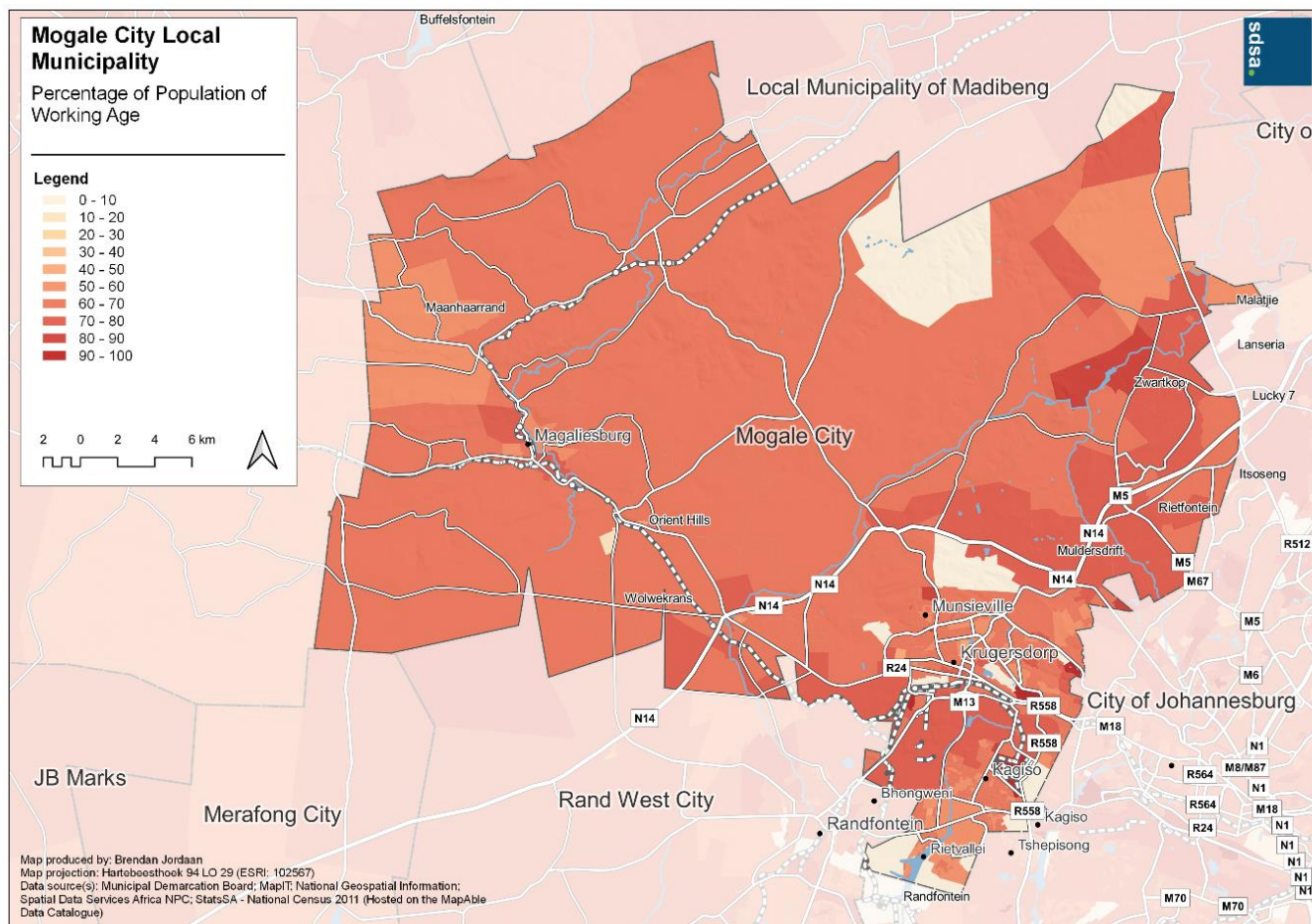
As seen in Table 2-4 above, the split between the genders remains relatively even over the different age groups.

Map 2-3: % of the Population: Younger than 19 years 2011



Source: Census 2011 / SDSA (MapAble 2020)

Map 2-4: % of the Population: Working Age (20 to 65 years) 2011

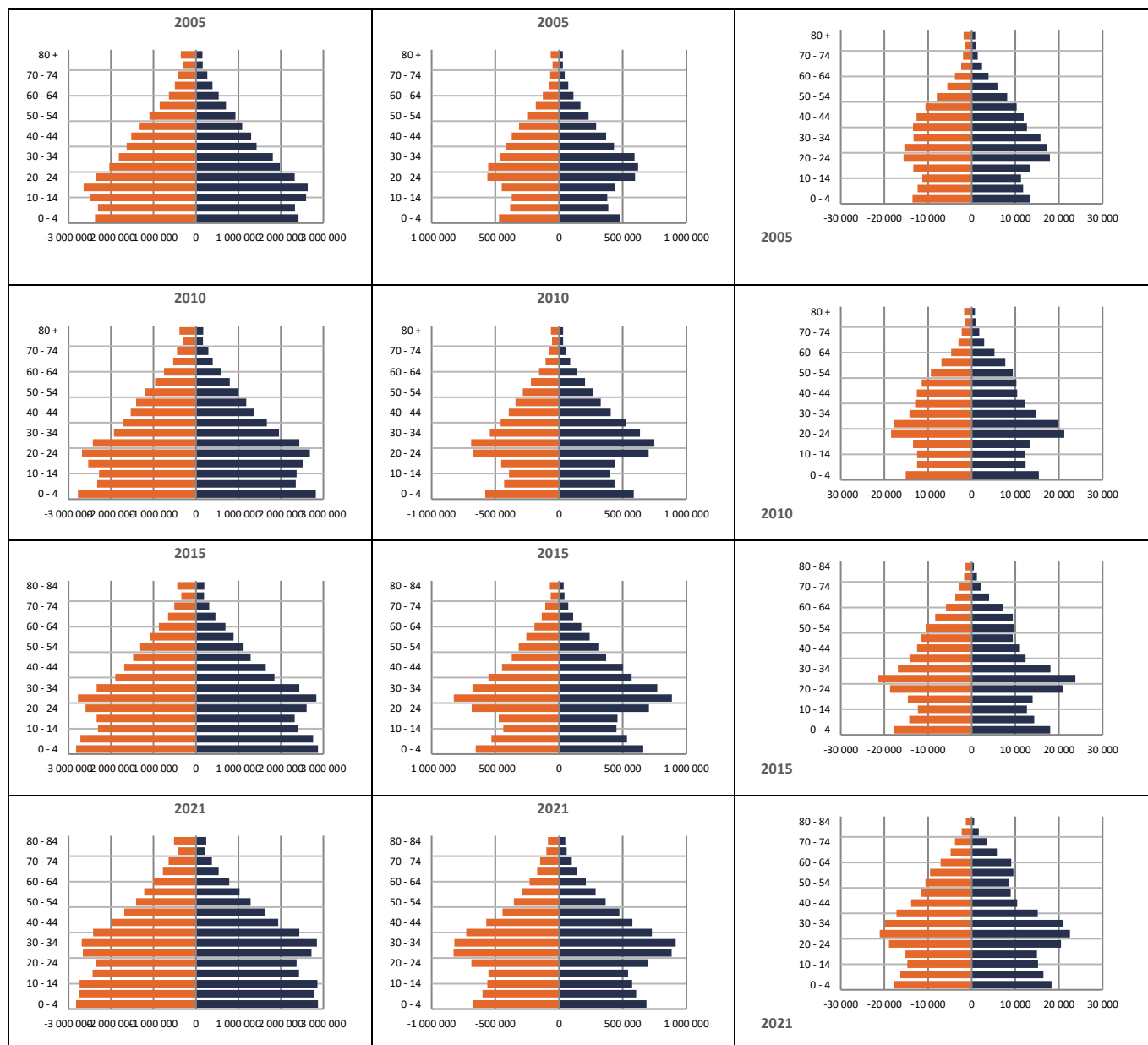


Source: Census 2011 / SDSA (MapAble 2020)

The figures below (Figure 2-1) show the comparative population structures between South Africa, Gauteng, and Mogale City Local Municipality and how they have changed since 2005. The national, provincial and local structure's overall profile is similar, especially in the later periods, with the national structure showing a slightly larger base. The national, provincial and local pyramids all show a large base in the younger age cohorts with a bulge for the working-age population, while this pattern is more pronounced locally. The Mogale City Local Municipality pyramids show the substantial economically active population and the large male group as described above. A unique feature of the Mogale City pyramid structure is the smaller male population from the 35 to 50 age cohorts.

Figure 2-1: Comparative population structure

South Africa	Gauteng	Mogale City
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Source: Quantec Regional Indicators 2021

b. The differences in population groups

Population groups need not be a central issue in development analysis. However, looking at the local population's composition might explain current dynamics based on historical population settlement patterns. Table 2-5 shows the population at various geographic levels in 2021. The figures show structural differences in composition between the various geographic levels and racial groups. For example, the black population group is the largest, and the Coloured population group is the smallest in the municipality representing only 0.78% of the population.

Table 2-5: Comparative population numbers by population group 2021

	South Africa		Gauteng		West Rand		Mogale City	
	Total	%	Total	%	Total	%	Total	%
Black population	48 734 600	81,42%	12 783 084	81,09%	795 432	83,70%	329 812	80,83%
Coloured population	5 232 220	8,74%	524 516	3,33%	21 992	2,31%	3 180	0,78%
Asian population	1 472 856	2,46%	464 099	2,94%	10 156	1,07%	8 546	2,09%
White population	4 412 519	7,37%	1 992 558	12,64%	122 803	12,92%	66 515	16,30%
Population total	59 852 195	100,00%	15 764 257	100,00%	950 382	100,00%	408 052	100,00%

Source: Quantec Regional Indicators 2021

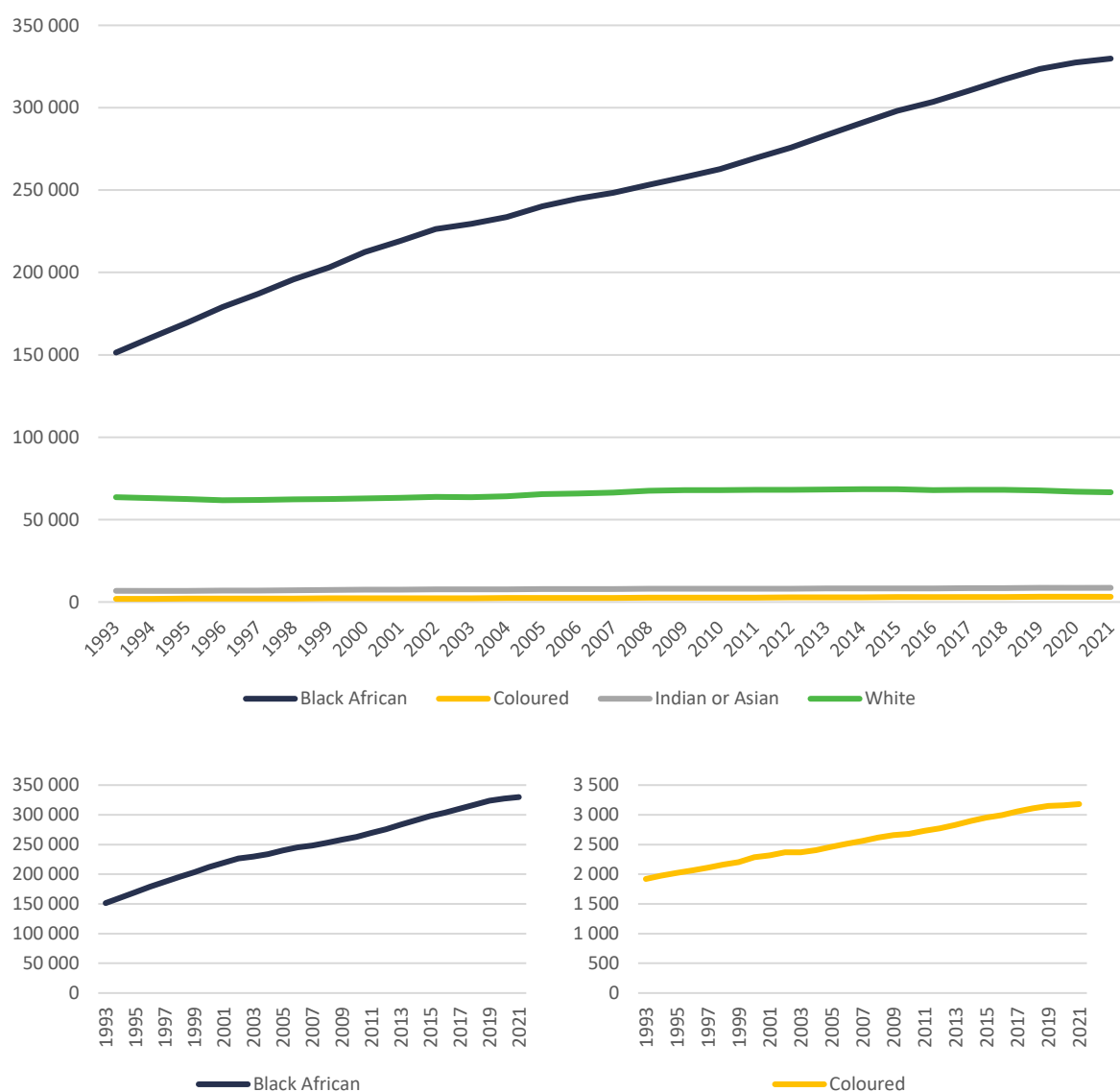
Table 2-6 below shows the municipality's population as it has changed over the last 26 years. The figures indicate substantial growth in the black population, and the other population groups are increasing marginally.

Table 2-6: Population groups

	1995	2000	2005	2010	2015	2021
Black	169 497	212 310	240 212	262 642	298 091	329 812
Coloured	2 021	2 284	2 463	2 680	2 955	3 180
Asian	6 851	7 428	7 829	8 055	8 279	8 546
White	62 492	62 903	65 438	67 825	68 452	66 515
Total	240 862	284 926	315 942	341 202	377 776	408 052

Source: Quantec Regional Indicators 2021

Figure 2-2 below illustrates these changes. Here the growth in the black population group is clearly shown. The coloured population is small but shows a similar growth trend to that of the black population. The Asian population group shows only marginal growth over the assessed period. The white population group is the only population group in the municipality that is seen to have peaked in 2015, and whereafter the group has experienced a decline in numbers.

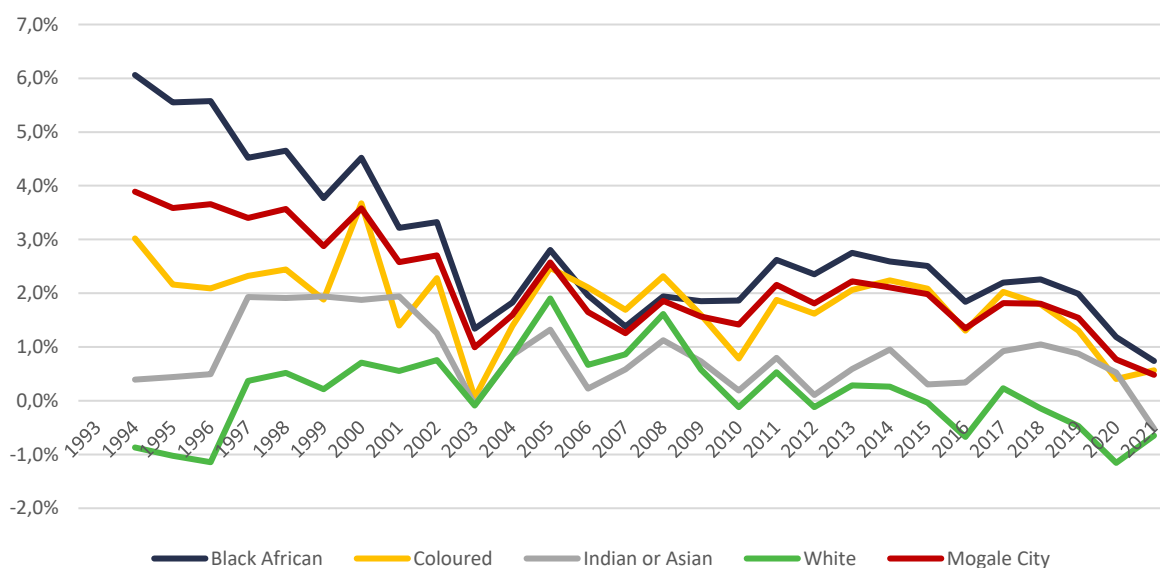
Figure 2-2: Population growth 1993 to 2021


Source: Quantec 2020

The figure confirms the assessment above. The change in the black population group dominates this figure because of their significant contribution to the total population. One can see that the white group's growth rate has declined, showing negative growth up to 1997, 2003 and since 2018, and this group currently has the lowest growth rate of negative 0.6%. The coloured and Asian groups had a positive growth rate over the assessed period, with a dip in 2003 experienced by all groups.

Figure 2-3 below shows the rate of change between the different population groups. The figure confirms the assessment above. The change in the black population group dominates this figure because of their significant contribution to the total population. One can see that the white group's growth rate has declined, showing negative growth up to 1997, 2003 and since 2018, and this group currently has the lowest growth rate of negative 0.6%. The coloured and Asian groups had a positive growth rate over the assessed period, with a dip in 2003 experienced by all groups.

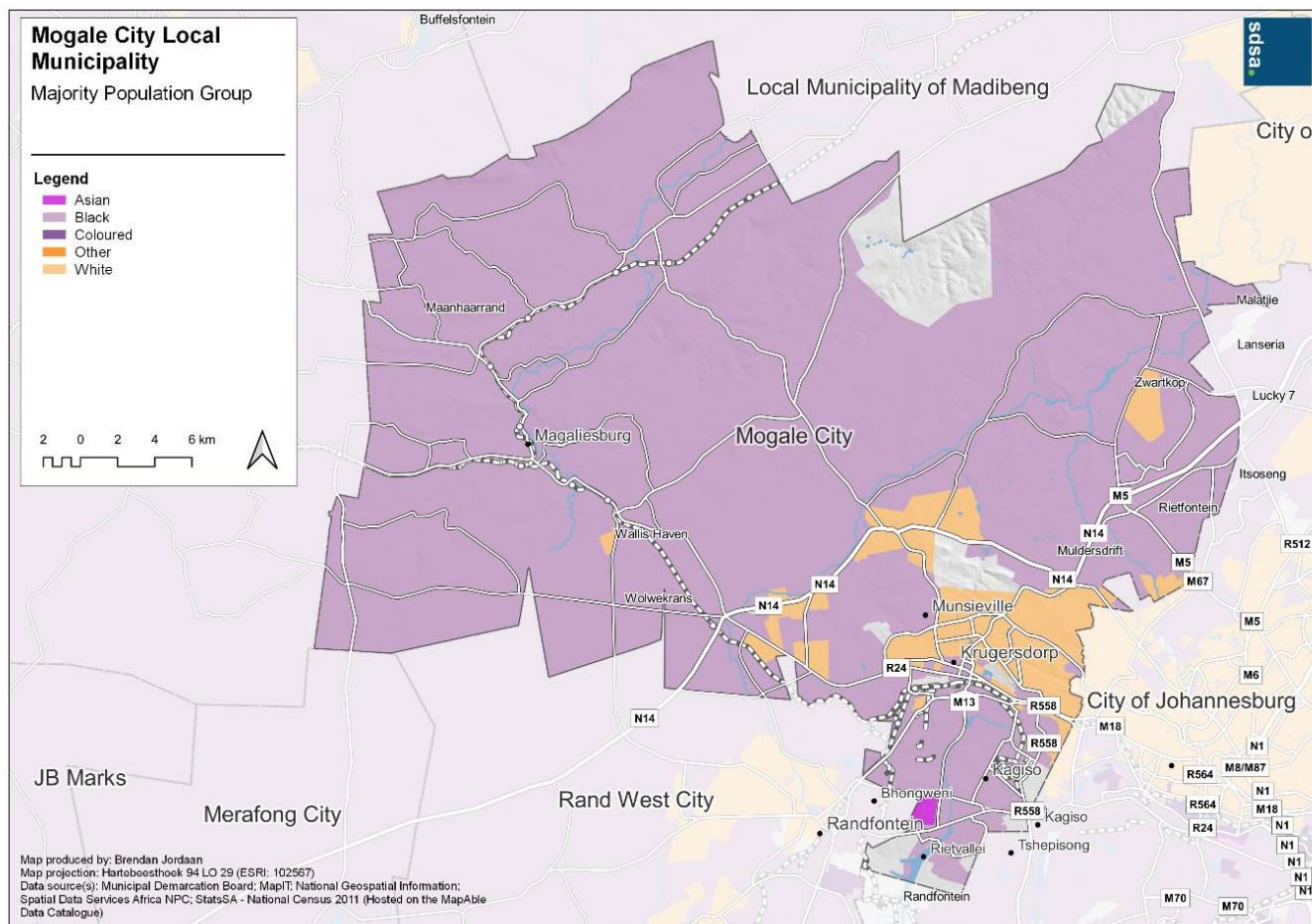
Figure 2-3 Population growth rates by population group from 1993 to 2021



Source: Quantec Regional Indicators 2021

Map 2-5, illustrates the spatial distribution of the population majorities in the municipality.

Map 2-5: Population majority 20



Source: Census 2011 / SDSA (MapAble 2020)

c. Language groups

Language groups display clear spatial patterns in South Africa. These patterns and distributions have ramifications for education, labour markets, and labour relations. However, language's impact on the demand for community services, infrastructure, and social facilities is insignificant for the planner.

Table 2-7 and Figure 2-4 show that structurally, the different language groups have remained the same since 1996, except for the Tswana language group, which has seen a steep rise since 1996. Tswana remains the dominant language group in the municipality.

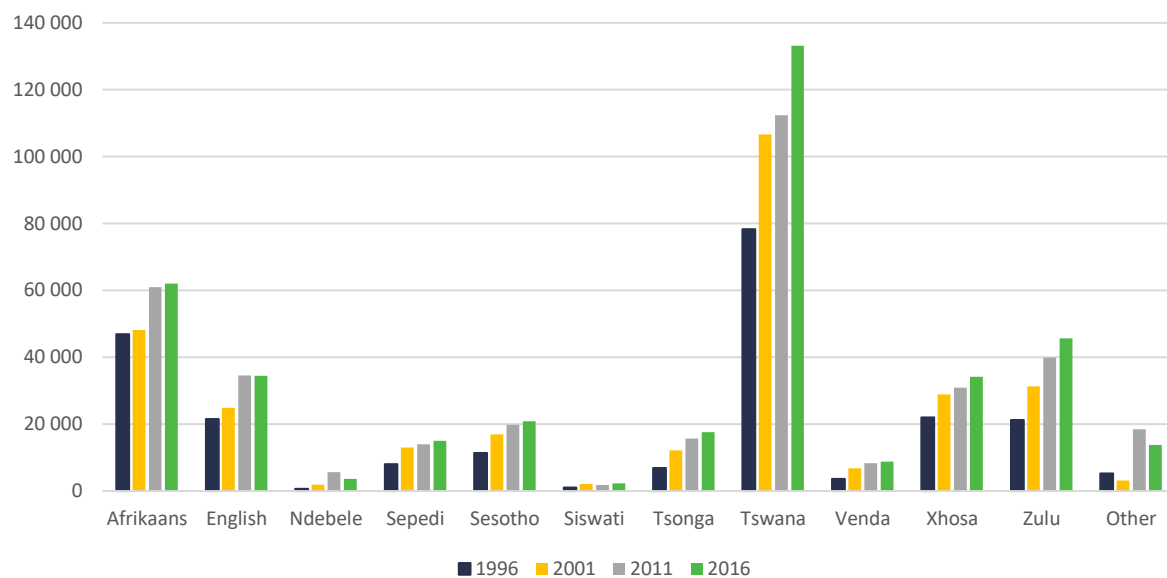
Table 2-7: Language groups

	1996	2001	2011	2016
Afrikaans	46 943	48 189	60 954	62 051
English	21 519	24 907	34 540	34 488
Ndebele	682	1 913	5 665	3 621
Sepedi	8 066	13 021	13 972	15 022
Sesotho	11 405	16 980	19 795	20 852
Siswati	1 093	2 072	1 831	2 302
Tsonga	6 923	12 135	15 655	17 591
Tswana	78 262	106 598	112 416	133 143
Venda	3 621	6 820	8 360	8 766
Xhosa	22 004	28 925	30 961	34 194

Zulu	21 233	31 274	39 873	45 628
Other	5 286	3 154	18 515	13 754
Total	227 037	295 988	362 536	391 411

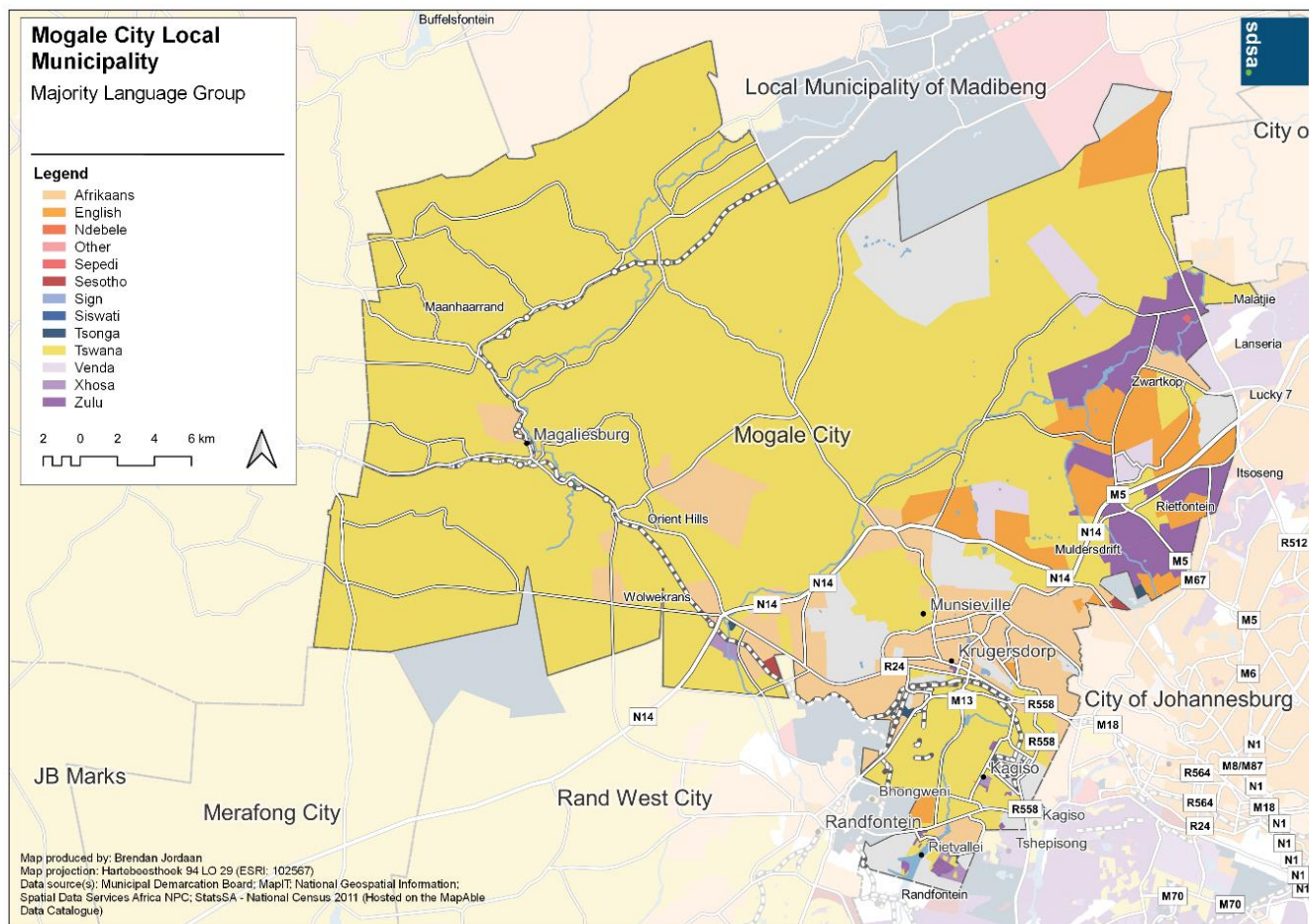
Source: Census 1996, 2001, 2011/ Community Survey 2016

Figure 2-4: Change in language groups



Source: Census 1996, 2001, 2011/ Community Survey 2016

Map 2-6: Majority language group



Source: Census 2011 / SDSA (Mapable 2020)

d. Migration

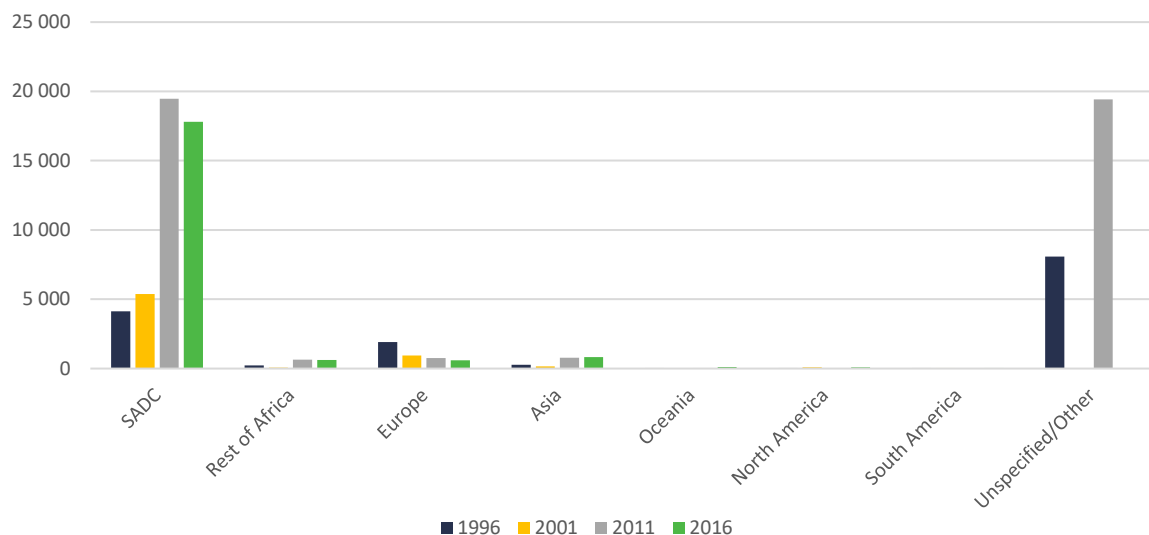
The open local economy and migration are important issues in a country where urbanisation is pivotal in long-term development strategies. Table 2-8 below shows the country of origin of residents. Migration from other areas is small, but people from other SADC countries are the leading contributor to migrants in the municipality. Map 2-7 illustrates the distribution of people from SADC countries.

Table 2-8: Migration - country of origin

Migration	1996	2001	2011	2016
RSA Origin	212 284	289 322	321 384	371 285
SADC	4 124	5 383	19 459	17 817
Rest of Africa	217	67	633	612
Europe	1 908	936	770	601
Asia	283	155	785	821
Oceania	41	0	49	105
North America	45	80	15	100
South America	48	45	24	42
Unspecified/Other	8 087	NA	19 417	28
Total	227 037	295 988	362 536	391 411

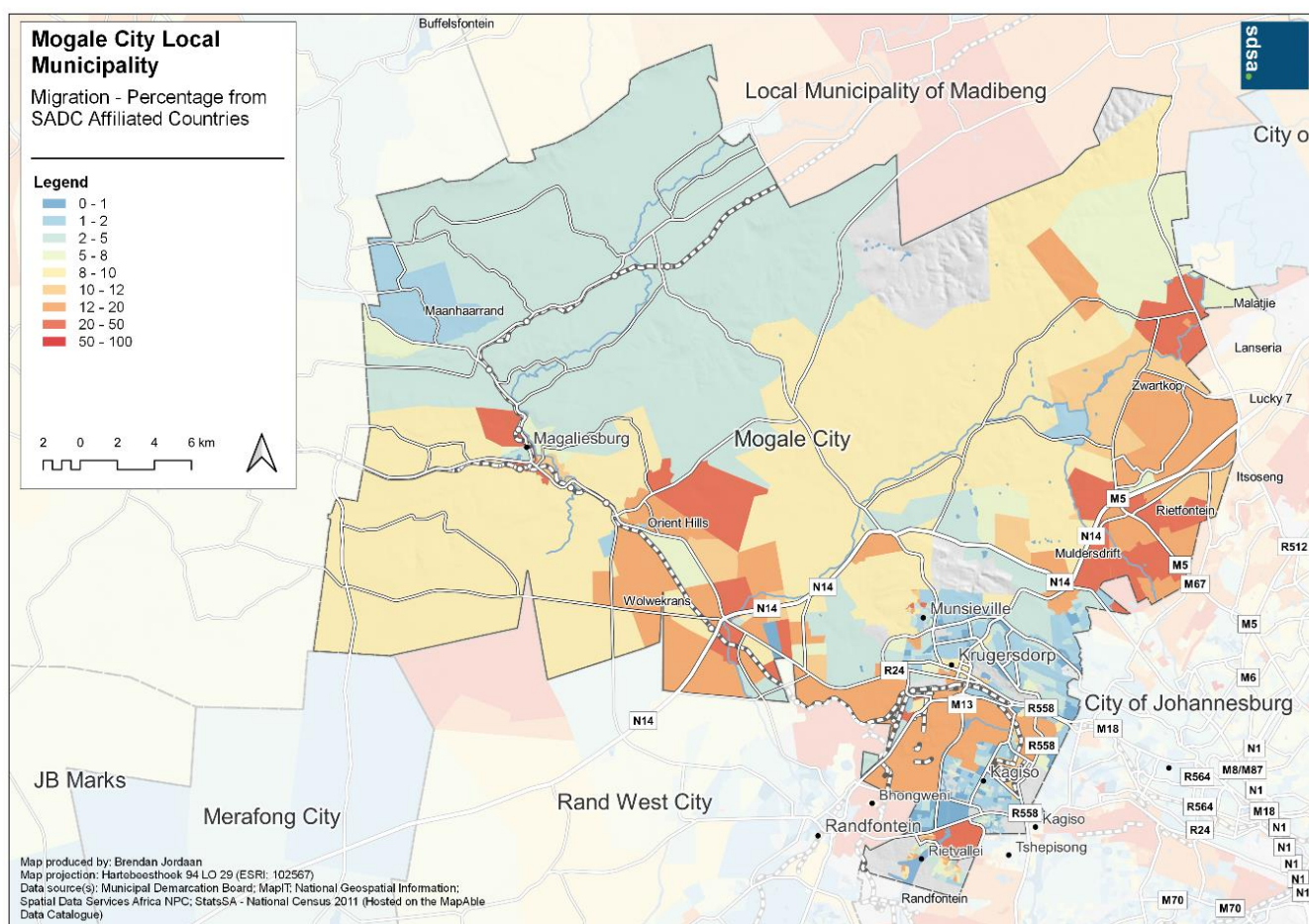
Source: Census 1996, 2001, 2011/ Community Survey 2016

Figure 2-5: Migration from outside South Africa



Source: Census 1996, 2001, 2011/ Community Survey 2016

Map 2-7: % Migration from SADC countries



Source: Census 1996, 2001, 2011/ Community Survey 2016

Also significant is the movement of people within South Africa to the area. The flow of people from other provinces has been small and decreased since 1996, with migrants from the Northwest Province decreasing the most from 2011

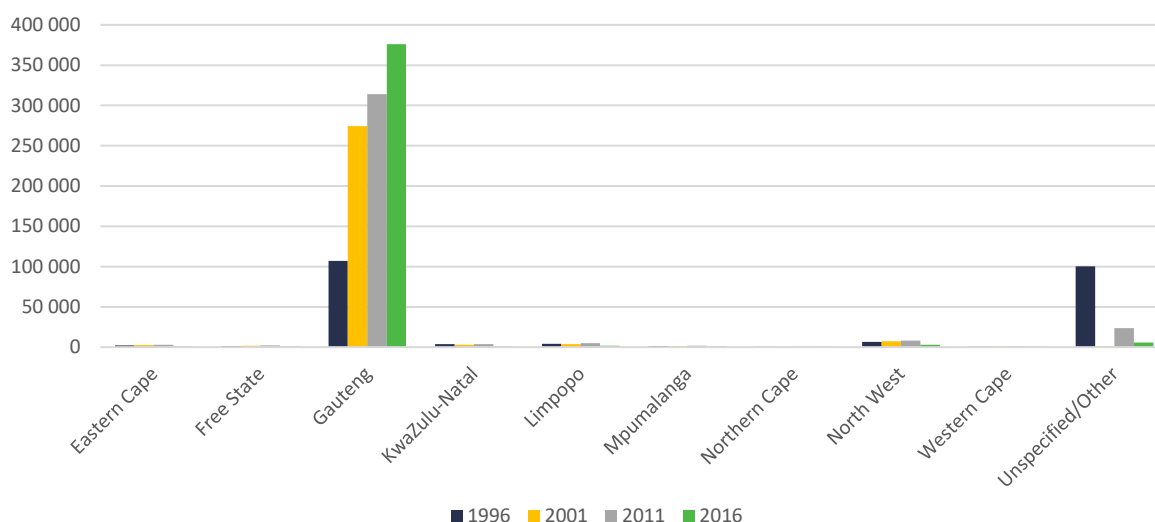
to 2016. There are apparent inconsistencies in the data that are difficult to explain. Table 2-9 and Figure 2-6 illustrate this.

Table 2-9 Province of previous residence

Migration	1996	2001	2011	2016
Eastern Cape	2 124	2 487	3 044	1 082
Free State	1 394	1 580	2 119	780
Gauteng	106 916	274 244	314 049	376 069
KwaZulu-Natal	3 586	3 000	3 583	1 044
Limpopo	3 945	3 663	4 772	1 796
Mpumalanga	1 225	1 432	1 667	919
Northern Cape	393	461	575	415
North West	6 378	7 109	8 187	3 039
Western Cape	636	830	1 090	538
Unspecified/Other	100 441	1 181	23 450	5 728
Total	227 037	295 988	362 536	391 411

Source: Census 1996, 2001, 2011/ Community Survey 2016

Figure 2-6: Migration change from other provinces in South Africa



Source: Census 1996, 2001, 2011/ Community Survey 2016

e. The spatial dynamics of the population

The sections above dealt with the demographic profile of the municipality. However, with the CEF's spatial targeting aim, it is essential to give a perspective of people's spatial distribution and where changes occurred over time.

The table illustrates how spatial variances occur and why it is vital to consider population change's spatial dynamics. The following maps show where changes occurred. The first essential element is that population growth occurred in particular localities. It is mainly associated with the more critical nodal areas and areas related to access to employment opportunities.

One should note that the population growth rate in Mogale City LM (2.9%) is above the rate of growth for South Africa (1.7%).

Table 2-10: Population change from 1996 to 2020

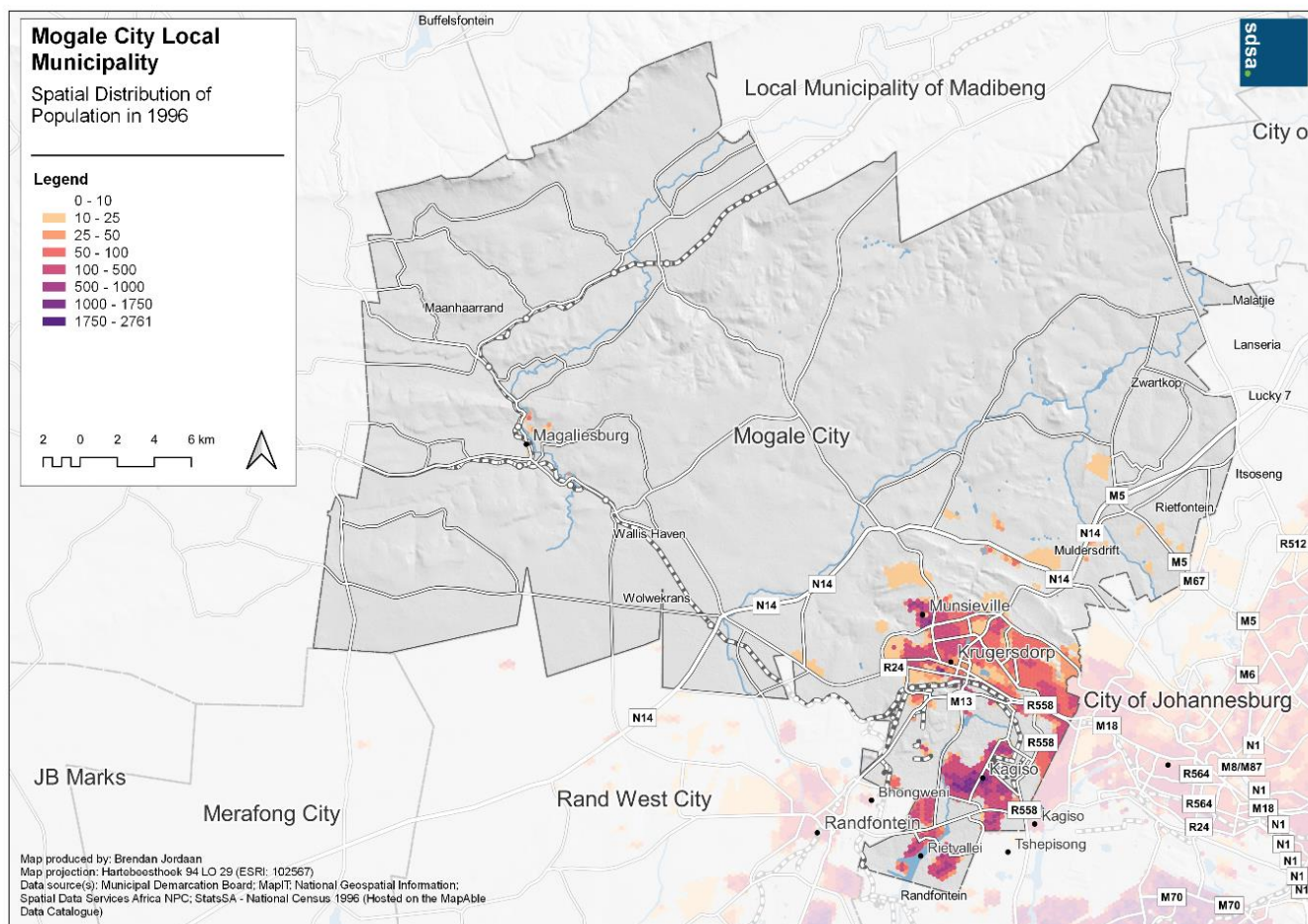
Population characteristics

Population (1996):	226 341
Population (2020):	449 537
Population Change	223 196
Average annual population growth rate	2.9%
Population Density (People/Ha):	3.34

Source: SDSA (MapAble 2020)

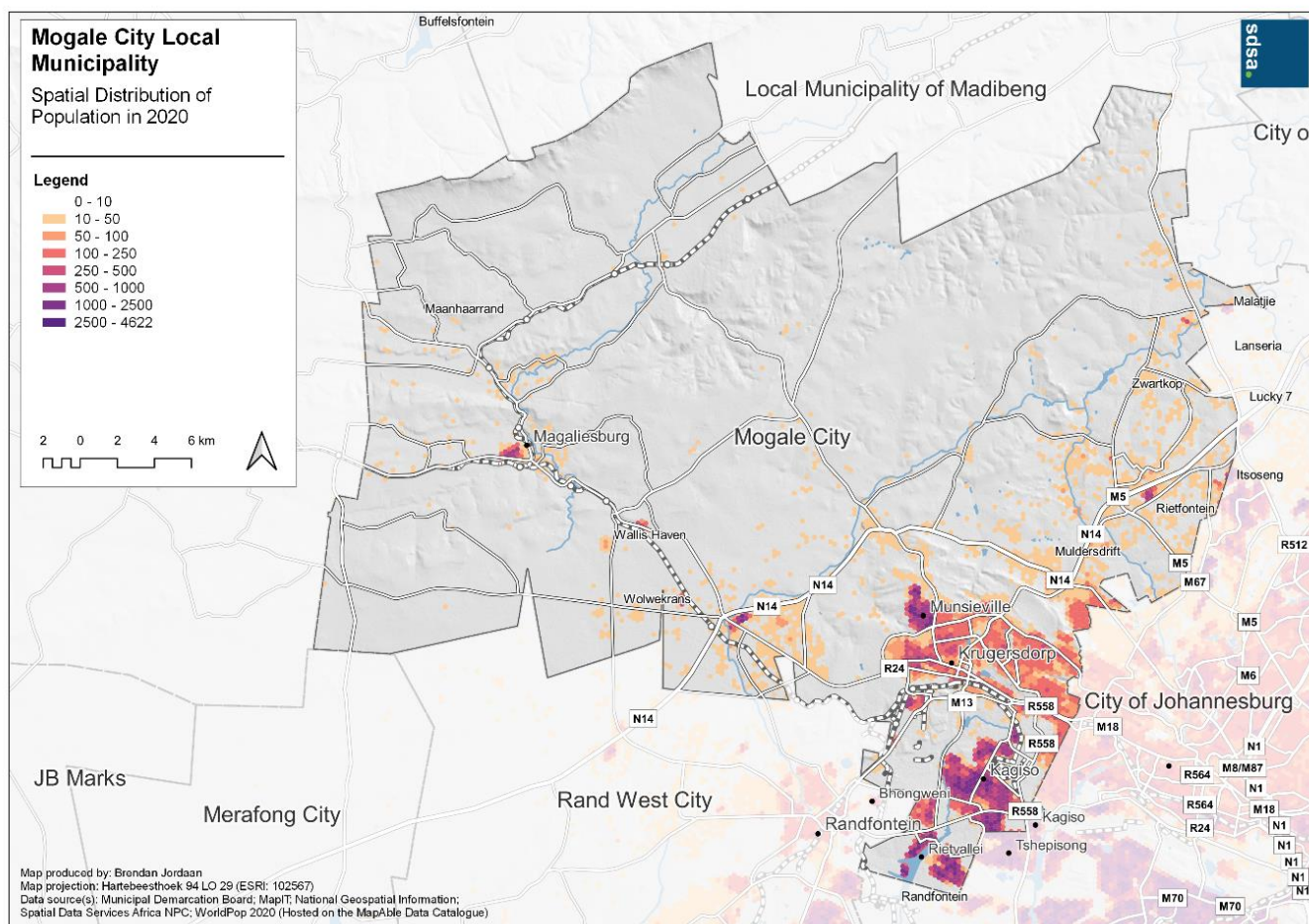
The interesting thing to notice is the extent of depopulation on the periphery of certain urban areas, especially around the towns of Krugersdorp, Munsieville and Kagiso. Most of the municipal growth occurred in the urban areas of the towns Kagiso, Rietvallei and Munsieville. This can be seen on Map 2-8, Map 2-9 and Map 2-10 below.

Map 2-8: The spatial distribution of population in 1996



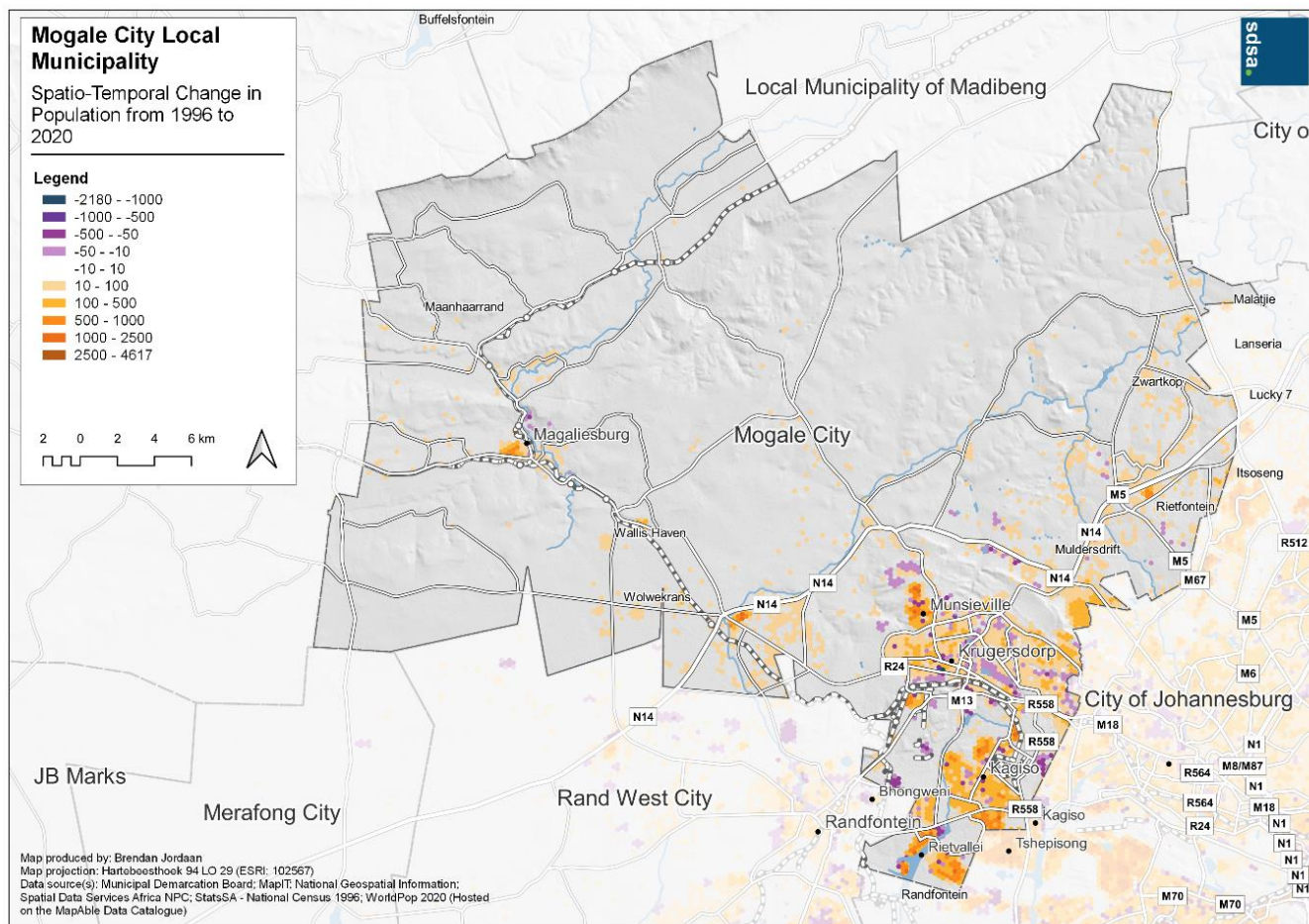
Source: SDSA (MapAble 2020)

Map 2-9: The spatial distribution of the population in 2020



Source: SDSA (MapAble 2020)

Map 2-10: Net population changes between 1996 and 2020



Source: SDSA (Mapable 2020)

f. The CSIR functional distribution of population and households

The CSIR developed a functional town and settlement typology to provide a finer-grained but nationally comparative overview of regional-scale settlement patterns and trends. The latter provides a mechanism to identify, calculate, and analyse development information and trends in the range of towns, cities, and high-density rural settlements across South Africa.

The map below shows the distribution of these functional areas in Mogale City, summarising the key demographic attributes per functional area.

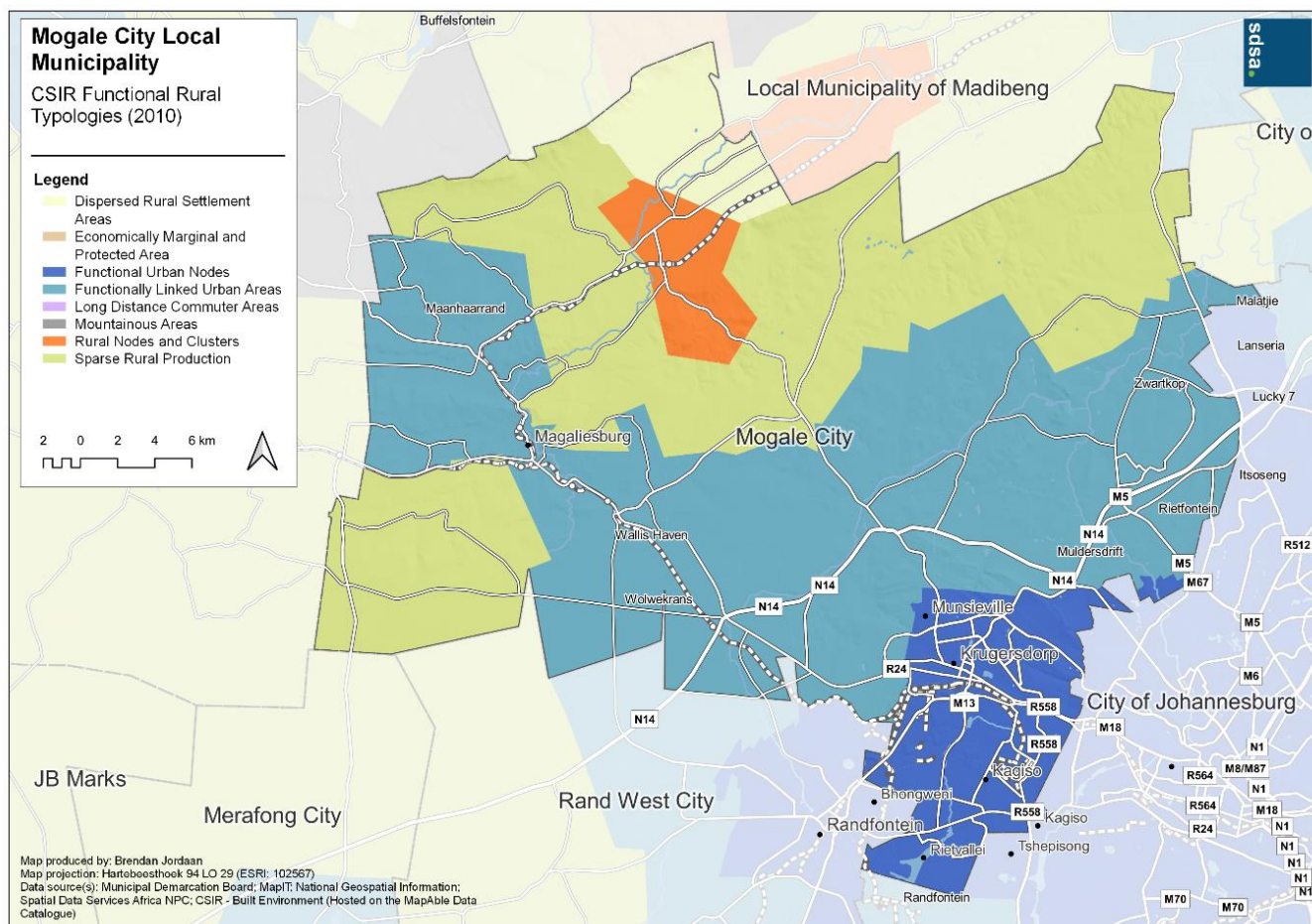
Table 2-11: The functional distribution of population and households per CSIR functional area

	Population 1996	Population 2020	Distribution	Population change 1996 to 2020	Change p/a 1996 to 2020	Area (ha)	Population density 2020 (p/ha)
Dispersed Rural Settlement Areas	921	1 056	0,23%	134	0,6%	5 283	0,20
Economically Marginal and Protected Area	0	0	0	0	0	0	0
Functional Urban Nodes	191 176	361 575	80,40%	170 399	3,7%	13 856	26,09
Functionally Linked Urban Areas	26 863	80 293	17,85%	53 429	8,3%	62 808	1,28
Long Distance Commuter Areas	0	0	0	0	0	0	0
Mountainous Areas	0	0	0	0	0	0	0
Rural Nodes and Clusters	1 076	964	0,21%	-112	-0,4%	4 568	0,21
Sparse Rural Production	6 504	5 860	1,30%	-644	-0,4%	47 934	0,12
Grand Total	226 541	449 747	100,00%	223 207	4,1%	134 450	3,35

Source: BCGA

The data highlights the importance of assessing the municipality in terms of functional areas. The CSIR functional areas are broad-based, highlighting the significant differences between urban nodal and functionally linked urban areas.

Map 2-11: CSIR functional areas 2018



Source: CSIR

g. Population change and growth

Assessing population change in a municipal area is challenging for several reasons:

- Municipalities function in an integrated environment where changes at national, provincial, and neighbouring areas directly impact local growth.
- Data sources differ regarding baseline data, resulting in outcomes that complicate comparative assessments.
- With a few exceptions, municipal population figures disaggregate higher-order data. Between censuses, mid-year population estimates are the only available sources at the local level. Therefore, most data sets use StatsSA's mid-year population estimates as a benchmark.

- Long-term projections (ten years and longer) are subject to high uncertainty levels because many factors drive local demographic changes.
- Interventionistic policies from the government are often unpredictable and focus on deliberately changing historical trends. This increases the level of uncertainty in outcomes.

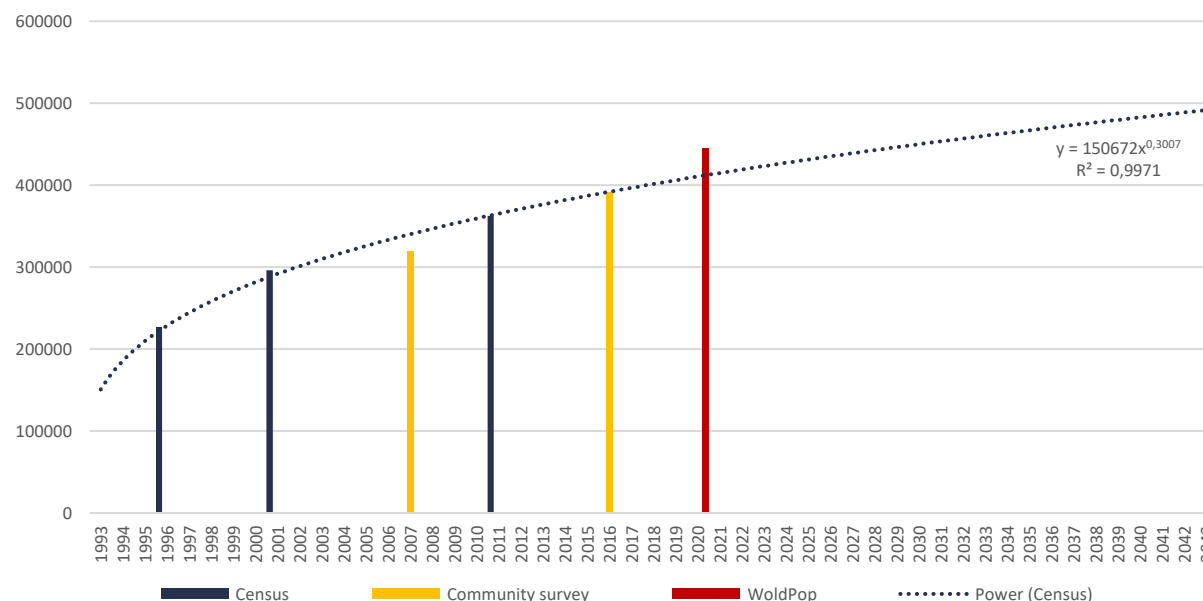
Notwithstanding these challenges, it remains essential to project and estimate future population and household numbers. This is because population and household changes drive the long-term demand for land and services.

The historical perspective on population and household changes is essential. It is also the basis for determining future household and population levels. However, countless factors impact population and household growth. Long-term estimates and the scale of a municipality remain challenging due to the open nature of the development systems and the free movement of people and access to goods and services across municipal boundaries. Therefore, any long-term projection must only be indicative, and changes must be monitored continuously. Population and household growth ultimately determine the services demand in the municipality.

The next series of graphs show how the different available data sets relate. After using trend analysis, the approach builds from the available official data and then adds the commercial datasets to reach a workable scenario. Population forecasts are problematic because most data set benchmarks back to StatsSA mid-year population estimates, resulting in very similar long-term trends.

Figure 2-7 below starts by looking at the primary StatsSA data sources. These include the 1996, 2001, and 2011 census data, the 2007 and 2016 Community Surveys and the 2020 WorldPop data. Applying a trend line to the Census data, an almost perfect correlation occurs. Following this growth path, one sees an increase in the municipality's future population, reaching just under 500 000 people by 2043. There is no certainty which of these figures is more probable and thus underlines the importance of continuous growth monitoring.

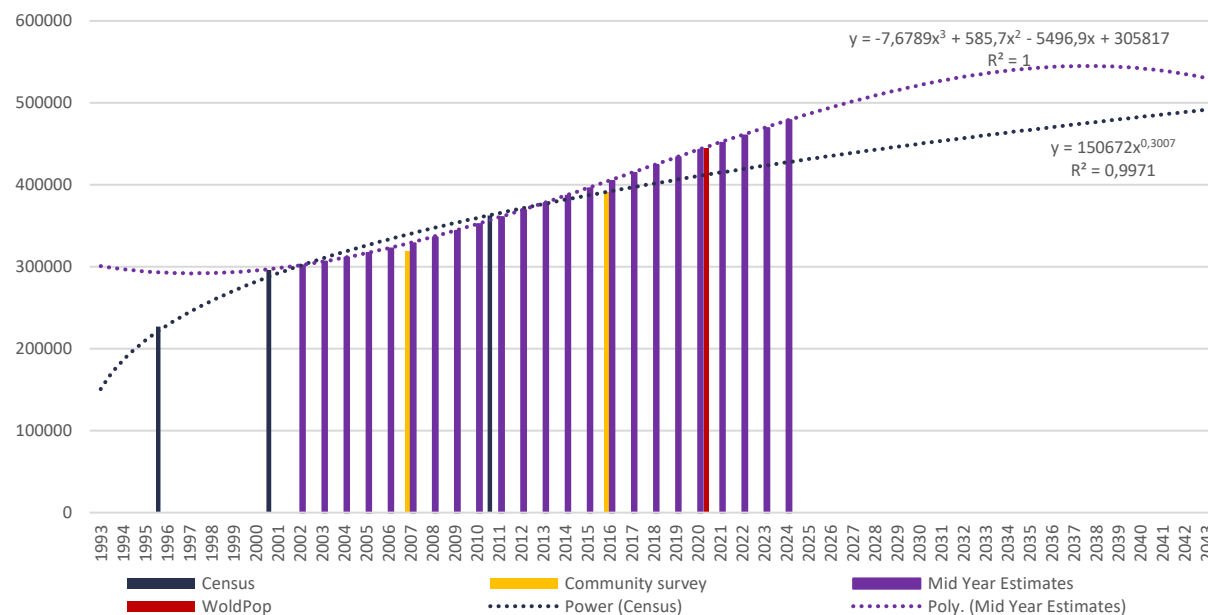
Figure 2-7: Census and Community Survey outcomes



Sources: Census 1996,2001,2011; Community survey 2007,2016

Figure 2-8 below shows the results that include the mid-year population estimates of StatsSA. The mid-year estimates data and the trendline show a more robust growth trend than the previous assessment. The trendline has a correlation of 1 and predicts a population of 530 267 in 2043. Based on this, one can assume that a future estimate based only on the three census figures might present inaccurate results.

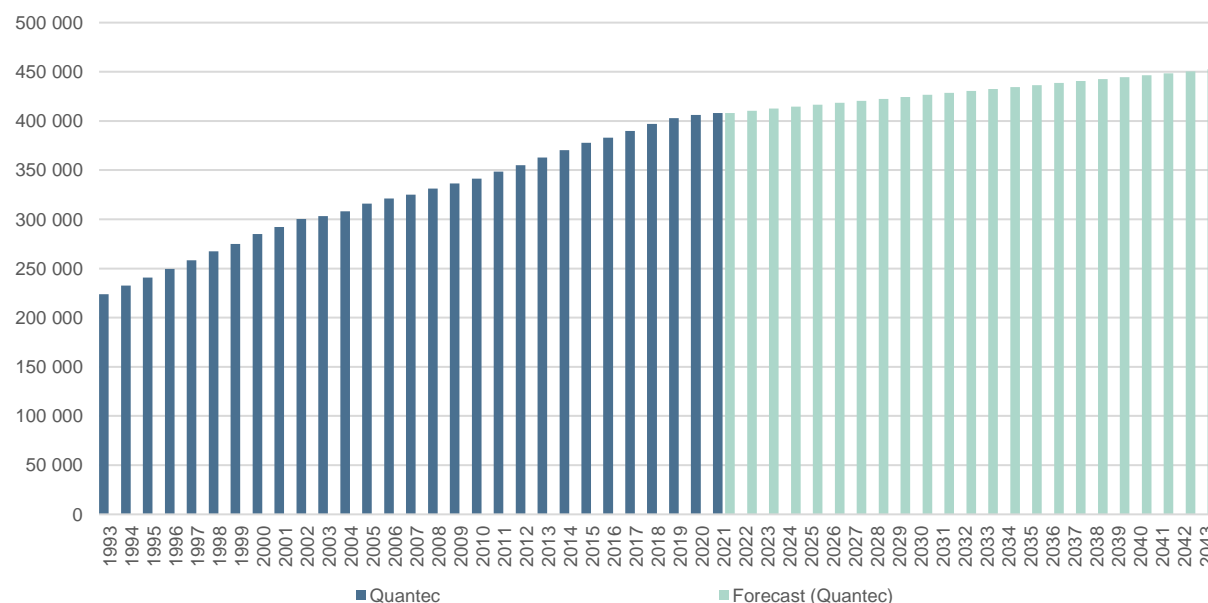
Figure 2-8: Projections based on StatsSA data



Sources: Census 1996,2001,2011; Community survey 2007,2016, StatsSA 2019 Mid-year population estimates

Figure 2-9 below includes the Quantec Regional indicators data. The Quantec Regional indicators data provides the most extended set of historical data. It is interesting to note the different trends between the data sets and that the Quantec Regional indicators data does not correlate with StatsSA's mid-year population estimates. This is unexpected as the Quantec Regional indicators data benchmarks on the mid-year population estimates.

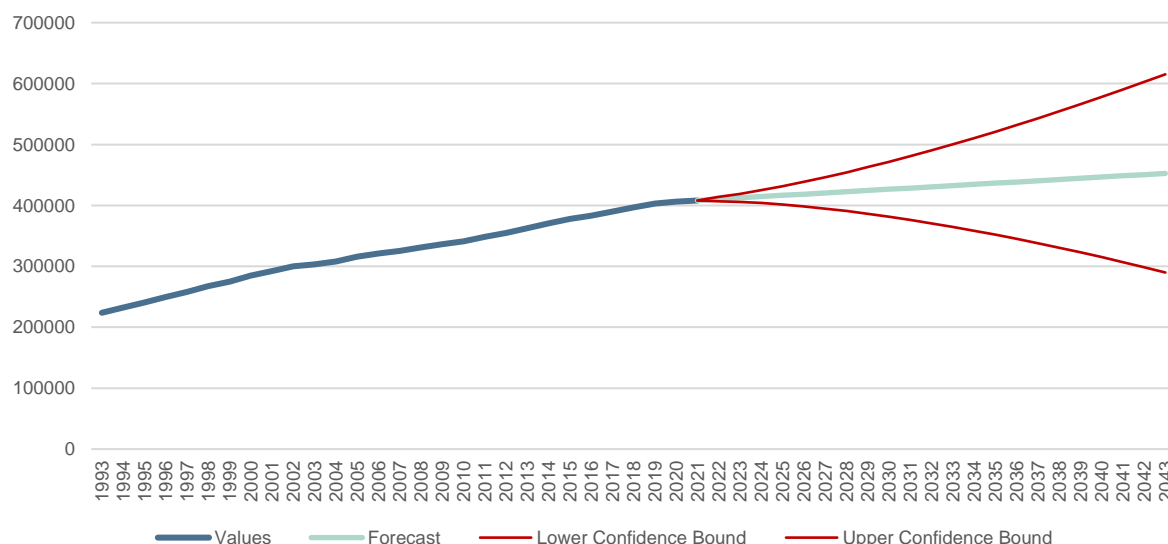
Figure 2-9: Quantec population data



Source: Quantec 2020

Using the Quantec Regional indicators data and applying a linear forecast, the following forecast shows the population levels until 2043 within a 95% confidence limit. Figure 2-10 below shows the results.

Figure 10: Forecasting population using Quantec Regional Indicators data

Figure 2-10: Forecasting population using Quantec Regional Indicators data


Source: Quantec Regional Indicators 2021/SDSA 2021

The forecast indicates that the expected population in 2043 is 452 525. Although this is statistically within 95% confidence levels, the upper and lower confidence bounds are different but possible. The variation in a 95% confidence between the upper and lower limits highlights the importance of continuously monitoring population changes and trends.

Table 12 below shows the projected population figures. The Census and Mid-year population estimates forecast trends show growth in the expected population in 2043 at 491 472 and 530 267, respectively. At the same time, the Quantec data forecast is lower than both previously mentioned indicators, with the 2043 predicted population at 452 525. This is a difference of about 40 000 people in the estimated population of 2043 between the different data sets. There are various challenges with midyear population estimates, and StatsSA did not release updated estimates at the municipal level for 2021.

Table 12: Projected population numbers

Table 2-12: Projected population numbers

	2020	2021	2025	2030	2035	2040	2043
Quantec Regional Indicators forecast	406 091	408 052	416 474	426 488	436 502	446 516	452 525
Census Trend	410 386	414 740	431 171	449 856	466 892	482 594	491 472
Mid-year population estimates trends	442 525	451 700	486 290	521 329	541 883	542 194	530 267

2.6.2 Household characteristics

a. Reported household numbers

Household numbers are usually derived from the population. This gives rise to density ratios and household size. The number of households is essential in determining the overall demand for infrastructure services and housing. Household density is an essential indicator of settlement efficiency and is vital in urban planning and development strategies. In addition, household size impacts the extent of consumption of goods and services. One should note that housing support strategies have affected household formation to the extent that there are often different rates of change between households and populations. According to census and community survey data, the basic household profile for the assessment area is shown in Table 2-13 below. Table 14 shows the number of households per population group, according to Quantec data.

Table 2-13: Total households, size and density

	1996	2001	2011	2016
Total households	62 330	91 487	117 248	149 980
Household density (households/ha)	0.13	0.68	0.87	1.11
Ave household size	3.64	3.24	3.09	2.61

Source: Census 1996, 2001, 2011/ SDSA (MapAble 2020)

Table 2-14: Number of households by population group

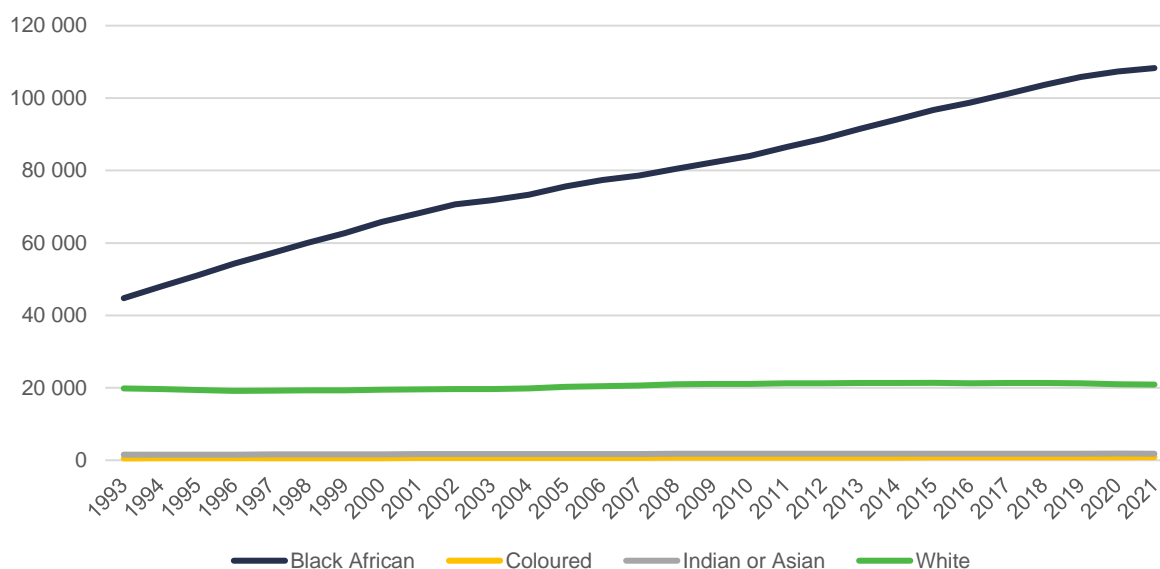
	1995	2000	2005	2010	2015	2020	2021
Black Households	51 022	65 777	75 612	83 998	96 714	107 312	108 280
Coloured households	535	608	660	724	803	864	870
Asian households	1 554	1 668	1 741	1 770	1 799	1 850	1 838
White households	19 395	19 438	20 256	21 089	21 377	20 983	20 860
Households total	72 505	87 491	98 269	107 581	120 693	131 010	131 848

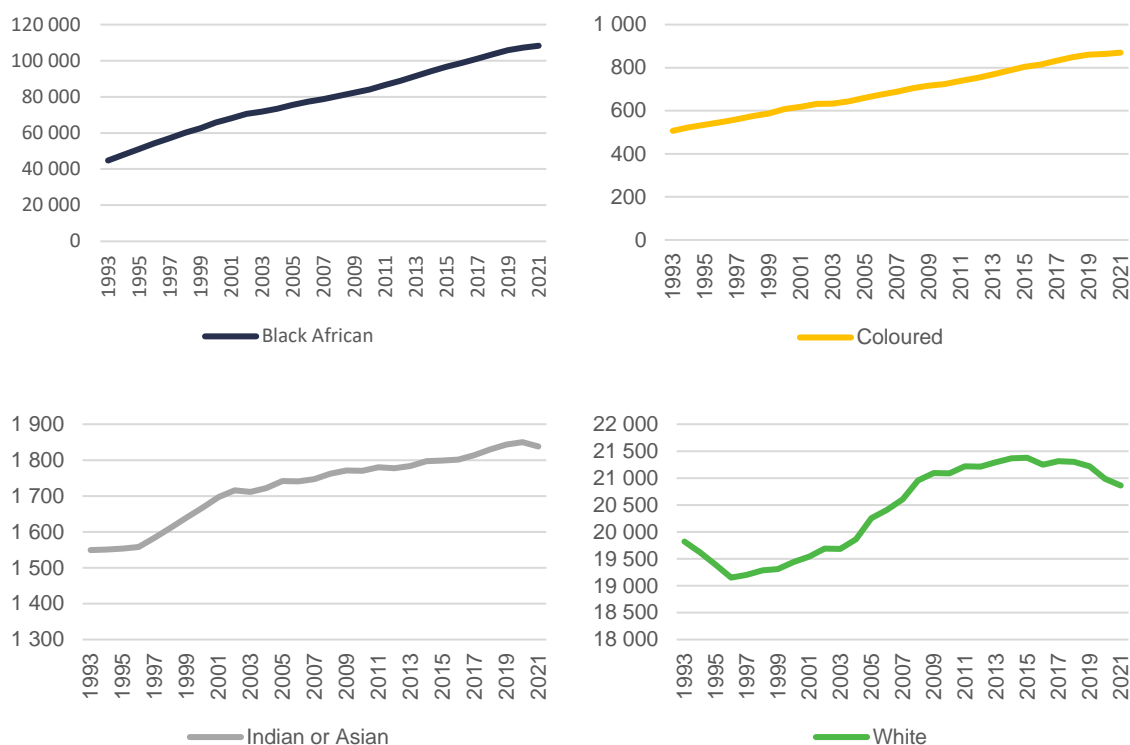
Source: Quantec Regional Indicators 2021

b. Household growth trends

As shown in Figure 2-11 below, household trends are broadly the same as for the population. This is also true for the following graph showing the growth rates (Figure 2-12). However, the change dynamics in population and households are not precisely the same. Several essential aspects emerge when the two data sets are used to show household sizes and household size changes.

The number of black households has grown significantly and still shows the most robust growth of all population groups. The white households have increased over the assessed period but have stagnated and started showing a decrease in the last couple of years. Coloured households have seen consistent growth over the years, and Asian households have seen a sharp increase from 1997 to 2003, but the household numbers remain low for this population group.

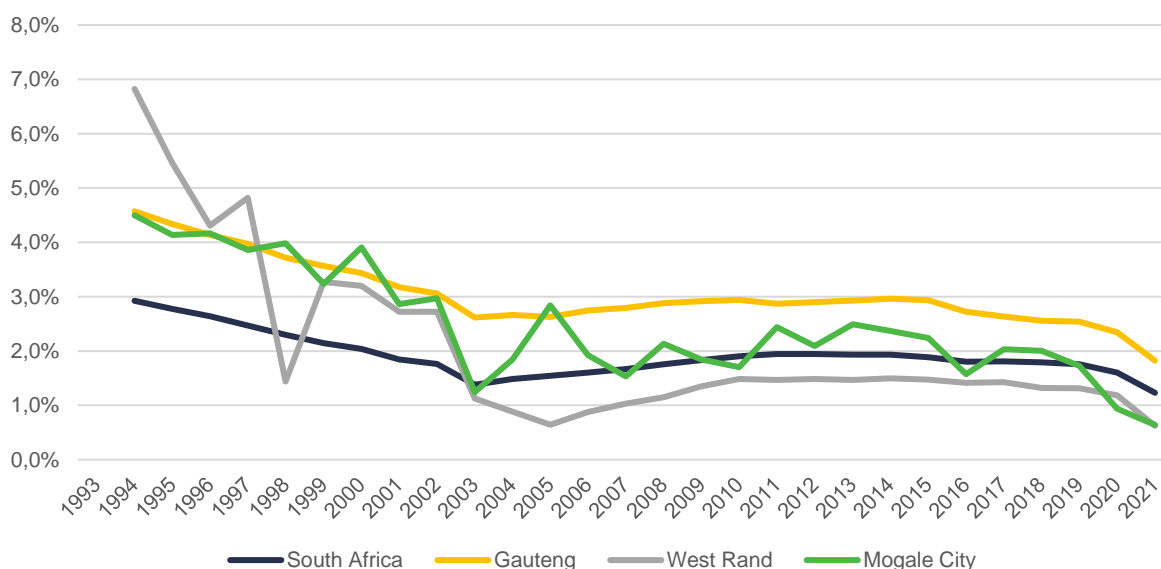
Figure 2-11: Household growth from 1993 to 2021




Source: Quantec Regional Indicators 2021

The corresponding growth rates are shown in Figure 2-12 below. The graph shows a similar trend for the country, province, district, and municipality, with them all showing a drop in recent years.

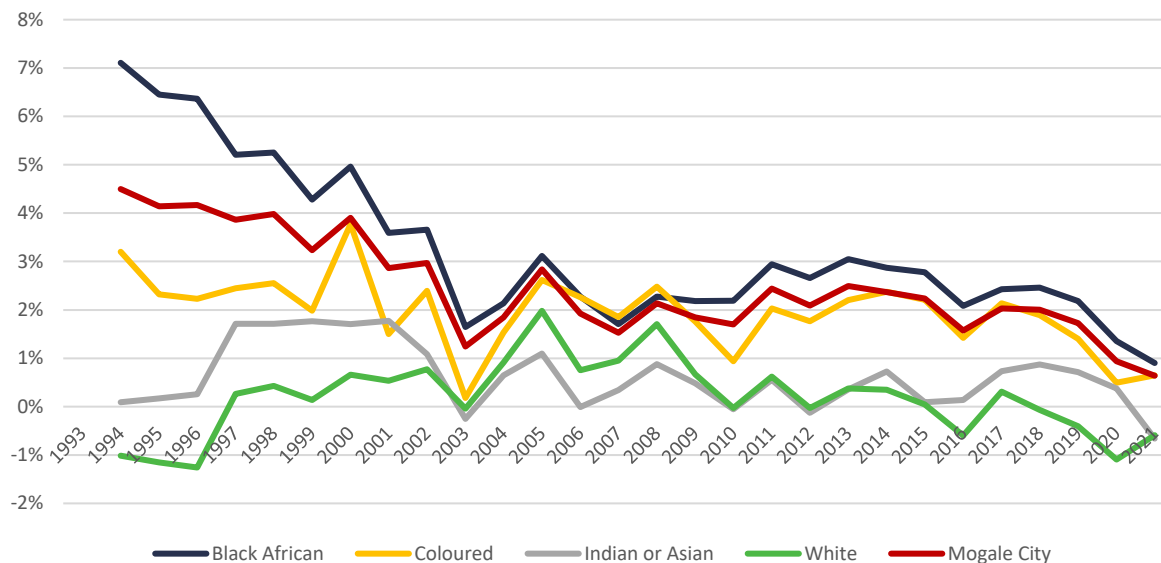
Figure 2-12: Comparative household growth rates from 1993 to 2021



Source: Quantec Regional Indicators 2021

Figure 2-13 below confirms the growth rates and compares the municipality's household growth rates per population group. The black population group has the most robust growth in the municipality. The coloured group experienced a positive growth rate over the assessed period, with drops in 2003 and 2020 and is currently at 0.6%. The white population group has had a mostly positive growth rate, with a negative growth rate since 2018 and had a growth rate of negative 0.5% in 2021. The Asian population group experienced a similar trend as the white population with a large drop in growth since 2020 and has a negative growth rate of 0.6%, the lowest of the municipality.

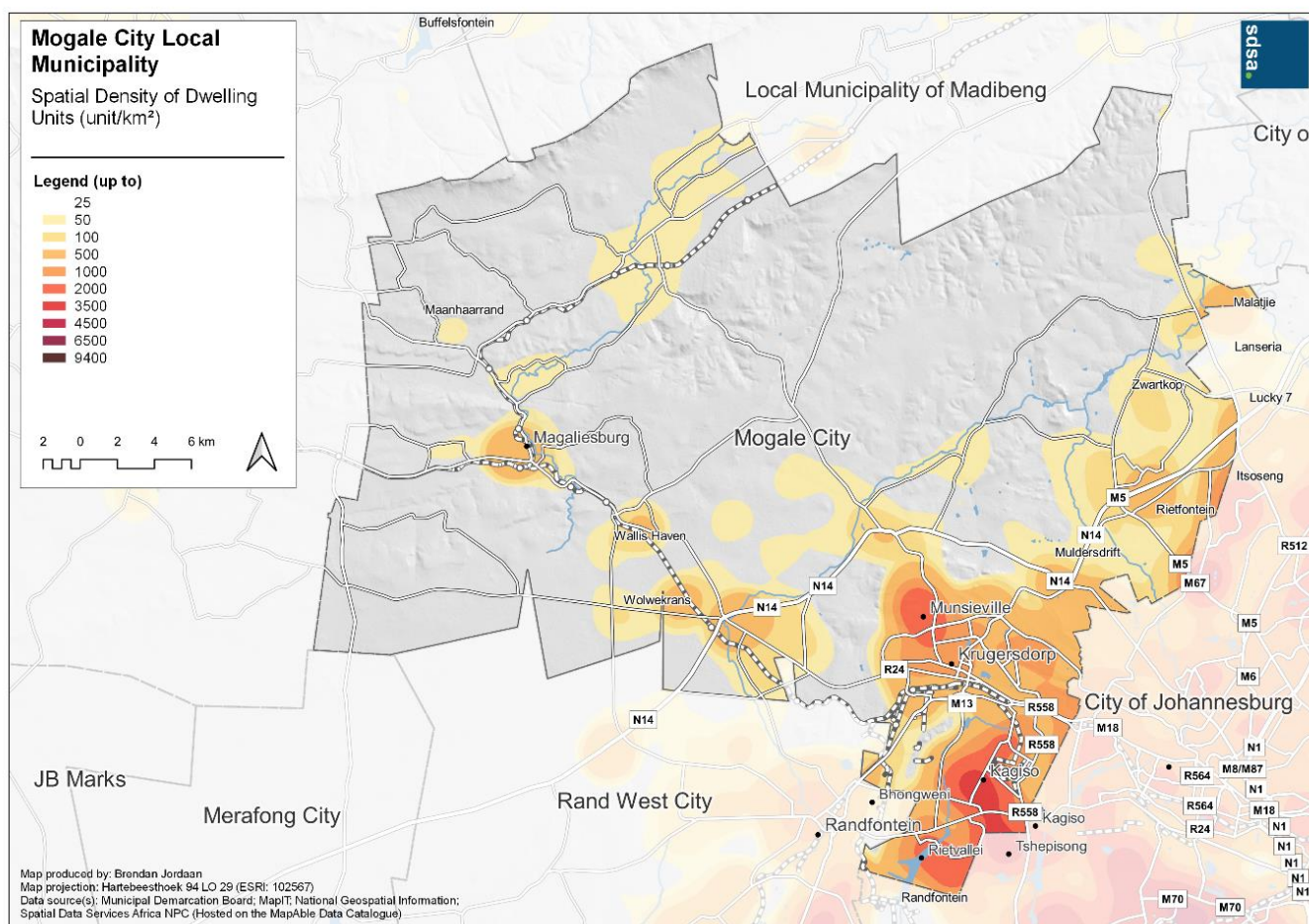
Figure 2-13: Household growth rates in municipality 1993 to 2021



Source: Quantec Regional Indicators 2020

Map 2-12 below shows household densities in the municipality at a 2km kernel density. As expected, the overall densities follow a similar pattern to the population's spatial distribution. The highest densities are in the towns of Kagiso, Rietvallei and Munsieville.

Map 2-12: Household densities - Dwelling Units per km2 (2km Kernel)



Source: SDSA (MapAble 2020)

c. Household size

Household size is an important indicator. In demographic terms, it relates to the stages of the demographic cycle, and decreasing household sizes is also an indicator of improving socio-economic conditions. However, increasing household sizes may also indicate economic stress leading to overcrowding and bigger households. Decreasing household sizes might also result from government housing programs that, in effect, encourage large family units to split up to access subsidised housing.

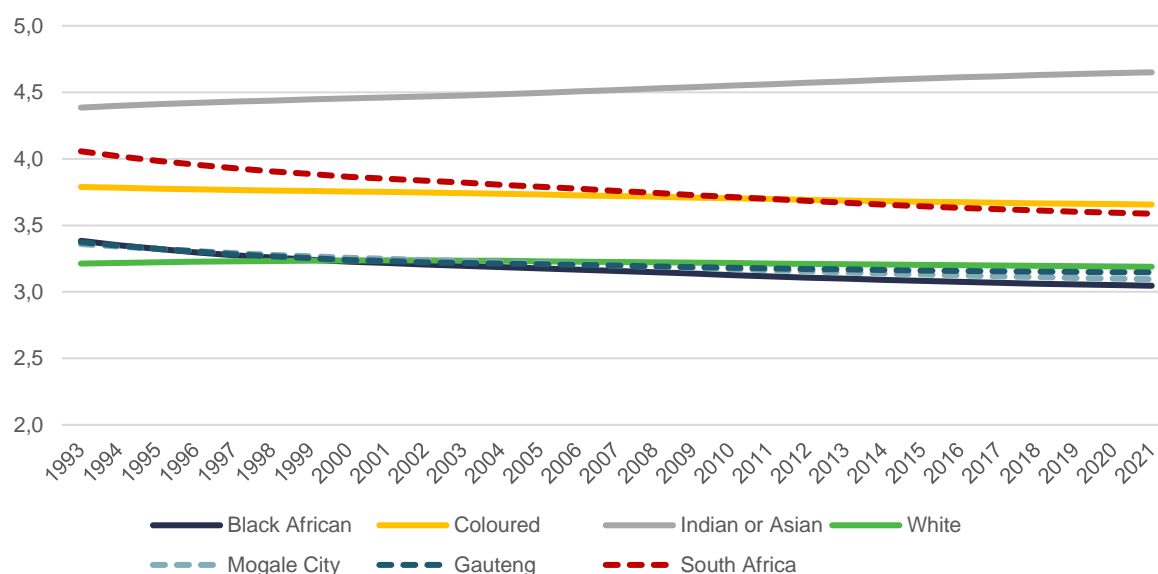
Figure 2-15 below and Figure 2-14 show that household sizes have slightly decreased in the assessed period. This confirms the patterns in the sections above and correlates to the age structure analysis findings. An increase in an economically active population has resulted in smaller or more single-family households. The black and coloured population groups experienced a decrease in household size, while the white population group remained the same over the assessed period. The Asian population is the only group that experienced increased household sizes. Overall, the average household size in the municipality decreased by 0.2.

Table 2-15: Household size from 1995 to 2021

	1995	2000	2005	2010	2015	2021
Black population	3,3	3,2	3,2	3,1	3,1	3,0
Coloured population	3,8	3,8	3,7	3,7	3,7	3,7
Asian population	4,4	4,5	4,5	4,6	4,6	4,7
White population	3,2	3,2	3,2	3,2	3,2	3,2
Average HH Size	3,3	3,3	3,2	3,2	3,1	3,1

Source: Quantec 2021

Figure 2-14: Household sizes by population group



Source: Quantec Regional Indicators 2021

d. Head of Household

Gender is important in any development environment. The gender of household heads relates to many socio-economic and cultural practices and factors. Therefore, the data below should be interpreted within the context of the environment that is being assessed. In Table 2-16 below, most household heads are male in the municipality. However, female-headed households are increasing at a rate of 5.6% per annum compared to the 4% in male-headed households.

Table 2-16: Head of household by gender

	1996	2001	2011	2016
--	------	------	------	------

Male head of household	45 883	62 116	80 609	101 323
Female head of household	16 307	29 372	36 640	48 657
Unspecified	140	0	0	0
Total	62 330	91 487	117 248	149 980

Source: Census 1996, 2001, 2011/ SDSA (MapAble 2020)/Community Survey 2016

e. Dwelling type

Housing backlogs and the demand for housing will always remain an issue in development and social support strategies in South Africa. Table 2-17 shows the different dwelling types in the municipality under assessment. From Table 17, one can see that there has been an increase in the number of informal backyard dwellings growing at 6.1% per annum and informal housing growing at 3% per annum. Interestingly the number of room/granny flat has decreased from 1996 to 2016 at a rate of 2.6% per annum. This again reflects the municipality's economy and confirms the outcomes of the previously assessed sections.

Table 2-17: Dwelling type

	1996	2001	2011	2016
Traditional	752	1 604	399	169
House made of bricks	32 907	48 511	72 002	95 001
Flat	2 687	2 312	3 145	2 999
Multiple housing	2 160	2 147	4 928	4 700
Dwelling in backyard	5 803	4 106	4 858	10 058
Room/ granny flat	2 270	1 820	1 341	1 354
Informal	8 611	14 518	11 179	15 418
Informal dwelling in backyard	5 793	9 821	18 444	19 088
Other	1 347	6 649	952	1 193
Total	62 330	91 487	117 248	149 980

Source: Census 1996, 2001, 2011/ SDSA (MapAble 2020)/Community Survey 2016

Both in Table 2-16 and Table 2-17, one should note how the Community Survey 2016 total household figures deviate from other sources.

f. Dwelling ownership

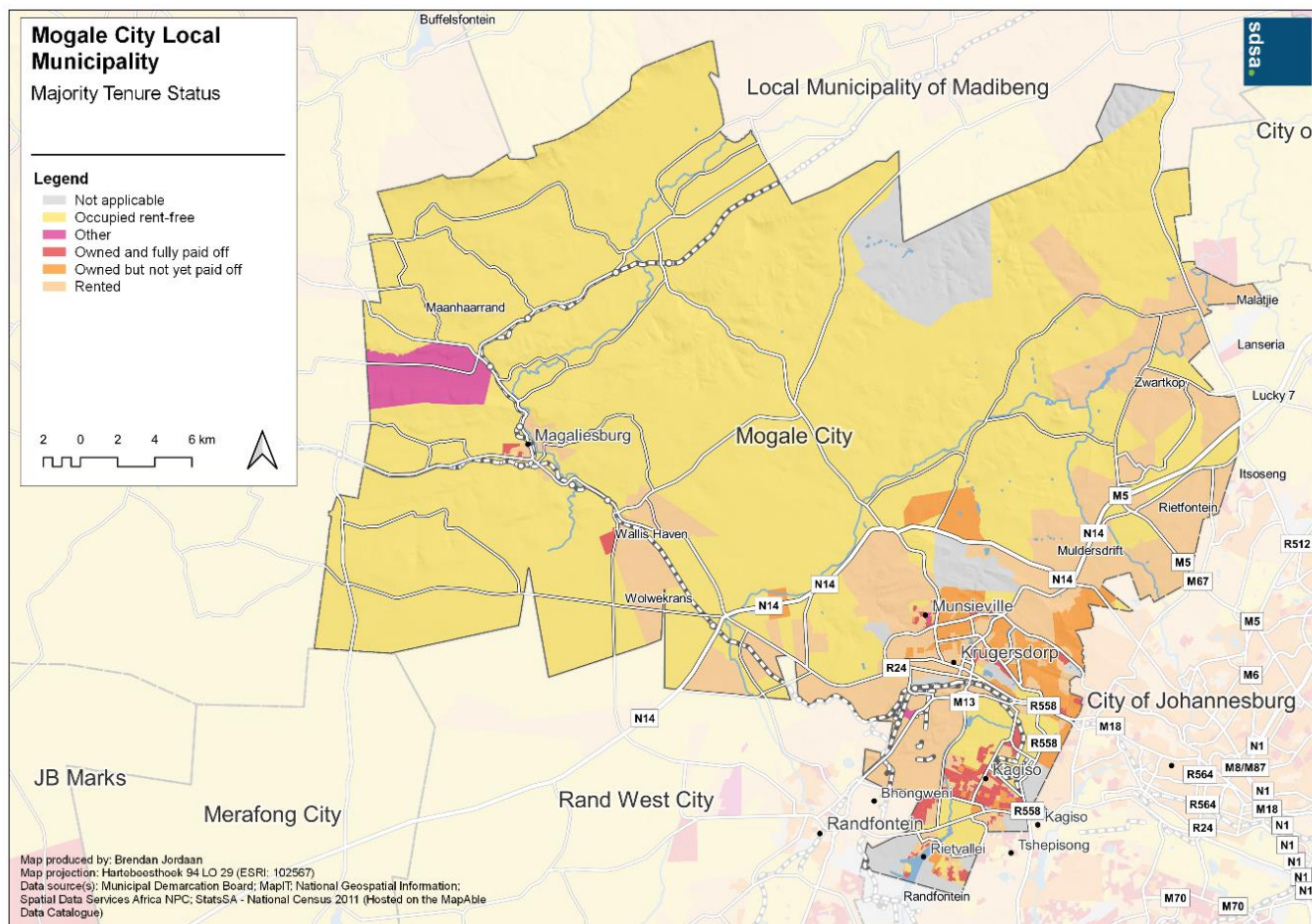
Dwelling ownership data must be treated with caution. The data from the census below is based on the occupant's perceptions. There are many ownership systems available. If ownership is interpreted as freehold ownership in terms of a title deed, most South African areas are excluded from this form of ownership. This applies to tribal land and many of the townships in South Africa that were surveyed but never proclaimed. Table 2-18 below reflects the position as reported in the censuses.

Table 2-18: Dwelling ownership

	2001	2011	2016
Rented	21 880	43 064	41 870
Owned but not yet paid off	20 343	17 595	19 596
Occupied rent-free	23 506	25 635	24 124
Owned and fully paid off	19 417	28 150	47 797
Other	6 341	2 804	16 593
Total	91 487	117 248	149 980

Source: Census 1996, 2001, 2011/ SDSA (MapAble 2020)/Community Survey 2016

Map 2-13: Majority tenure status



Source: Census 2011/SDSA (MapAble 2020)

g. Household change and growth forecasts

Households and household change are among the most critical aspects of long-term planning in any area. The number of households translates into customer units, and households usually represent more than 97% of the customers in a municipality.

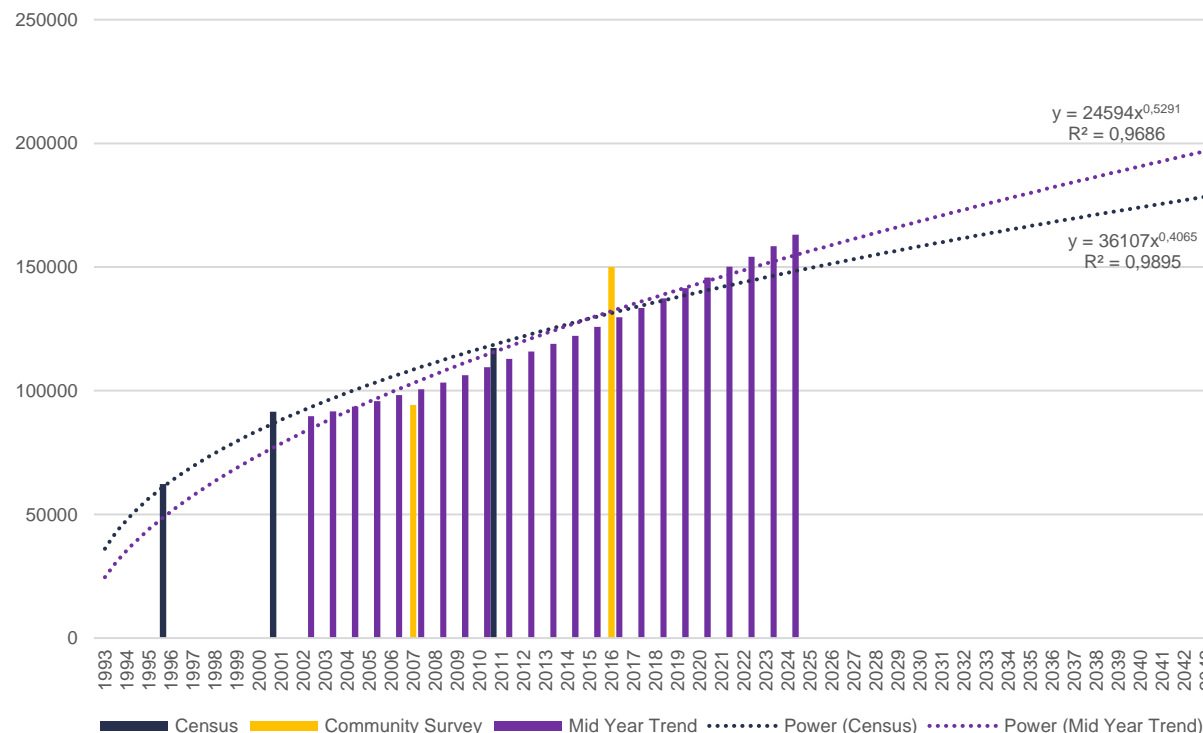
Except for the outdated censuses and community surveys, all official statistics used at a municipal or sub-municipal level are all derived from the mid-year population estimates of StatsSA. Quantec Regional indicators use mid-year estimates to calculate and calibrate their household figures. The differences in base year figures' sources are noticeable, and when these figures are projected for planning purposes, slight variations in numbers translate into significant differences over a twenty-year planning horizon.

The necessity to do forecasts is essential since it becomes the basis for all planning activities. For example, housing programmes, service delivery planning and budgets are all dependent on estimating and forecasting the long-term customer profiles of the service providers. As a previous section highlighted the challenges with population forecasts, housing units' forecasts are even more challenging. This does not imply that one should not do household forecasts, but it is crucial to monitor changes and patterns continuously. Therefore, a data and information monitoring system underlying any planning implementation system.

The following figures highlight current household data sources' implications for different forecast scenarios. StatsSA shows household data in the censuses for 1996, 2001 and 2011, community surveys for 2007 and 2016 and the mid-year estimates. The data points are shown in Figure 2-15 below. The trendline shows an excellent correlation coefficient of 0.9 for the census trendline and on the mid-year estimates, and both show varying results. For example,

the trend line for census data shows about 178 533 households by 2043, and the mid-year estimates show 196 927, a difference of about 18 000 households.

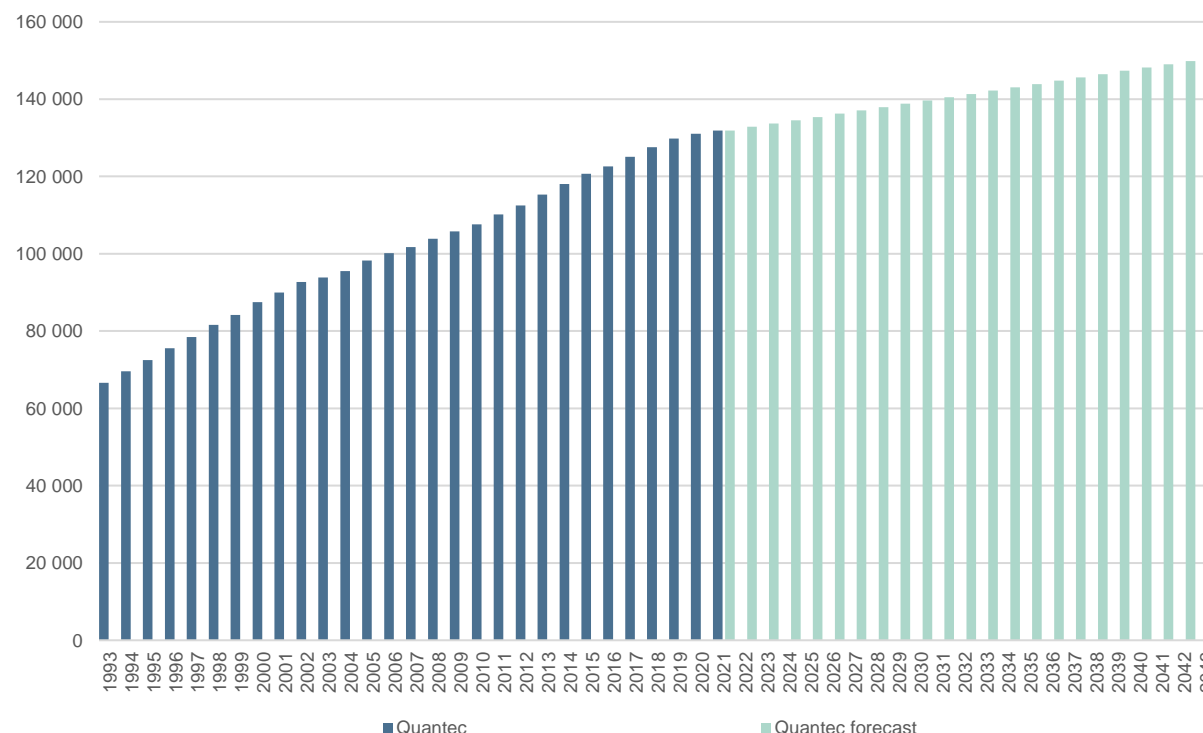
Figure 2-15: Household projections based on StatsSA data



Source: Figure 21: Household trends based on StatsSA data

Figure 2-16 below shows Quantec Regional indicators data, benchmarked to mid-year population estimates. The Quantec Regional Indicators forecast shows 150 733 households by 2043. This is a lower forecast than the mid-year estimate and census trends. The difference between the Quantec forecast and mid-year estimates forecast is about 46 000 households in 2043.

Figure 2-16: Household trends based on Quantec data



Source: Quantec Regional Indicators 2021/ SDSA 2021

The Mid-Year population estimates forecast and census data are within close margins from each other, but the Quantec forecast is nearly 46 000 households lower than the other data sets. This makes establishing long-term trends difficult. As a result, the growth uncertainty remains high and requires continuous growth monitoring.

The following household numbers in Table 2-19 support the identified trends.

Table 2-19: Projected household numbers

	2021	2025	2030	2035	2040	2043
Quantec forecast	131 848	135 392	139 653	143 915	148 176	150 733
Census trend	141 924	149 578	158 407	166 570	174 187	178 533
Mid-year population estimates trends	146 078	156 414	168 536	179 927	190 710	196 927

2.7 Economic profile

The economic profile of any area largely determines its resource base and the level of development it can sustain. Linked to local demographics, population and economic variables determine the demand for infrastructure and services to maintain long-term growth.

This section gives an overview of the local economy and will draw inferences based on information regarding long-term growth and development prospects. This section addresses several economic issues on a comparative geographical basis and includes the value of economic production of goods and services, employment, and household income and expenditure. This primarily descriptive section will be followed by a section dealing with relationships and performance in the economic environment. The main issues are the drivers in the local economy and specialisation levels in the economy.

Local and district municipalities are not demarcated as functional economic entities but as political-administrative units. This leads to several challenges in economic assessment. Amongst others, the following limitations should be considered:

- Economies, like a specific municipal area, are open and cannot be ring-fenced or isolated.
- Economic growth is affected by internationally linked markets; hence, supply and demand for goods and services cannot be determined locally alone.
- National fiscal policies are outside the control of local economies and are impossible to predict over the long term.
- National and local politics impact local and national economies, and political stability levels are impossible to predict.
- Economic growth tends to follow cycles. These cycles are difficult to discount over the longer term.
- It is not possible to accurately discount the current COVID-19 crisis's long-term impact at a local level.

South Africa has a highly interventionist economy, and continuous efforts are made to manipulate economic development and growth. These interventions are not always based on rational economic decision-making but on socio-political agendas, such as the government's economic transformation agenda and the so-called "pro-poor" policies. The aim of these non-economic agendas is also specifically to alter the current or natural course of the economy. It becomes, therefore, virtually impossible to predict economic development outcomes based on existing trends and tendencies.

2.7.1 The value of economic production, good and services

Gross value added (GVA) is a measure of the value of goods and services produced in an area, industry, or economic sector. GVA is linked to gross domestic product (GDP), as both are output measures. Simplistically, GVA is the total of all revenues. The relationship is defined as:

$$\text{GVA} = \text{GDP} - (\text{taxes} + \text{subsidies})$$

Table 2-20 shows the GVA per sector in the municipality from 1993 to 2021.

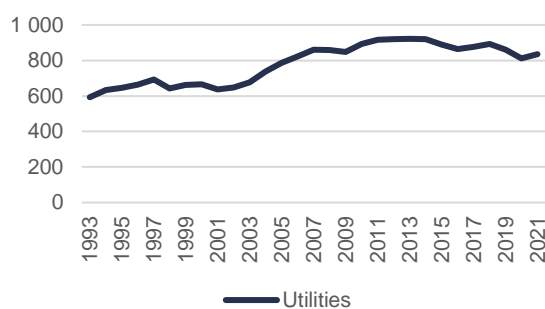
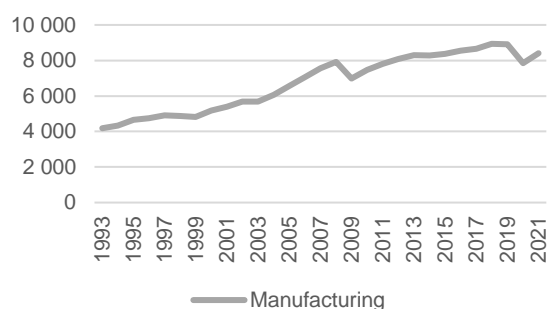
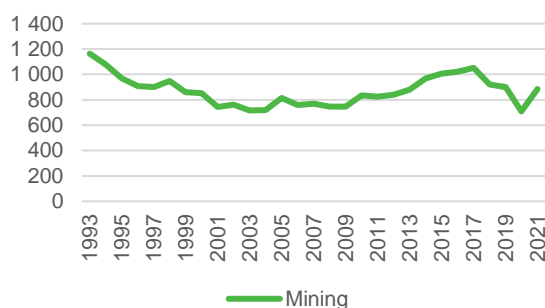
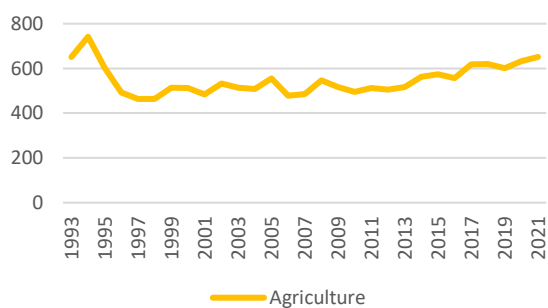
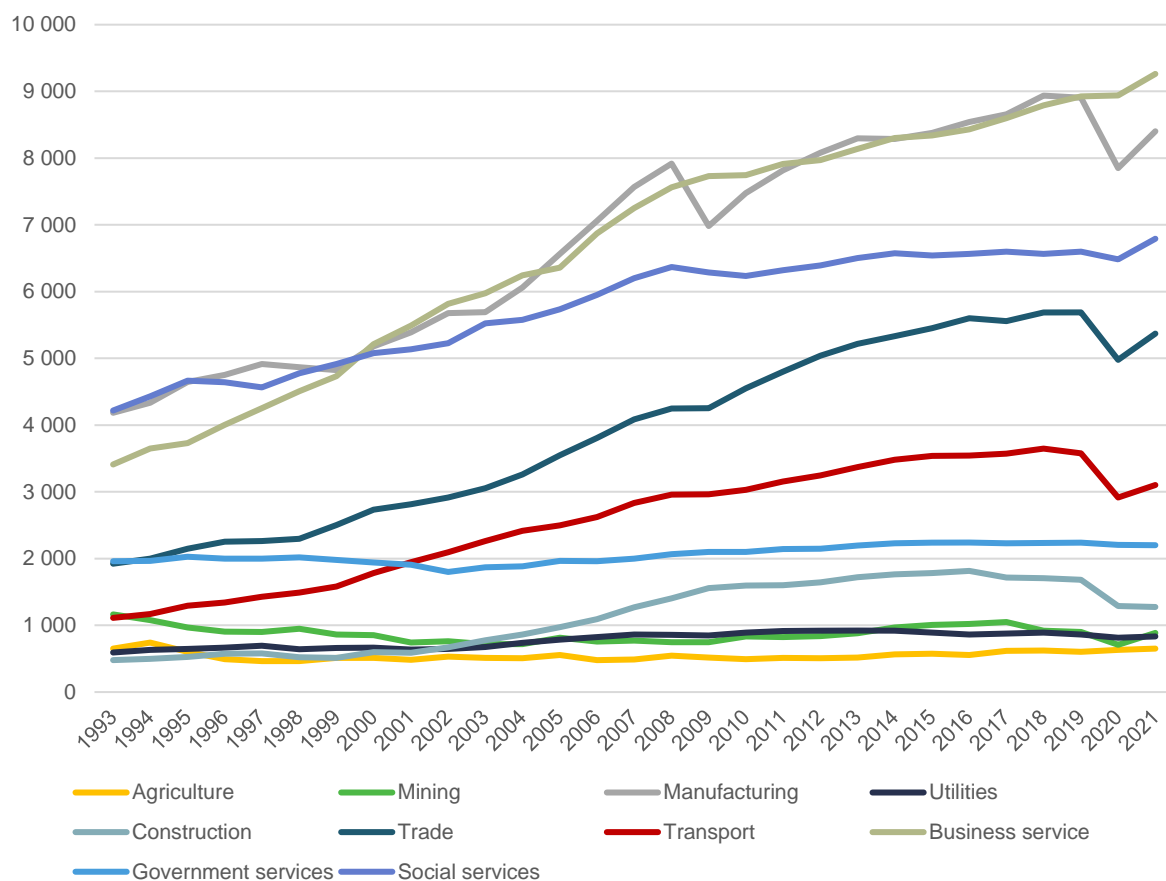
Table 2-20: GVA per annum per sector (R' million at 2015 constant prices)

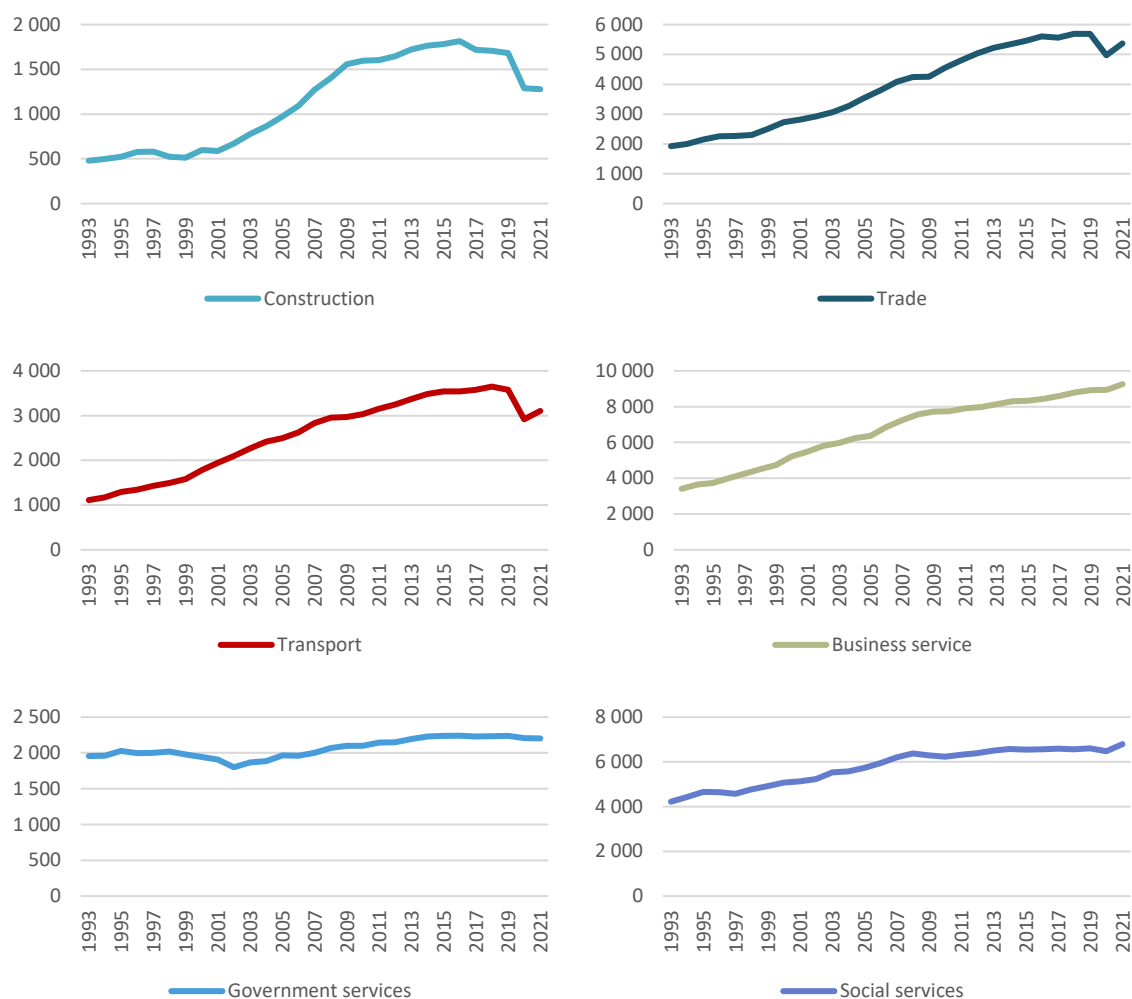
GVA	Agriculture	Mining	Manufacturing	Utilities	Construction	Trade	Transport and Telecommunications	Business service	Government services	Social services	Total
1993	651	1 164	4 185	593	479	1 923	1 112	3 410	1 958	4 219	19 694
1994	742	1 077	4 336	633	500	1 998	1 171	3 649	1 963	4 430	20 497
1995	602	967	4 649	646	525	2 149	1 293	3 728	2 027	4 664	21 250
1996	492	907	4 754	664	576	2 251	1 341	4 003	1 998	4 643	21 629
1997	464	899	4 916	693	581	2 262	1 430	4 254	1 999	4 567	22 066
1998	464	949	4 867	643	523	2 297	1 491	4 509	2 017	4 778	22 540
1999	514	861	4 826	662	511	2 501	1 582	4 733	1 980	4 914	23 084
2000	512	853	5 179	666	599	2 732	1 782	5 214	1 943	5 078	24 559
2001	484	743	5 392	637	588	2 817	1 948	5 493	1 906	5 135	25 142
2002	532	761	5 679	649	670	2 917	2 097	5 817	1 800	5 227	26 148
2003	514	717	5 692	676	776	3 056	2 264	5 973	1 869	5 525	27 063
2004	508	719	6 062	737	863	3 262	2 415	6 245	1 884	5 578	28 270
2005	555	815	6 564	787	974	3 548	2 497	6 359	1 965	5 733	29 797
2006	478	758	7 060	823	1 092	3 806	2 624	6 873	1 960	5 950	31 425
2007	486	769	7 568	861	1 272	4 085	2 834	7 249	2 001	6 202	33 327
2008	546	746	7 918	859	1 404	4 247	2 957	7 562	2 066	6 370	34 675
2009	517	747	6 980	848	1 558	4 255	2 965	7 731	2 101	6 287	33 990
2010	495	835	7 476	892	1 595	4 548	3 031	7 745	2 098	6 234	34 949
2011	512	825	7 819	916	1 603	4 800	3 154	7 913	2 142	6 323	36 007
2012	505	839	8 081	919	1 645	5 039	3 246	7 970	2 149	6 394	36 788
2013	516	881	8 296	922	1 721	5 219	3 369	8 139	2 194	6 505	37 760
2014	563	969	8 289	920	1 763	5 333	3 483	8 301	2 230	6 577	38 428
2015	574	1 007	8 379	889	1 784	5 455	3 540	8 339	2 238	6 540	38 743
2016	557	1 022	8 542	864	1 815	5 600	3 544	8 432	2 240	6 564	39 181
2017	618	1 051	8 659	876	1 718	5 556	3 574	8 601	2 230	6 597	39 479
2018	620	919	8 937	893	1 708	5 686	3 648	8 790	2 234	6 563	39 998
2019	601	900	8 908	861	1 681	5 689	3 575	8 923	2 238	6 597	39 973
2020	633	708	7 852	812	1 290	4 976	2 915	8 940	2 207	6 482	36 817
2021	651	886	8 404	835	1 277	5 369	3 103	9 262	2 201	6 792	38 780
% contribution	1,68%	2,28%	21,67%	2,15%	3,29%	13,85%	8,00%	23,88%	5,68%	17,51%	100,00 %
Average growth	0,00%	-0,97%	2,52%	1,23%	3,56%	3,73%	3,73%	3,63%	0,42%	1,72%	2,45%

Source: Quantec Regional Indicators 2021

The local Municipality has had an average annual economic growth rate of 2.45% during the period assessed. The most significant contributing sector is business services, contributing 23.88% to the local economy. The second-largest sector is manufacturing at 21.67%, followed by Social services at 17.51%. Most sectors declined between the year 2019 to 2021 due to the Covid- 19 crisis, which is noticeable, except for agricultural and business services, which continued to grow. On the other hand, the trade and Transport and Telecommunications sectors are the largest growing sectors in the municipality, with a growth rate of 3.73% for both. These patterns are illustrated in Figure 2-17 below.

Figure 2-17: GVA per sector





Source: Quantec Regional Indicators 2021

a. Employment

Employment and the level of employment directly impact the government sector's long-term financial well-being. Employment eventually translates into growth in all spheres of the government's potential revenue base. On the other hand, employment and eventual unemployment challenges increase poverty and the demand for the government's social support programmes.

b. Labour force characteristics

Table 21 below describes key labour force characteristics between 1995 and 2021. The following is evident:

- While the population grew at 2.67% per annum, the working-age population grew by 2.75% per annum. That is 0.08% more than the population growth rate.
- The economy's ability to employ new job-seekers increased by 0.05% per annum.

Table 2-21: Labour absorption and participation

	1995	2000	2005	2010	2015	2021	Average pa%
Population - Total	240 862	284 926	315 942	341 202	377 776	408 052	2,67%
Population - Working Age	166 466	203 229	228 884	246 232	270 698	285 468	2,75%
Absorption rate	69,11%	71,33%	72,44%	72,17%	71,66%	69,96%	0,05%

Not economically active	40 524	59 400	59 635	66 701	68 458	83 257	4,06%
Labour force participation rate	75,7	70,8	73,9	72,9	74,7	70,8	-0,25%

Source: Quantec Regional Indicators 2021

c. Employment and skills levels

The workforce and its employment characteristics are important. The relationships between formal and informal employment and the employment of different skill levels indicate the local economy's general well-being and stress points, which eventually impact the demand for and the council's ability to deliver services.

Table 2-22: Workforce characteristics

	1995	2000	2005	2010	2015	2021	Average change pa%
Employed - Formal and informal	117 888	128 292	139 601	151 831	170 135	152 677	1,14%
Employed - Formal - Total	95 310	103 179	103 881	104 256	117 465	120 348	1,01%
Employed - Formal - Skilled	22 467	23 575	25 453	27 382	32 109	34 907	2,13%
Employed - Formal - Semi-skilled	44 924	47 128	48 814	47 513	52 151	52 025	0,61%
Employed - Formal - Low skilled	27 919	32 476	29 614	29 361	33 205	33 416	0,76%
Employed - Informal	22 578	25 113	35 720	47 575	52 670	32 329	1,66%
Unemployed	8 054	15 537	29 648	27 700	32 105	49 535	19,81%
Unemployment rate (%)	6,4	10,8	17,5	15,4	15,9	24,5	10,89%

Source: Quantec Regional Indicators 2021

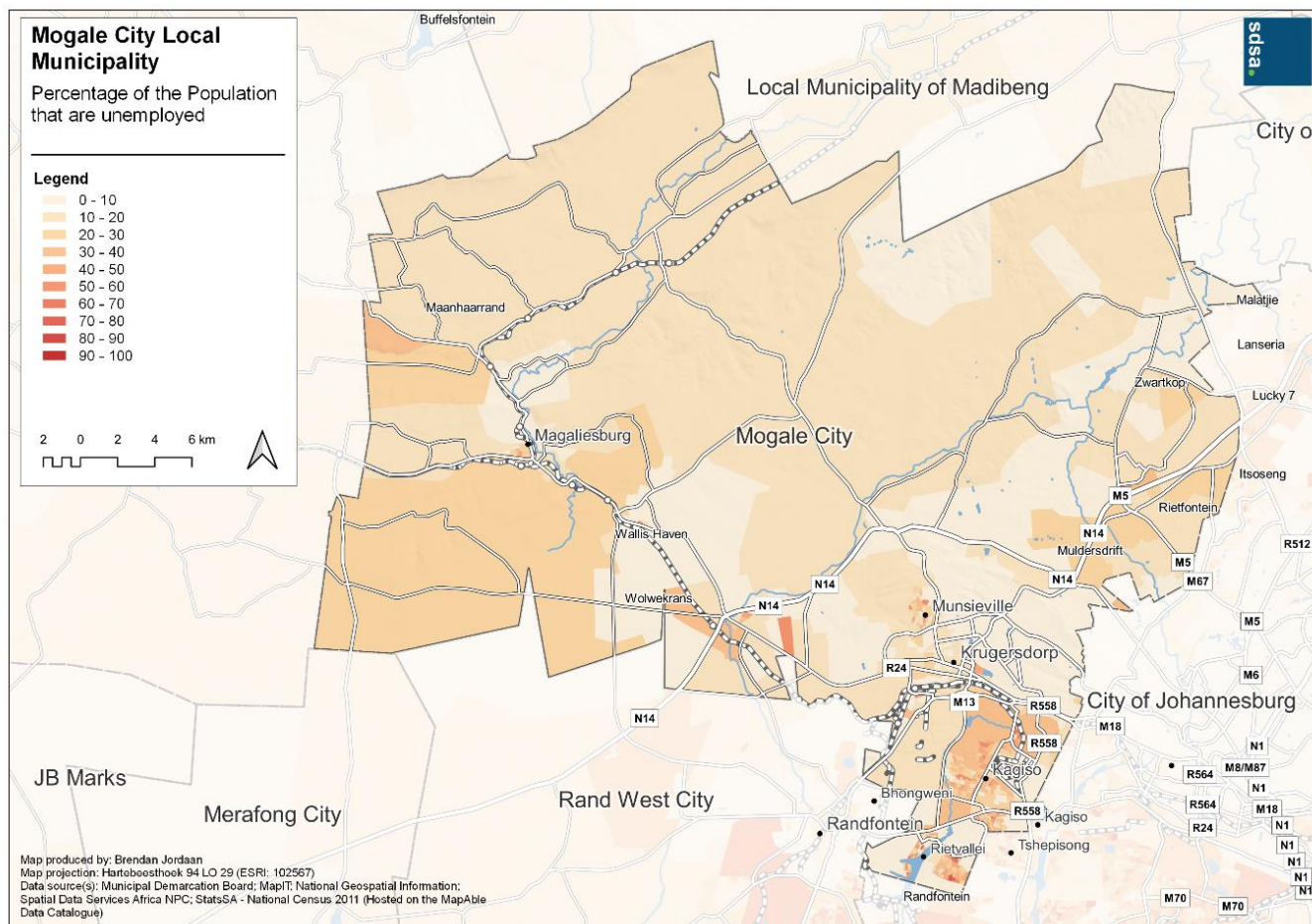
A distinction is made between skilled, semi- or unskilled (low-skilled) employment in the formal sector. Table 2-22 shows that skilled people's growth is 0.5% lower than general population growth (2.67% per annum) at 2.13%, while semi-skilled employment increased by 0.61% per annum. On the other hand, unskilled employment increased by 0.76% per annum. The net result is that total formal employment increased by 1.01%. In 1995, an estimated 95 310 formally employed persons were in the area, and the figure for 2021 was 120 348.

Employment within the informal sector continues to increase. This represents an increase of more than 10 000 informal job opportunities since 1995. Only two options remain when the economically active people's growth is considered: they either find employment in the informal sector or remain unemployed.

The informal sector experienced a 1.66% increase per annum. However, by definition, the informal sector is unrecorded and outside the municipal financial resource base's scope and does not usually allow direct cost recovery measures and taxation.

Total employment increased by 1.14%, below the growth of the active economic population. This means unemployment has grown by 19.81% per annum. The unemployment rate stood at 6.4% in 1995 and increased to 24.5% in 2021.

Map 2-14: The spatial distribution of unemployed 2011



Source: Census 2011

d. Level of education

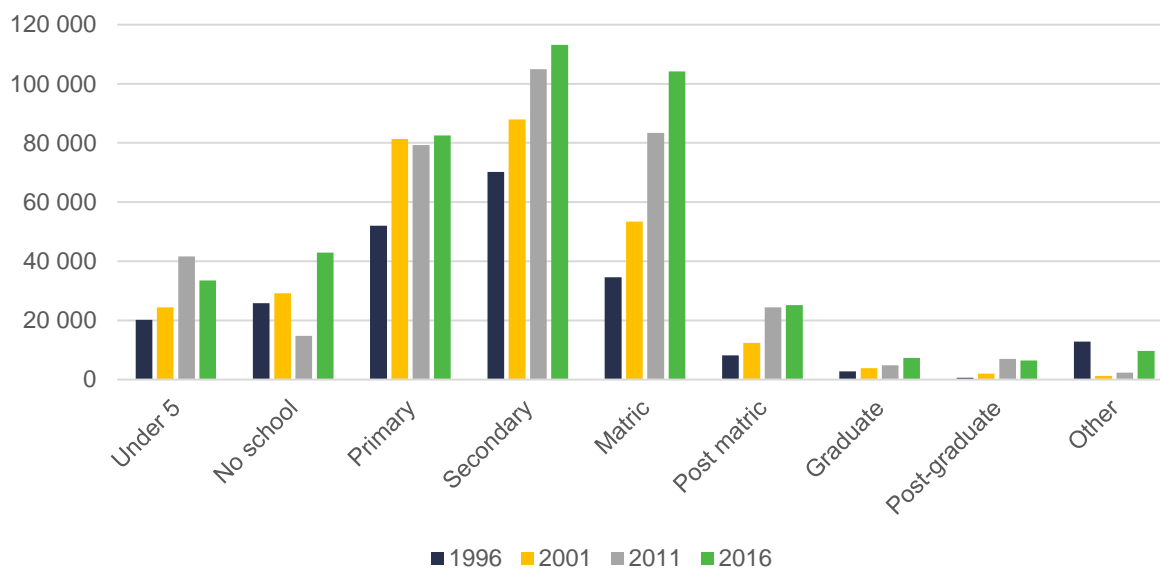
Education is pivotal in the development process. Skill levels are derivatives of levels of education. The following table shows the level of education in the area. Table 2-23 and Figure 2-18 below indicate that the municipality has increased the total number of people with primary, secondary and matric qualifications, with matric showing the most growth. However, those with no schooling have increased drastically since 2011. The increase in education levels can result from expanding education services in the municipality and the migration of skilled labourers into the municipality.

Table 2-23: The highest level of education

	1996	2001	2011	2016
Under 5	20 159	24 451	41 660	33 560
No school	25 775	29 135	14 785	42 871
Primary	52 015	81 403	79 290	82 538
Secondary	70 171	88 000	104 892	113 134
Matric	34 555	53 372	83 370	104 215
Post matric	8 199	12 455	24 404	25 203
Graduate	2 728	3 873	4 843	7 305
Post-graduate	637	2 051	6 945	6 465
Other	12 799	1 247	2 348	9 680
Total	227 037	295 988	362 536	391 411

Source: Census data/ Community Survey 2016

Figure 2-18: Change in level of education



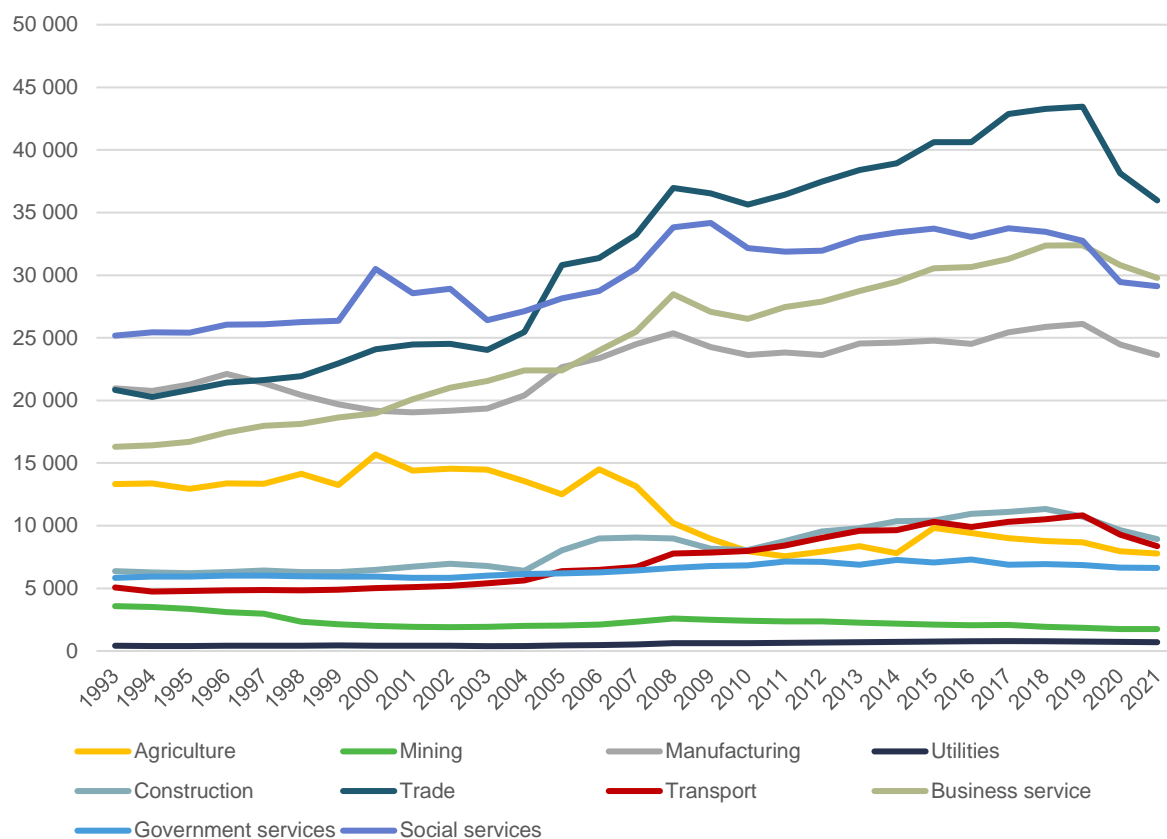
Source: Census data/ Community Survey 2016

e. A change perspective on employment and unemployment (Labour)

This section assesses the employment per sector and how it changed over time. The period under investigation stretches from 1993 to 2021. The trade sector is the largest employer in the municipality, employing 25.41% of the labour force. The second-largest contributor to employment is the business service sector at 19.51%. Social services are responsible for 19.07% of jobs. Almost all sectors have shown an increase in the number of people employed, with a total average increase of 0.96%. On the other hand, agriculture and mining are the sectors that have shed labour at a rate of 1.97% and 2.62% per annum, respectively.

The annualised employment changes per sector below show how much employment can fluctuate in the short term. Therefore, it is appropriate to monitor tendencies continuously, but long-term trends remain essential for strategic decision-making and planning.

These changes are reflected in Figure 2-19 below. Table 2-24 shows the extent of employment per sector, while Table 2-25 presents each industry's percentage share over time to the labour force.

Figure 2-19: Employment per sector


Source: Quantec Regional Indicators 2021

Table 2-24: The extent of employment per sector

Employment	Agriculture	Mining	Manufacturing	Utilities	Construction	Trade	Transport	Business service	Government services	Social services	Total
1993	13 331	3 581	20 961	431	6 363	20 844	5 061	16 301	5 847	25 176	117 896
1994	13 379	3 518	20 762	406	6 281	20 276	4 743	16 412	5 931	25 431	117 139
1995	12 945	3 365	21 269	405	6 210	20 832	4 792	16 710	5 946	25 414	117 888
1996	13 369	3 098	22 113	410	6 304	21 436	4 831	17 445	6 015	26 045	121 066
1997	13 349	2 967	21 375	408	6 435	21 627	4 855	17 971	6 021	26 083	121 091
1998	14 138	2 324	20 441	430	6 309	21 939	4 853	18 137	5 956	26 264	120 791
1999	13 243	2 141	19 686	443	6 303	22 955	4 895	18 629	5 932	26 357	120 584
2000	15 684	2 010	19 176	416	6 467	24 091	5 022	18 982	5 937	30 507	128 292
2001	14 392	1 930	19 052	414	6 740	24 455	5 098	20 105	5 839	28 564	126 589
2002	14 550	1 913	19 183	413	6 962	24 511	5 199	21 008	5 839	28 913	128 491
2003	14 466	1 916	19 366	386	6 784	24 033	5 394	21 547	6 012	26 412	126 316
2004	13 556	2 001	20 399	406	6 396	25 470	5 621	22 398	6 136	27 126	129 509
2005	12 514	2 038	22 643	457	8 030	30 805	6 368	22 407	6 196	28 143	139 601
2006	14 513	2 102	23 361	480	8 978	31 380	6 469	23 972	6 283	28 736	146 274
2007	13 136	2 347	24 490	529	9 063	33 245	6 704	25 497	6 437	30 516	151 964
2008	10 216	2 594	25 355	616	8 978	36 963	7 774	28 472	6 640	33 833	161 441
2009	8 955	2 497	24 257	623	8 168	36 536	7 858	27 074	6 781	34 170	156 919
2010	7 968	2 415	23 631	627	8 069	35 639	7 986	26 505	6 841	32 150	151 831

Employment	Agriculture	Mining	Manufacturing	Utilities	Construction	Trade	Transport	Business service	Government services	Social services	Total
2011	7 562	2 362	23 831	656	8 779	36 440	8 424	27 458	7 137	31 879	154 528
2012	7 936	2 355	23 613	677	9 532	37 469	9 028	27 895	7 128	31 962	157 595
2013	8 378	2 267	24 552	690	9 793	38 399	9 596	28 731	6 874	32 964	162 244
2014	7 806	2 183	24 622	720	10 369	38 922	9 646	29 474	7 281	33 400	164 423
2015	9 812	2 119	24 770	751	10 424	40 613	10 300	30 548	7 075	33 723	170 135
2016	9 407	2 059	24 517	777	10 955	40 624	9 890	30 657	7 300	33 063	169 249
2017	8 999	2 078	25 450	789	11 091	42 876	10 317	31 280	6 896	33 751	173 527
2018	8 780	1 920	25 865	770	11 335	43 284	10 526	32 375	6 935	33 455	175 245
2019	8 676	1 849	26 110	762	10 709	43 451	10 828	32 388	6 861	32 737	174 371
2020	7 970	1 756	24 456	729	9 652	38 132	9 283	30 808	6 660	29 458	158 904
2021	7 789	1 750	23 629	707	8 933	35 959	8 371	29 788	6 635	29 116	152 677
% contribution	5,10%	1,15%	15,48%	0,46%	5,85%	23,55%	5,48%	19,51%	4,35%	19,07%	100,00%
Average growth	-1,97%	-2,62%	0,44%	1,85%	1,26%	2,04%	1,88%	2,26%	0,47%	0,54%	0,96%

Source: Quantec Regional Indicators 2021

Table 2-25: Share of labour force per sector

	Agriculture	Mining	Manufacturing	Utilities	Construction	Trade	Transport	Business service	Government services	Social services
1993	11,31%	3,04%	17,78%	0,37%	5,40%	17,68%	4,29%	13,83%	4,96%	21,35%
1994	11,42%	3,00%	17,72%	0,35%	5,36%	17,31%	4,05%	14,01%	5,06%	21,71%
1995	10,98%	2,85%	18,04%	0,34%	5,27%	17,67%	4,06%	14,17%	5,04%	21,56%
1996	11,04%	2,56%	18,27%	0,34%	5,21%	17,71%	3,99%	14,41%	4,97%	21,51%
1997	11,02%	2,45%	17,65%	0,34%	5,31%	17,86%	4,01%	14,84%	4,97%	21,54%
1998	11,70%	1,92%	16,92%	0,36%	5,22%	18,16%	4,02%	15,02%	4,93%	21,74%
1999	10,98%	1,78%	16,33%	0,37%	5,23%	19,04%	4,06%	15,45%	4,92%	21,86%
2000	12,23%	1,57%	14,95%	0,32%	5,04%	18,78%	3,91%	14,80%	4,63%	23,78%
2001	11,37%	1,52%	15,05%	0,33%	5,32%	19,32%	4,03%	15,88%	4,61%	22,56%
2002	11,32%	1,49%	14,93%	0,32%	5,42%	19,08%	4,05%	16,35%	4,54%	22,50%
2003	11,45%	1,52%	15,33%	0,31%	5,37%	19,03%	4,27%	17,06%	4,76%	20,91%
2004	10,47%	1,55%	15,75%	0,31%	4,94%	19,67%	4,34%	17,29%	4,74%	20,95%
2005	8,96%	1,46%	16,22%	0,33%	5,75%	22,07%	4,56%	16,05%	4,44%	20,16%
2006	9,92%	1,44%	15,97%	0,33%	6,14%	21,45%	4,42%	16,39%	4,30%	19,65%
2007	8,64%	1,54%	16,12%	0,35%	5,96%	21,88%	4,41%	16,78%	4,24%	20,08%
2008	6,33%	1,61%	15,71%	0,38%	5,56%	22,90%	4,82%	17,64%	4,11%	20,96%
2009	5,71%	1,59%	15,46%	0,40%	5,21%	23,28%	5,01%	17,25%	4,32%	21,78%
2010	5,25%	1,59%	15,56%	0,41%	5,31%	23,47%	5,26%	17,46%	4,51%	21,17%
2011	4,89%	1,53%	15,42%	0,42%	5,68%	23,58%	5,45%	17,77%	4,62%	20,63%
2012	5,04%	1,49%	14,98%	0,43%	6,05%	23,78%	5,73%	17,70%	4,52%	20,28%
2013	5,16%	1,40%	15,13%	0,43%	6,04%	23,67%	5,91%	17,71%	4,24%	20,32%
2014	4,75%	1,33%	14,97%	0,44%	6,31%	23,67%	5,87%	17,93%	4,43%	20,31%
2015	5,77%	1,25%	14,56%	0,44%	6,13%	23,87%	6,05%	17,96%	4,16%	19,82%
2016	5,56%	1,22%	14,49%	0,46%	6,47%	24,00%	5,84%	18,11%	4,31%	19,54%
2017	5,19%	1,20%	14,67%	0,45%	6,39%	24,71%	5,95%	18,03%	3,97%	19,45%

	Agriculture	Mining	Manufacturing	Utilities	Construction	Trade	Transport	Business service	Government services	Social services
2018	5,01%	1,10%	14,76%	0,44%	6,47%	24,70%	6,01%	18,47%	3,96%	19,09%
2019	4,98%	1,06%	14,97%	0,44%	6,14%	24,92%	6,21%	18,57%	3,93%	18,77%
2020	5,02%	1,11%	15,39%	0,46%	6,07%	24,00%	5,84%	19,39%	4,19%	18,54%
2021	5,10%	1,15%	15,48%	0,46%	5,85%	23,55%	5,48%	19,51%	4,35%	19,07%

Source: Quantec Regional Indicators 2021

2.7.2 Household income and expenditure

a. Household income categories

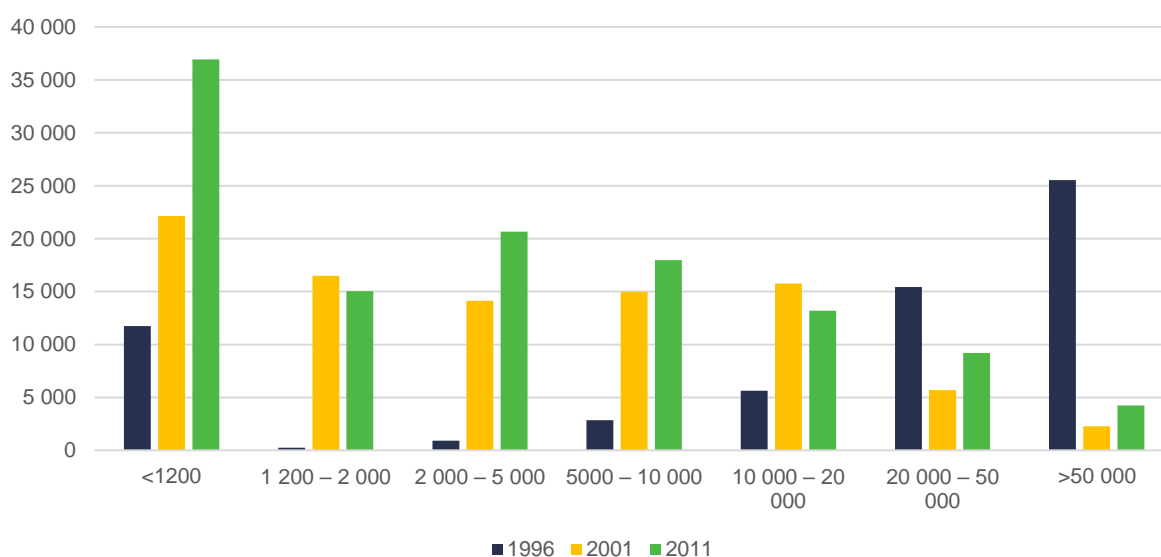
Household income and consumption expenditure directly impact the municipal area's potential revenue base. This section shows household income distribution for the municipality. Table 2-26 indicates how the population has become poorer. The number of households whose income is below R1,200 per month has increased from 19% in 1996 to 32% in 2011. On the other hand, households earning more than R50,000 per month decreased from 41% in 1996 to 4% in 2011. This is concerning as it significantly impacts the municipality's revenue base and its ability to sustain itself financially.

Table 2-26: Distribution of household income (R/month)

Income group (Rands)	1996		2001		2011	
<1200	11 749	19%	22 133	24%	36 947	32%
1 200 – 2 000	234	0%	16 493	18%	15 032	13%
2 000 – 5 000	911	1%	14 128	15%	20 656	18%
5000 – 10 000	2 840	5%	14 991	16%	17 985	15%
10 000 – 20 000	5 636	9%	15 771	17%	13 207	11%
20 000 – 50 000	15 440	25%	5 693	6%	9 194	8%
>50 000	25 534	41%	2 278	2%	4 228	4%
Total	62 330	100%	91 487	100%	117 248	100%

Source: Census 1996, 2001, 2011

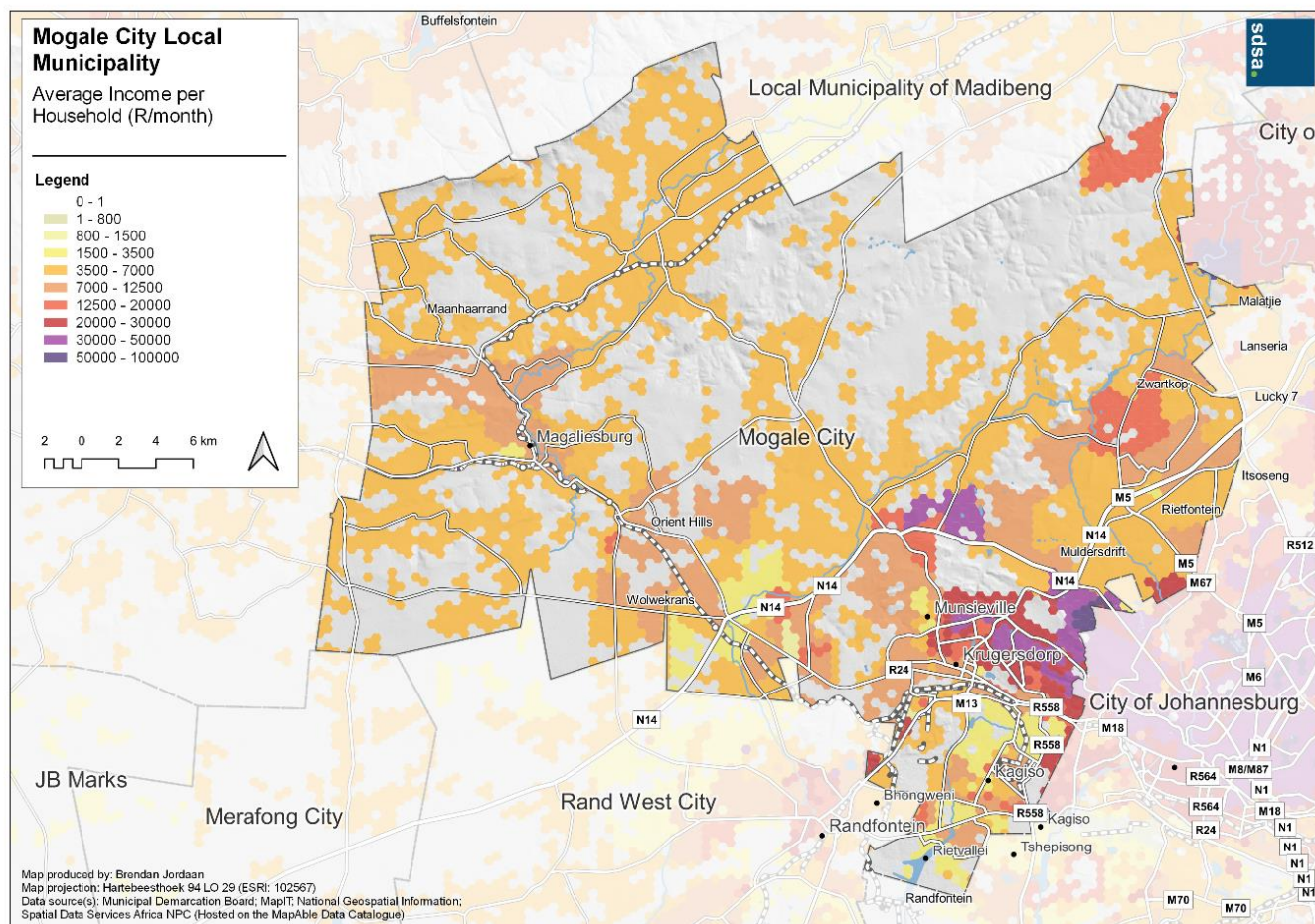
Figure 2-20: Comparative household income distributions 2011



Source: Census 1996, 2001, 2011

Map 2-15 below illustrates the spatial distribution of the income per household. The average household income distribution clearly shows a concentration of higher-income households in and around Krugersdorp and just north of the N14, Oaktree. The more inland rural areas of the municipality are the poorer regions. However, the density of people has a significant impact on the overall buying power of a neighbourhood. This explains why large retail developments are viable in more impoverished areas. However, one should expect that the retail and product mix will substantially differ between the high, medium and low-income areas.

Map 2-15: Income per household



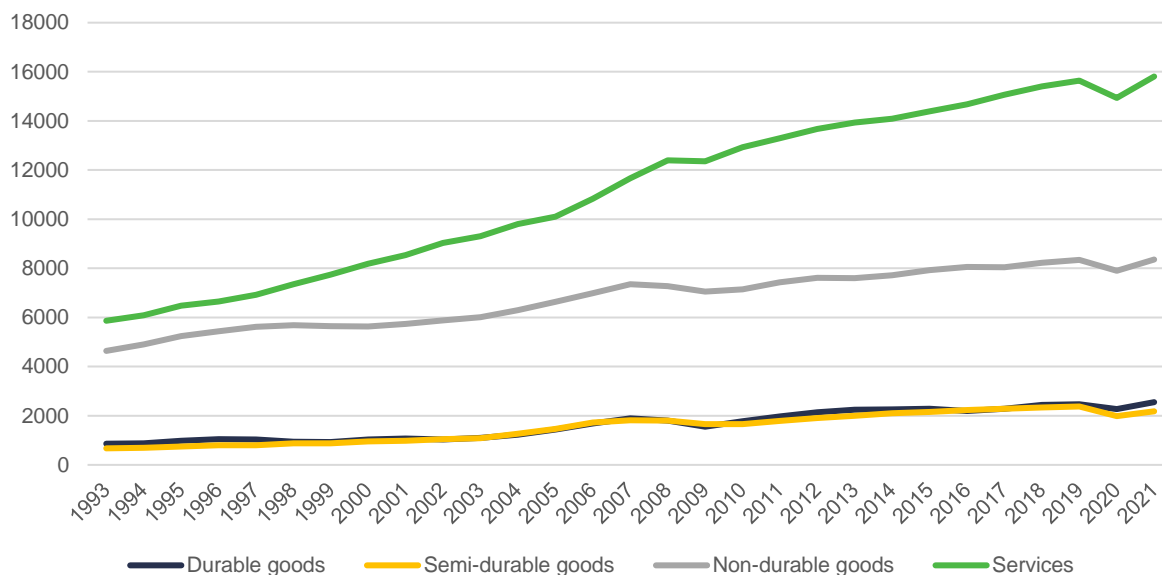
Source: Census 2011/SDSA (SDSA 2020)

b. Consumption and expenditure

Household final consumption expenditure (HFCE) is a transaction of the national account's use of income account representing consumer spending. It consists of the expenditure incurred by resident households on individual consumption goods and services, including those sold at prices that are not economically significant. It also includes various kinds of imputed expenditure, of which the imputed rent for services of owner-occupied housing (imputed rents) is generally the most important. The household sector covers not only those living in traditional households but also those living in communal establishments, such as retirement homes, boarding houses and prisons.

HFCE is measured at purchasers' prices which is the price the purchaser pays at the time of the purchase. It includes non-deductible value-added tax and other taxes on products, transport and marketing costs and tips paid over and above stated prices.

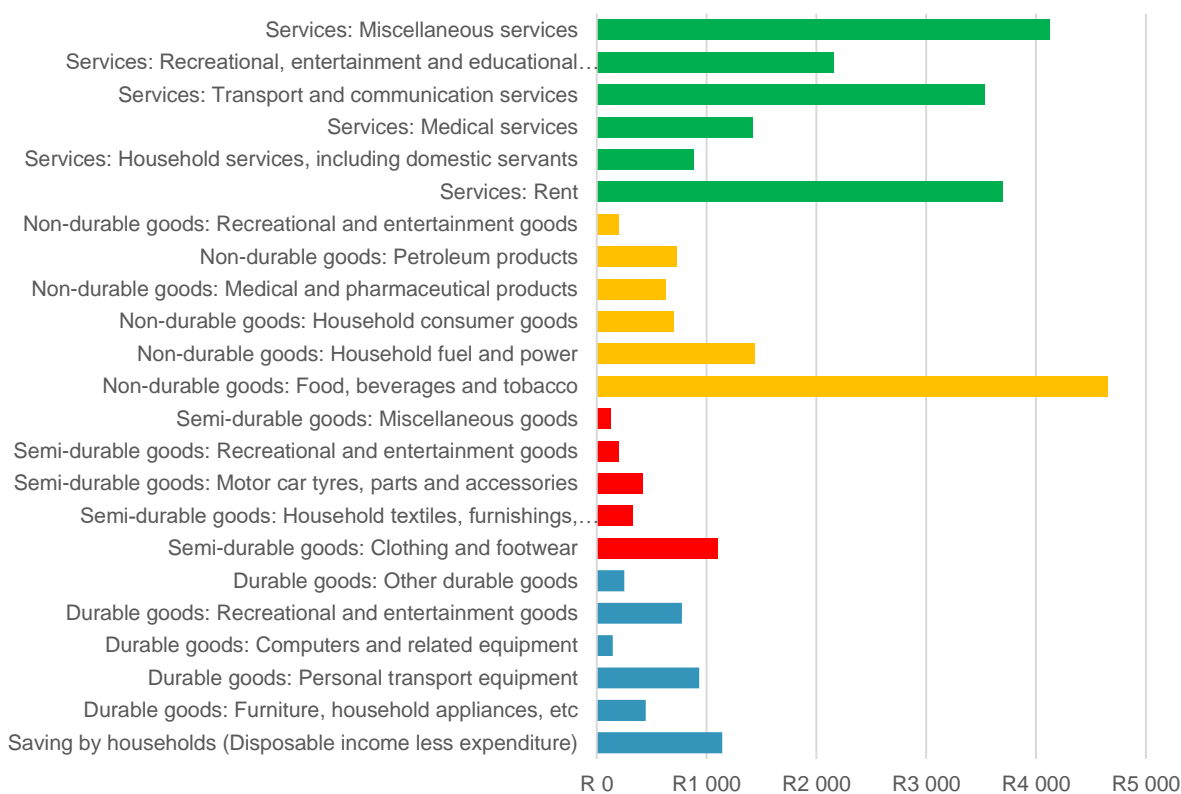
Figure 2-21: Household consumption and expenditure



Source: Quantec Regional indicators

The figure above shows household expenditure on four categories of goods and services. The first noticeable fact is the steep incline in expenditure on services and non-durable goods while expenditure on durable and semi-durable goods grew very slowly. It implies that there is pressure on households to survive harsh economic conditions. This is particularly noticeable after the economic downturn in 2008. As a result, the sale of durable goods dipped, and expenditure on non-durable goods and services increased sharply during the same period. The expanded consumption profile of the municipality is shown in the figure below, which describes a detailed breakdown of expenditure. The significant proportional expenditure on non-durable goods, such as food, points to a lower-income consumer base.

Figure 2-22: Expanded consumption profile 2021

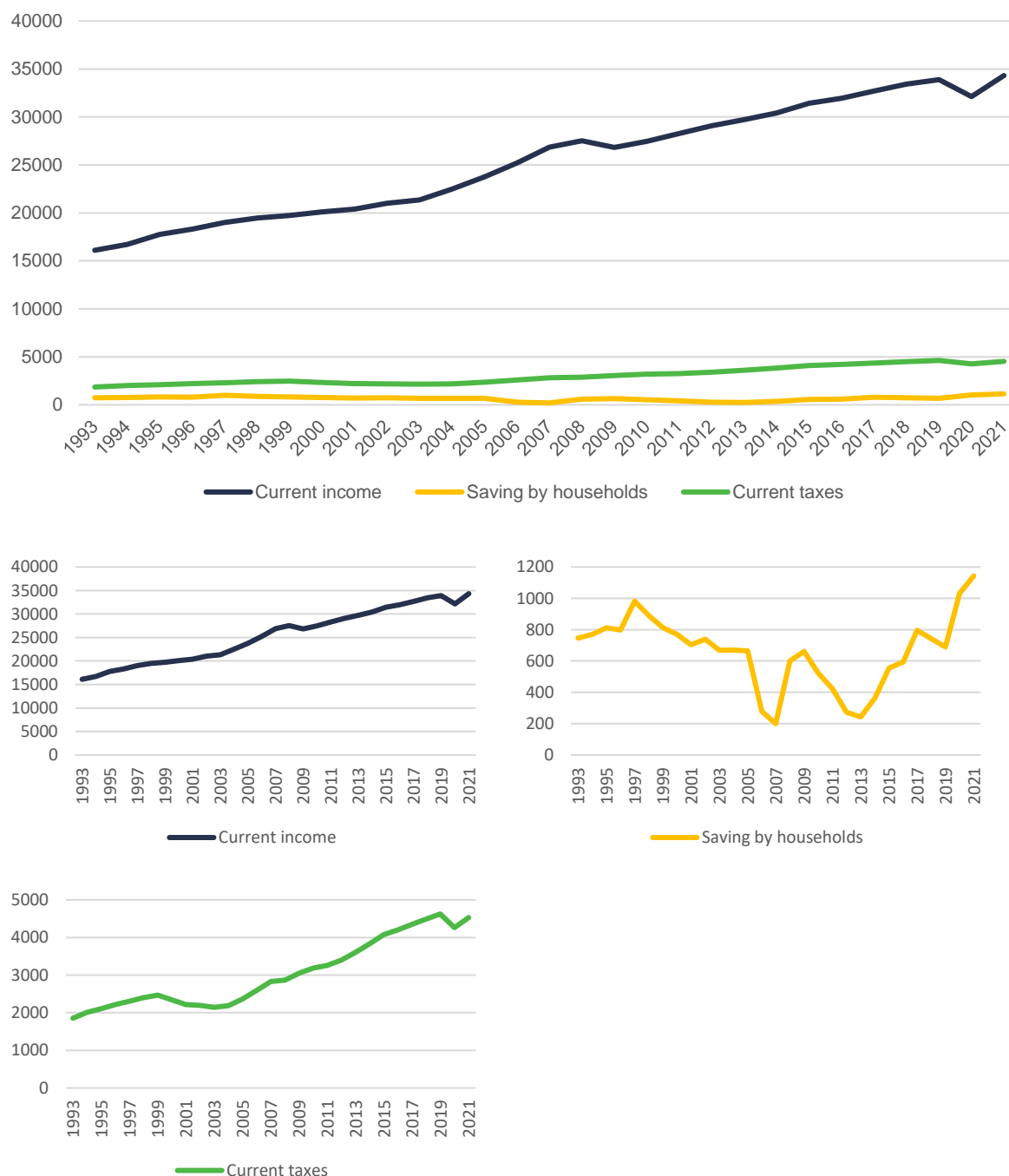


Source: Quantec Regional indicators

c. Current income and savings

Changes in current income and savings are key contributors to economic growth and investment. Figure 2-23 shows how income increased while savings remained relatively modest. Savings remained positive but clearly responded to economic downturns. As a result, savings are decreasing relative to increases in income. Not only do households put their long-term security at risk, but it also deprives the economy of much-needed resources. Savings directly impact the long-term ability of households to meet their commitments, including paying for municipal services. Moreover, sharp increases in income tax largely offset the benefits of increasing income.

Figure 2-23: Income, savings and taxes



Source: Quantec Regional indicators

2.7.3 GVA and employment

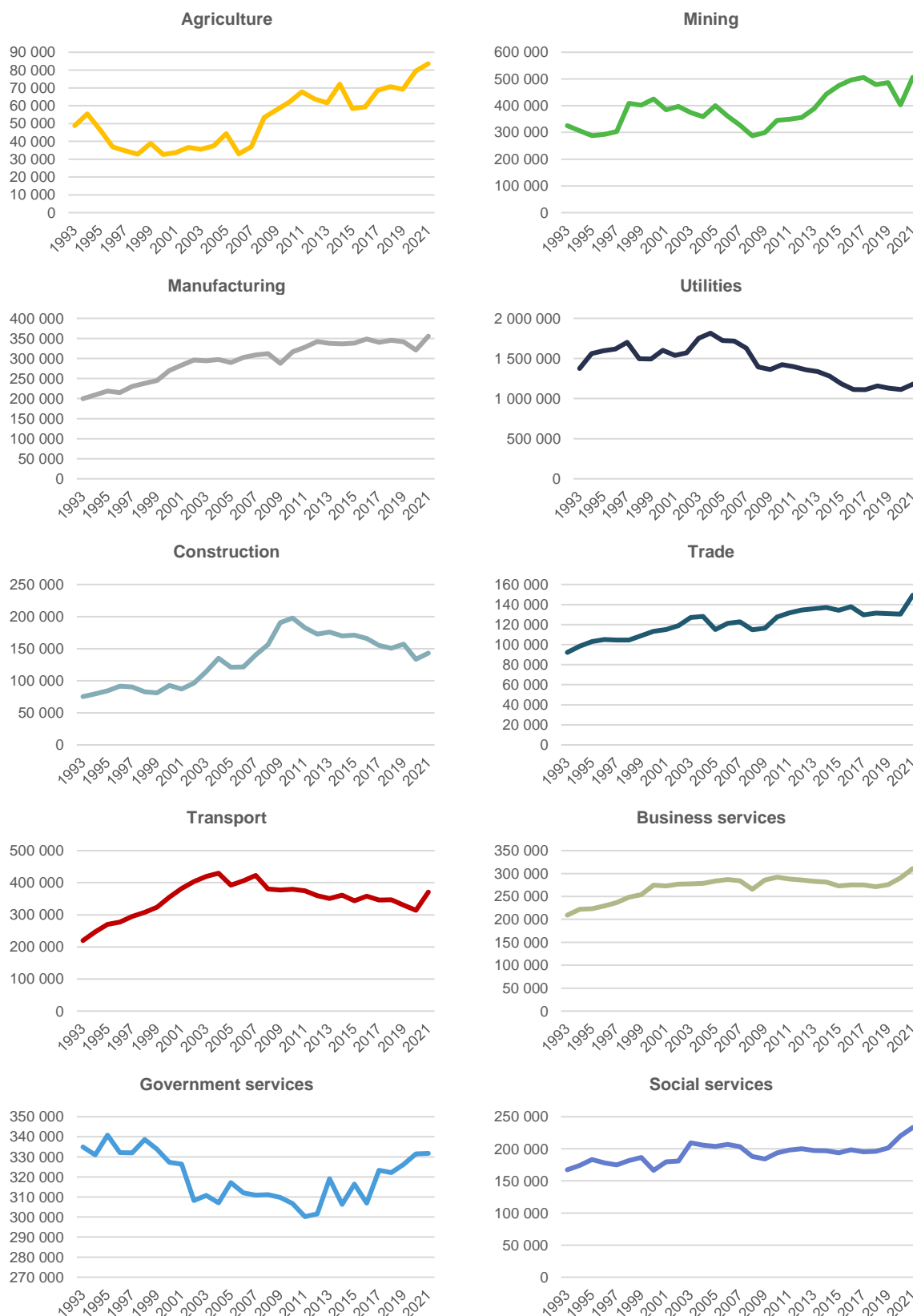
The last aspect of employment is its relation to GVA. The GVA/employment ratio change is an indicator of the extent to which a sector is capital intensive or at least its propensity to shed labour over the long term.

Table 2-27: GVA per employment

	Agriculture	Mining	Manufacturing	Utilities	Construction	Trade	Transport	Business service	Government services	Social services	Average per worker
1993	48 862	324 976	199 640	1 375 719	75 272	92 278	219 646	209 188	334 945	167 569	167 044
1994	55 425	306 072	208 852	1 559 401	79 527	98 522	246 912	222 312	330 985	174 192	174 983
1995	46 526	287 512	218 570	1 595 923	84 482	103 160	269 837	223 127	340 829	183 509	180 258
1996	36 801	292 842	215 009	1 619 295	91 387	105 008	277 502	229 455	332 149	178 276	178 656
1997	34 724	303 083	230 006	1 699 625	90 278	104 585	294 604	236 716	332 041	175 105	182 228
1998	32 833	408 464	238 117	1 495 605	82 883	104 718	307 322	248 598	338 678	181 923	186 601
1999	38 806	402 194	245 129	1 494 849	81 111	108 958	323 273	254 067	333 730	186 440	191 438
2000	32 643	424 588	270 060	1 602 046	92 648	113 419	354 812	274 698	327 284	166 451	191 433
2001	33 626	385 225	283 007	1 537 693	87 271	115 171	382 058	273 200	326 417	179 778	198 612
2002	36 595	397 703	296 065	1 570 654	96 183	119 022	403 315	276 876	308 237	180 775	203 503
2003	35 545	374 366	293 935	1 752 510	114 415	127 152	419 732	277 220	310 796	209 180	214 248
2004	37 439	359 073	297 152	1 815 409	134 893	128 055	429 597	278 799	307 052	205 625	218 287
2005	44 332	399 898	289 912	1 722 007	121 270	115 181	392 050	283 806	317 117	203 721	213 445
2006	32 946	360 644	302 222	1 715 521	121 601	121 286	405 634	286 714	312 016	207 061	214 838
2007	36 978	327 604	309 032	1 628 323	140 311	122 887	422 697	284 309	310 892	203 226	219 308
2008	53 442	287 442	312 273	1 395 279	156 431	114 891	380 362	265 597	311 142	188 285	214 785
2009	57 724	299 091	287 767	1 361 848	190 798	116 470	377 312	285 565	309 805	183 977	216 608
2010	62 061	345 905	316 373	1 423 065	197 645	127 623	379 504	292 208	306 634	193 895	230 181
2011	67 742	349 093	328 110	1 396 218	182 581	131 731	374 430	288 170	300 185	198 329	233 012
2012	63 695	356 290	342 240	1 358 052	172 627	134 485	359 527	285 700	301 533	200 045	233 436
2013	61 615	388 466	337 902	1 335 943	175 714	135 907	351 041	283 295	319 118	197 325	232 739
2014	72 105	443 696	336 665	1 278 379	170 030	137 015	361 062	281 636	306 337	196 903	233 714
2015	58 485	475 034	338 264	1 183 501	171 100	134 309	343 706	272 982	316 353	193 920	227 721
2016	59 235	496 431	348 413	1 111 566	165 710	137 840	358 338	275 034	306 915	198 543	231 497
2017	68 660	505 603	340 225	1 110 876	154 916	129 592	346 391	274 964	323 334	195 450	227 511
2018	70 619	478 899	345 509	1 159 170	150 725	131 370	346 567	271 491	322 114	196 179	228 240
2019	69 268	486 737	341 170	1 129 718	156 947	130 925	330 169	275 502	326 215	201 522	229 239
2020	79 375	403 420	321 078	1 114 347	133 665	130 505	313 995	290 194	331 443	220 047	231 693
2021	83 540	506 010	355 681	1 181 400	142 899	149 313	370 714	310 927	331 713	233 281	253 999
Growth	1,75%	0,78%	1,71%	-0,75%	2,07%	1,25%	1,28%	1,18%	-0,04%	0,98%	1,18%

Source: Quantec Regional Indicators 2021/ SDSA 2021

Figure 2-24: GVA per employment opportunity at constant 2015 prices



Source: Quantec Regional Indicators 2021

GVA per labour unit in the agriculture sector has seen an increase of 1.75% of average growth, the highest in the municipality. This, in conjunction with the decrease in the labour force in the agricultural sector, indicates that the sector has been making large shifts towards more capital-intensive practices this is similar to the mining industry. Government

services have become more labour-intensive, correlating with government employment growth over the past two decades. Utilities and government services have decreased their GVA output per labour unit, with the utilities sector showing the largest decrease.

2.7.4 Drivers in the economy

Priority investment should support those economic sectors that drive local development and those it supports. Finding the municipality's economic drivers is done using a basic/non-basic analysis. The comparative advantage indicates a relatively more competitive production function for a product or service in that local economy than the economy of the other comparable local economies. Therefore, the local economy produces a product or service more efficiently than the comparable economy. Comparisons between the local and provincial, and national economies are shown below.

An indication of the comparative advantage of an economy is its location quotient. (LQ) or basic/non basic ratio. If the LQ is one or more in a sector of the economy, that sector has a comparative advantage to the same sector in the comparable economy and is thus regarded as a driver of local economic development. On the other hand, if the location quotient is less than one, then the sector is a local supporting or service sector necessary for supporting the sectors sector with a comparative advantage.

As a comparative advantage measure, the location quotient effectively provides a tool to identify critical sectors driving a local economy. It employs an offset principle based on the employment figures within the various sub-sectors of the subject local and aggregate economy.

The analysis utilises two main components, basic and non-basic activities:

- Basic activities generate a surplus (i.e. a location quotient larger than 1) for the local economy and, as a result, can export its goods/services to bring in wealth from the outside.
- Non-basic activities support the basic activities and do not produce a surplus of goods/services (i.e. a location quotient smaller than 1).

The location quotient is a ratio between employment within a sub-sector of the economy divided by the total employment within the local/regional/national economy. A ratio greater than one suggests that the specific economy employs proportionally more people within the local economy than the economy it is being compared. As a result, it generates more than what can be consumed locally, and the sector is thus a net exporting sector. This implies that it generates income for the local economy (i.e. a comparative advantage and key driver). The opposite is then valid for ratios smaller than one.

The tables below provide a comparative location quotient for the local municipality.

The municipality shows a comparative advantage in multiple sectors within the national economic context. The manufacturing sector represents the municipality's best sector. The municipality shows a further advantage in three other sectors. It is also interesting to note that the other local municipalities and districts have varying profiles and mining is the best performing sector in most of the other municipalities.

Table 2-28: Basic/Non-basic ratios measured against the national economy in 2021

	Agriculture	Mining	Manufacturing	Utilities	Construction	Trade	Logistics	Business service	Government services	Community services
Gauteng	0,17	0,27	1,11	0,85	0,90	0,88	1,04	1,22	0,84	1,15
West Rand	0,40	2,41	1,39	0,74	1,07	1,02	0,93	0,83	0,57	0,92
Mogale City	0,53	0,43	1,68	0,85	1,21	1,08	0,97	0,92	0,62	1,02
Randfontein	0,37	1,14	1,43	0,78	0,97	1,09	1,27	0,90	0,62	0,95
Westonaria	0,26	5,14	1,20	0,62	0,88	0,87	0,94	0,68	0,49	0,65

Merafong City	0,27	5,61	0,89	0,55	0,98	0,92	0,59	0,69	0,48	0,85
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Source: Quantec Regional Indicators 2021

When comparative advantage is measured against the provincial economy in Table 2-29 below, the municipality has gained two sectors. On the other hand, agriculture is in this analysis the municipality's best sector.

Table 2-29: Basic/Non-basic ratios measured against the provincial economy in 2021

	Agriculture	Mining	Manufacturing	Utilities	Construction	Trade	Logistics	Business services	Government services	Community services
West Rand	2,35	8,93	1,25	0,86	1,19	1,15	0,89	0,68	0,68	0,80
Mogale City	3,09	1,58	1,52	1,00	1,34	1,22	0,93	0,75	0,74	0,89
Randfontein	2,14	4,24	1,29	0,91	1,08	1,24	1,22	0,73	0,74	0,82
Westonaria	1,52	19,08	1,08	0,73	0,98	0,99	0,90	0,55	0,58	0,56
Merafong City	1,55	20,80	0,80	0,65	1,10	1,05	0,57	0,56	0,56	0,74

Source: Quantec Regional indicators 2021

Measured against the other municipalities within the district, the municipality's strong agricultural advantage is still the best performing sector, as seen in Table 2-30 below. This assessment highlights and underlines the importance of recognising spatial differences and not treating the municipality as a uniform economic and demographic entity.

Table 2-30: Basic/Non-basic ratios measured against the district economy in 2021

	Agriculture	Mining	Manufacturing	Utilities	Construction	Trade	Logistics	Business services	Government services	Community services
Mogale City	1,31	0,18	1,21	1,15	1,13	1,06	1,05	1,11	1,09	1,11
Randfontein	0,91	0,47	1,03	1,06	0,91	1,08	1,37	1,08	1,09	1,03
Westonaria	0,65	2,14	0,87	0,85	0,82	0,86	1,01	0,82	0,85	0,71
Merafong City	0,66	2,33	0,64	0,75	0,92	0,91	0,64	0,83	0,83	0,92

Source: Quantec Regional Indicators 2021

2.7.5 Economic specialisation and vulnerability

The size of the economy and the sectors driving the local economy are essential. However, the local economy's vulnerability is equally important, and its ability to sustain itself through economic cycles will determine sustainability at many levels of development and operations. Economic diversity is one of the significant factors that determine risk. It simply implies that the more diverse an economy is, the more resilient it is when one or more sectors are affected by external change and pressures on the local economy. Diversity in an economy is measured through the tress index. A tress index of zero represents a totally diversified economy. On the other hand, the higher the index (closer to 100), the more concentrated or vulnerable the region's economy is to exogenous variables, such as adverse climatic conditions, commodity price fluctuations, etc.

Table 2-31: Tress index based on 10 sectors of the Standard Industrial Classification

Geography	1995	2000	2005	2010	2015	2019	2020	2021
South Africa	35,6	37,1	38,2	39,2	39,5	40,2	40	40,3
Gauteng	45,1	48,6	49,6	50,9	51,5	51,6	52,1	52,5
West Rand	63	58,2	49,4	42,7	39,3	39,6	39,9	40,4
Mogale City	44,6	46,3	47	47,1	46,6	46,8	47	47,7

Randfontein	47,8	43,5	40,2	40,1	41,3	41,5	42	43
Westonaria	84,9	80,9	71,1	59,7	50,6	50,8	50,2	47,4
Merafong City	84,6	81,3	72,6	62,4	53,9	54	53,4	50,3

Source: Quantec Regional Indicators 2021

The municipality has become slightly diversified over time. The municipality with a tress index of 47.7 shows that the economy is relatively diverse. The municipality's tress index is also second highest among the other local municipalities within the West Rand District Municipality.

2.7.6 Fixed capital formation and capital stock

Gross domestic fixed investment indicates the extent to which businesses and governments are prepared to invest in an area. On the one hand, it reflects business confidence and is also an indicator of growth expectations. On the other hand, it implies that if there are high growth expectations, investment will increase. The opposite is then also true. However, one should remember that local figures must be viewed in terms of the bigger national and even international picture in an open economy. Any investment in a local economy combines general risk perceptions and market expectations.

a. Gross fixed capital formation

Fixed capital formation, formerly gross domestic fixed investment, refers to increasing fixed capital stock. Fixed capital is assets used in the productive process and holds for over a year. Fixed capital formation does not include current raw materials used in the productive process. Therefore, fixed capital can also be called Property, Plant, and Equipment (PP&E). For example, if a firm builds a new factory or invests in new machines, this will be an accumulation of fixed capital.

- Gross fixed capital formation (net investment) is the net amount of fixed capital accumulation.
- It measures the increase in the capital stock less the disposal of fixed assets.
- It excludes land purchases.
- It excludes depreciation.

Gross Fixed Capital formation is included in the expenditure approach to national income accounting. The table below shows the gross capital formation for the municipality.

Table 2-32: Gross capital formation (R' million at 2015 prices)

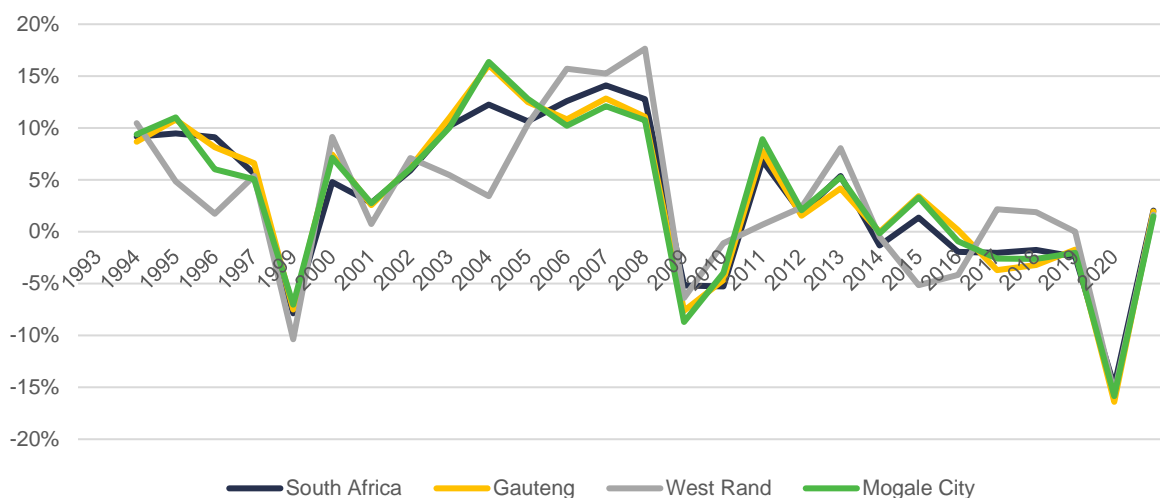
	1995	2000	2005	2010	2015	2020	2021
Mogale City	2 694	3 114	4 902	5 880	7 097	5 498	5 579
Mogale City (change per annum)		3,12%	11,49%	3,99%	4,14%	-15,85%	1,48%
Randfontein	1 103	1 243	1 787	2 412	2 784	2 226	2 255
Westonaria	1 204	1 395	1 492	2 666	2 497	2 346	2 390
Merafong City	2 365	2 784	2 907	5 143	4 543	4 184	4 263
Total for West Rand	7 366	8 535	11 088	16 101	16 920	14 254	14 488
Change rate per annum		3,17%	5,98%	9,04%	1,02%	-15,57%	1,64%

Source: Quantec Regional Indicators 2021

Fluctuations in this indicator are often considered to show something about future business activity, business confidence, and expected economic growth. In times of economic uncertainty or recession, business investment in fixed assets will typically be reduced since it ties up additional capital for a longer interval of time, with a risk that it will not pay itself off (and fixed assets may, therefore, be scrapped faster). Conversely, in times of robust economic growth, the fixed investment will increase across the board because the observed market expansion makes it likely to be profitable.

The figure below shows the rate at which capital formation took place. Although the municipal area broadly follows the same trend as South Africa, the local variations are more pronounced and highlight a greater sensitivity or vulnerability to economic changes.

Figure 2-25: Rate of change in gross capital formation



Source: Quantec Regional Indicators 2021

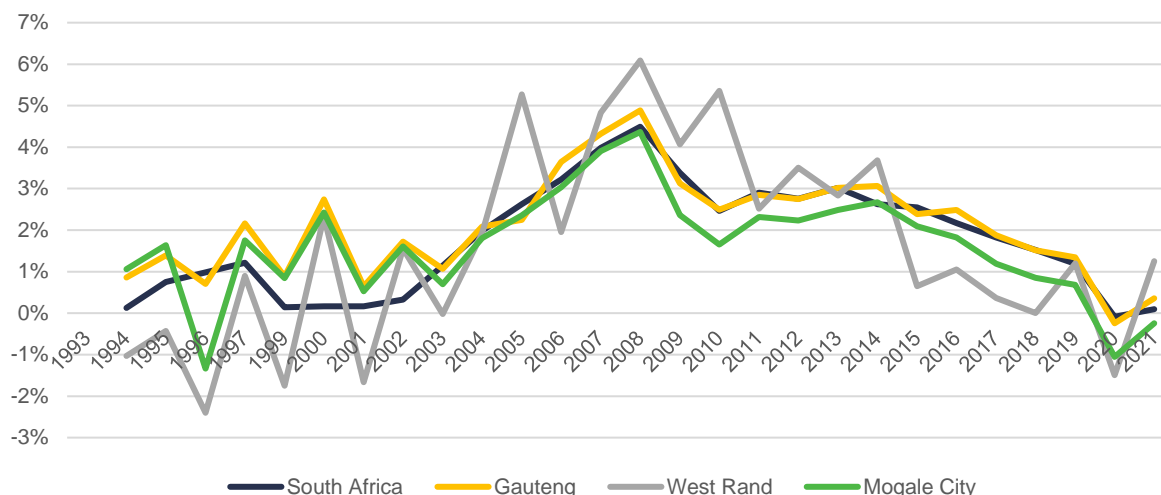
b. Fixed capital stock

The capital stock represents the asset base of the local economy. The table below shows the extent of capital growth, and the figure below the comparative growth rates between the Municipality and the District. The fixed capital stock has mostly increased on average year after year, but the rate of this change shows more dramatic changes. The rate of change in the municipality's fixed capital stock fluctuated substantially but peaked in 2008, whereafter it declined. Capital stock growth reached a low in 2001.

Table 2-33: The extent of fixed capital stock (R' million at 2015 prices)

	1995	2000	2005	2010	2015	2020	2021
Mogale City	47 559	50 489	54 115	62 911	70 689	73 174	72 996
Mogale City (change per annum)		1,23%	1,44%	3,25%	2,47%	-0,21%	-0,05%
Randfontein	18 550	18 824	20 134	24 382	28 091	29 317	29 577
Westonaria	16 533	16 688	18 125	24 703	28 904	29 065	29 921
Merafong City	32 624	33 264	35 396	46 836	53 180	51 304	52 654
Total for West Rand	115 266	119 265	127 769	158 833	180 864	182 860	185 148
Change rate per annum		0,69%	1,43%	4,86%	2,77%	-1,50%	1,25%

Source: Quantec Regional Indicators 2021

Figure 2-26: Rate of change in fixed capital stock


Source: Quantec Regional Indicators 2021

c. Consumption of fixed capital

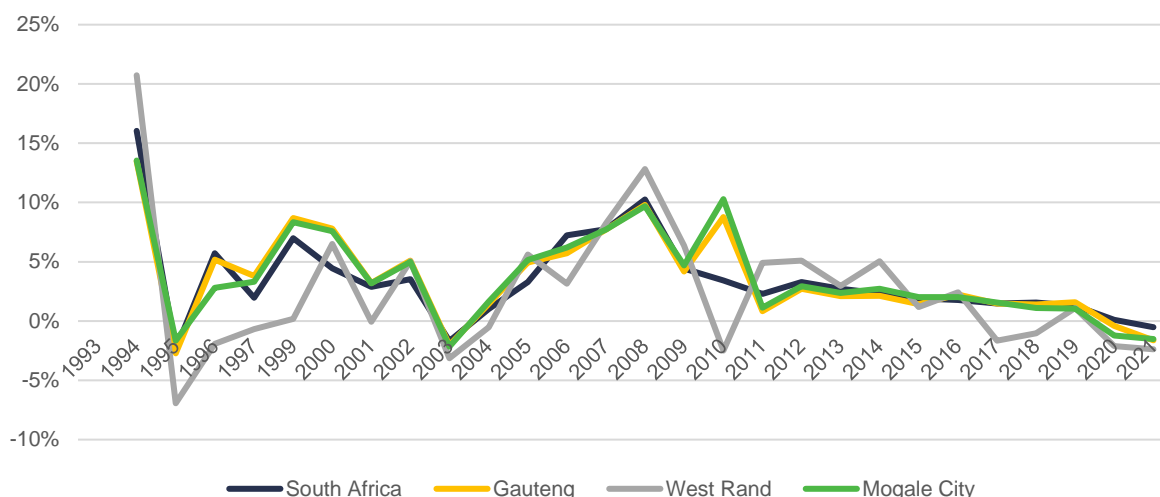
Consumption of fixed capital remains relatively constant for the assessment period. The following table shows how the consumption of fixed assets in the local economy has changed. Based on consumption rates, the asset base's expected useful life (EUL) in Mogale City is 14.5 years compared to the average for South Africa of 13.5 years. The EUL of assets shows a continuous decrease, with a 22.6-year EUL in 1995. The decrease in the EUL of assets shows either serious maintenance issues, a general lack of new capital investments, or a combination of both.

Table 2-34: Consumption of capital stock per municipality (R' million at 2015 prices)

	1995	2000	2005	2010	2015	2020	2021
Mogale City	2 105	2 861	3 240	4 694	5 242	5 480	5 397
Mogale City (change per annum)		7,2%	2,7%	9,0%	2,3%	-0,2%	-0,3%
Randfontein	955	1 181	1 309	1 856	2 148	2 212	2 157
Westonaria	1 430	1 440	1 468	1 763	2 325	2 219	2 145
Merafong City	2 788	2 847	2 878	3 308	4 306	3 919	3 803
Total for West Rand	7 278	8 328	8 895	11 621	14 021	13 831	13 503
Change rate per annum		2,89%	1,36%	6,13%	4,13%	-2,12%	-2,37%

Source: Quantec Regional Indicators 2021

Figure 2-27: Rate of change in consumption of fixed capital



Source: Quantec Regional Indicators 2021

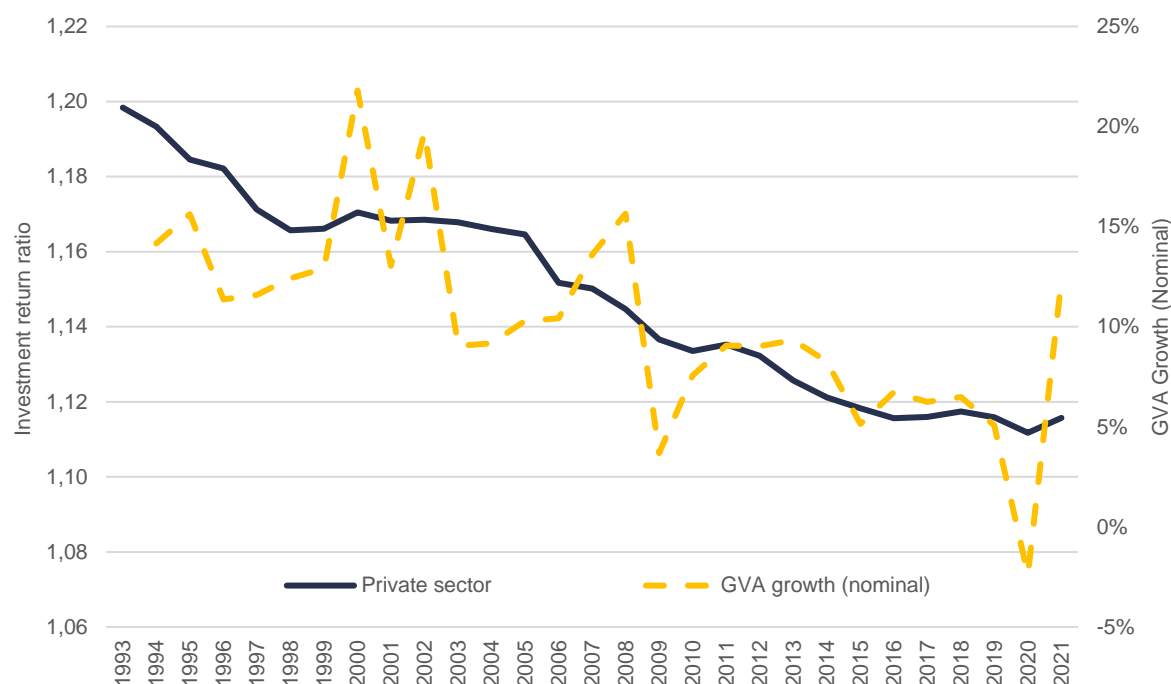
d. Return on capital investment

South Africa, and for that matter, the world, has a near dogmatic faith in infrastructure investment as the holy grail for economic growth and development. Infrastructure is part of the capital stock in the economy. Capital stock represents the country's asset base that produces goods and services. The value of goods and services produced is measured as the gross domestic product (GDP), or if taxes and transfers in the economy are excluded, it is expressed as Gross Value Added or GVA. The basic assumption is that growth in the asset base (capital stock) will lead to the production of more goods and services and hence economic growth.

The relationship between the asset base and the production of goods and services in the economy assumes that a sector's contribution to economic growth is proportionate to its asset base. Therefore, the impact of infrastructure investment can be measured through an investment ratio which relates the proportion of capital stock in a sector to the proportionate contribution of the sector to GVA. If this ratio is greater than one, then it implies that expanding capital stock in a sector contributes to economic growth or if it is smaller than one, it implies that capital investment in the sector is a drain on the economy.

The next figures show the relationship between investment returns in the government and private sectors in the municipality and how the investment ratios relate to nominal GVA growth rates between 1993 and 2021.

Figure 2-28: Investment return ratios and GVA growth from 1993 to 2021 – Private Sector

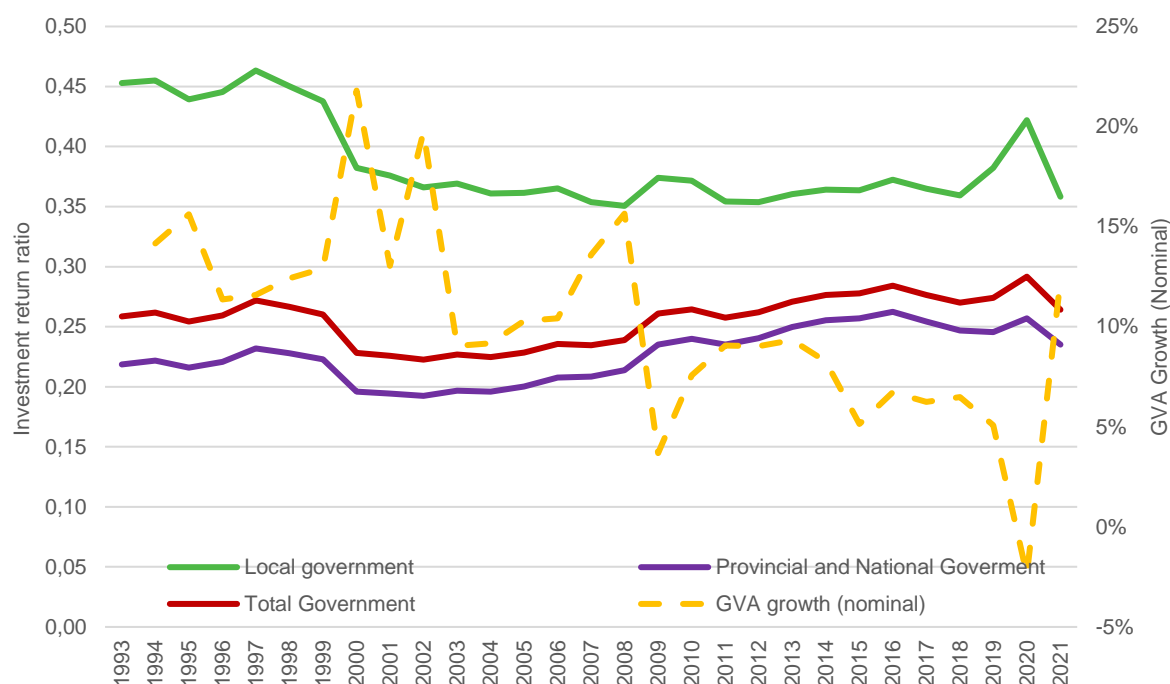


Source: Quantec Regional Indicators 2021

The private sector component of the economy showed a short-term decline between 1993 and 1997s and after that, it showed an improving investment ratio to 2005, whereafter it declined. The strong correlation between this decline and GVA growth is evident and indicates how the private sector responds to market signals. Notably, the ability of the private sector to contribute to economic growth through its available capital stock is falling.

Government investment ratios and the impact of infrastructure-led investment have two important features. Firstly, the ratios are anti-cyclical and show the opposite trend of the private sector. This implies that there is no clear economic rationale for government investment and as the economy contracts government continue its spending irrespective of economic realities. The results are rising government debt and an increased economic role with no apparent positive growth results. This is clear in the trends post-2008, which corresponds with the strong rise in government debt as a percentage of GDP and related socio-political challenges.

Figure 2-29: Investment return ratios and GVA growth from 1993 to 2021 – Public Sector



Source: Quantec Regional Indicators 2021

The second aspect is that the local government sector shows signs of higher economic returns on infrastructure investment than the provincial and national governments. The provincial and central governments' fixed capital investment clearly yields lower returns for economic growth. As the local government sector trend shows, the closer the investment decisions are to the intended beneficiaries, the better the chances for a positive economic impact. The continuous trend of centralisation on the pretext of a lack of capacity in local government does not bode well for economic growth. Serious capacity problems hamstringing the local government's possible positive investment yield.

The private sector is an essential driver of economic development. Furthermore, the private sector remains very sensitive and responsive to market signals. As a result, investors have confidence in economic prospects, and the factors determining confidence lie in the country's political climate rather than in the economy itself.

2.8 Settlement dynamics and change

The municipality is a combination of various changing systems. This shows in the growth and movement of people.

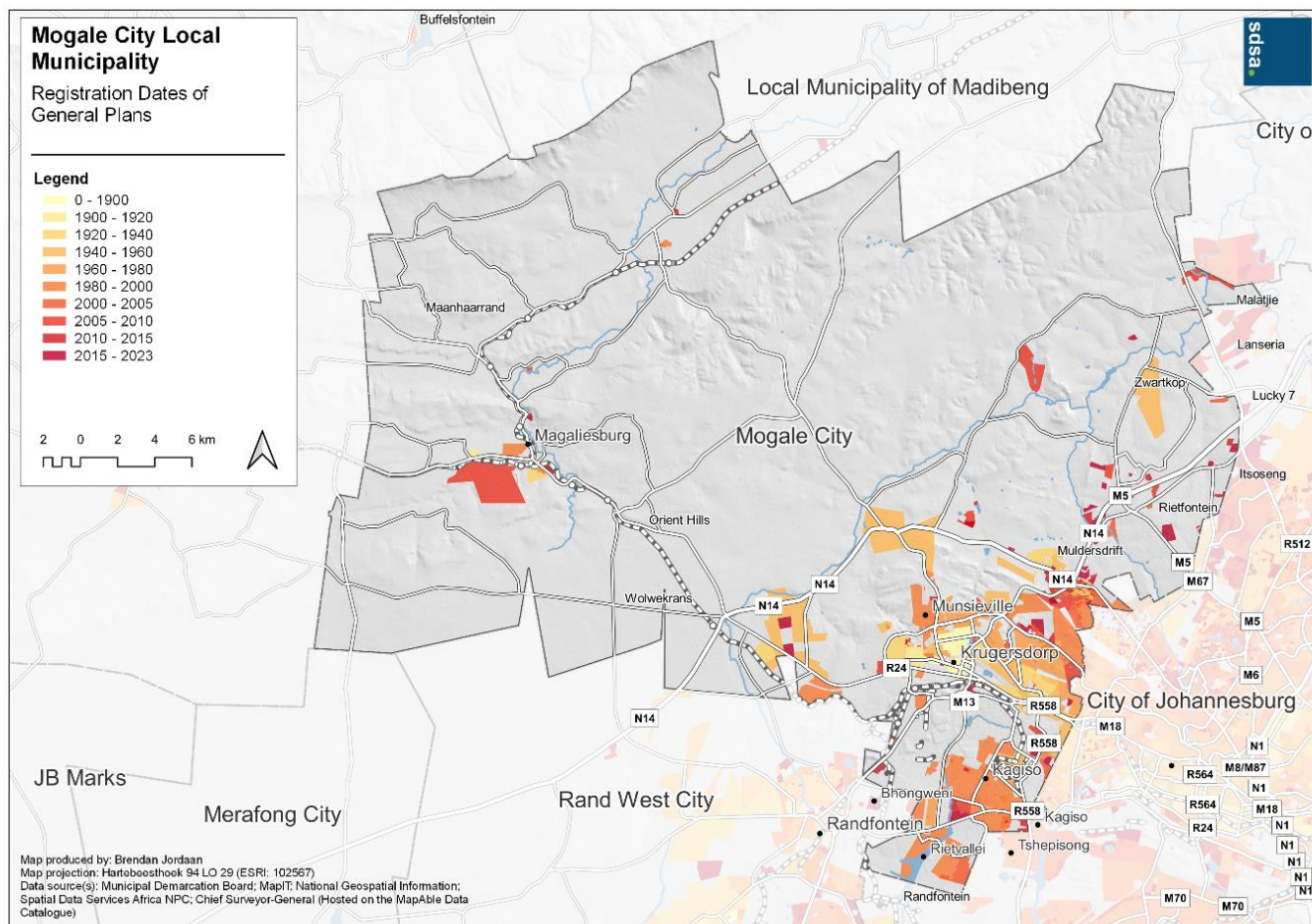
This section shows how and to what extent growth has occurred in the municipality and investigates the municipal areas' historical development, changing settlement patterns, and people's daily movement to assess the spatial realities. This should show the alignment between the proposed spatial policies and the existing situation to determine if these policies are realistic and manageable.

2.8.1 Historical growth

The municipality's historical growth is assessed by mapping the age of general plans, as seen in Map 16. This gives some insight into the development structure and history of the municipality and how some policies might have shaped the municipality's spatial structure. Map 16 shows how the oldest formal settlement in the municipality relates to the towns of Krugersdorp. The town of Magaliesburg and the agricultural holdings of Wolfelea and Swatzkop.

Showing the age of general plans within the municipality does not provide the entire picture, as many people are settled in agricultural areas and often in informal areas. The age of general plans reflects only the formal development that has taken place in the municipality.

Map 2-16: Age of general plans



Source: Surveyor General

2.8.2 Settlement footprint

This section deals with land cover. The dataset has been derived from multi-seasonal Landsat 8 imagery, using operationally proven, semi-automated modelling procedures developed specifically for this dataset's generation based on repeatable and standardised modelling routines. The data is at a 30m resolution, and as a result, the accuracy of the query results is affected accordingly.

a. Primary economic activities

The chapter dealing with the municipality's economic profile clearly showed the importance of primary economic activities. These activities cover 25.5% of the municipality's total area. Overall, there has been a 2.3% decrease in land cover related to primary economic activities from 1990 to 2018 in the municipality. Cultivated commercial fields highlight the importance of agriculture in the municipality. Cultivated commercial fields and small holdings show a decline in land cover, decreasing by 8.5% and 14.9%, respectively.

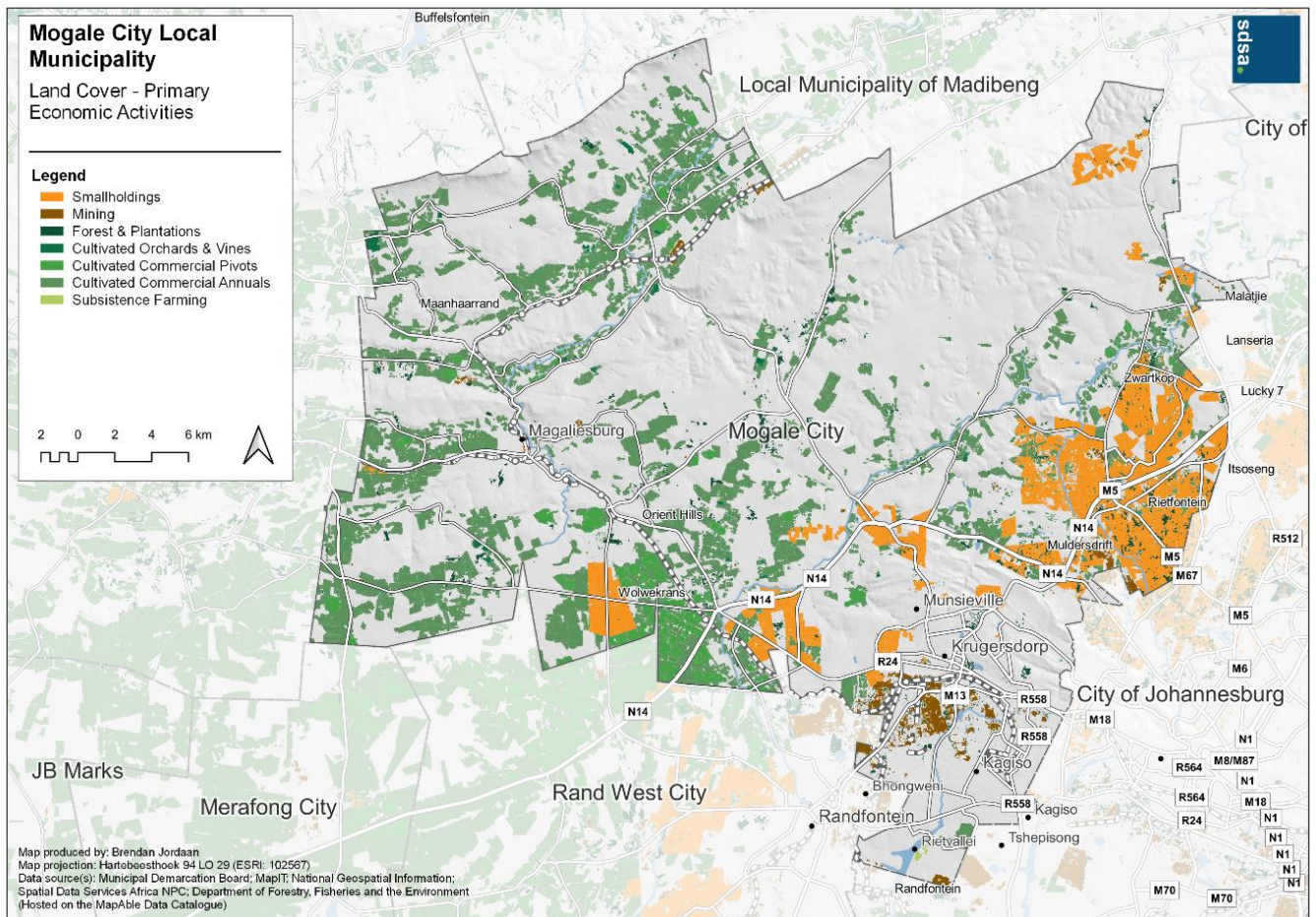
Table 2-35: Landcover: Primary economic activities

Land cover category	Extent of cover 1990 (ha)	%	Extent of cover 2014 (ha)	%	Extent of cover 2018 (ha)	%	% change
Cultivated commercial fields	19 792	44,3%	21 452	46,1%	18 115	38,9%	-8,5%
Cultivated commercial pivot	402	0,9%	1 901	4,1%	2 193	4,7%	446,2%
Cultivated orchard and vines	147	0,3%	312	0,7%	398	0,9%	170,9%
Sugarcane		0,0%		0,0%		0,0%	0,0%

Smallholdings	10 908	24,4%	9 912	21,3%	9 285	19,9%	-14,9%
Subsistence farming	2	0,0%	37	0,1%	56	0,1%	2756,9%
Forests & Plantations	2 686	6,0%	1 589	3,4%	2 899	6,2%	7,9%
Mining	1 191	2,7%	1 157	2,5%	1 390	3,0%	16,7%
Total	35 127	78,6%	36 359	78,1%	34 336	73,7%	-2,3%

Source: SDSA (MapAble 2020) based on Department of Environmental Affairs

Map 2-17: Landcover: Primary economic activities



Source: SDSA (MapAble 2020) based on the Department of Environmental Affairs

b. Human settlement activities

The following table lists the extent of land cover in the municipality related to human settlement activities. The results are expressed as hectares covered by a category, and the data for 1990 and 2014 are directly comparable. Overall, the footprint of human settlement-related activities has increased by 2.1%. This accounts for 1 211 hectares. These activities cover a total of 5.18% of the total municipal area.

Most of the categories show increases in footprint, with urban township increasing by 62.1% and urban residential by 15.2%. Urban informal shows significant growth, but this is only due to the small base from which this category is measured. The most significant contributor to human settlement activities is urban residential. This category covers 2 544 hectares, and this is 1.9% of the land cover of the municipality. This is illustrated in Map 2-18.

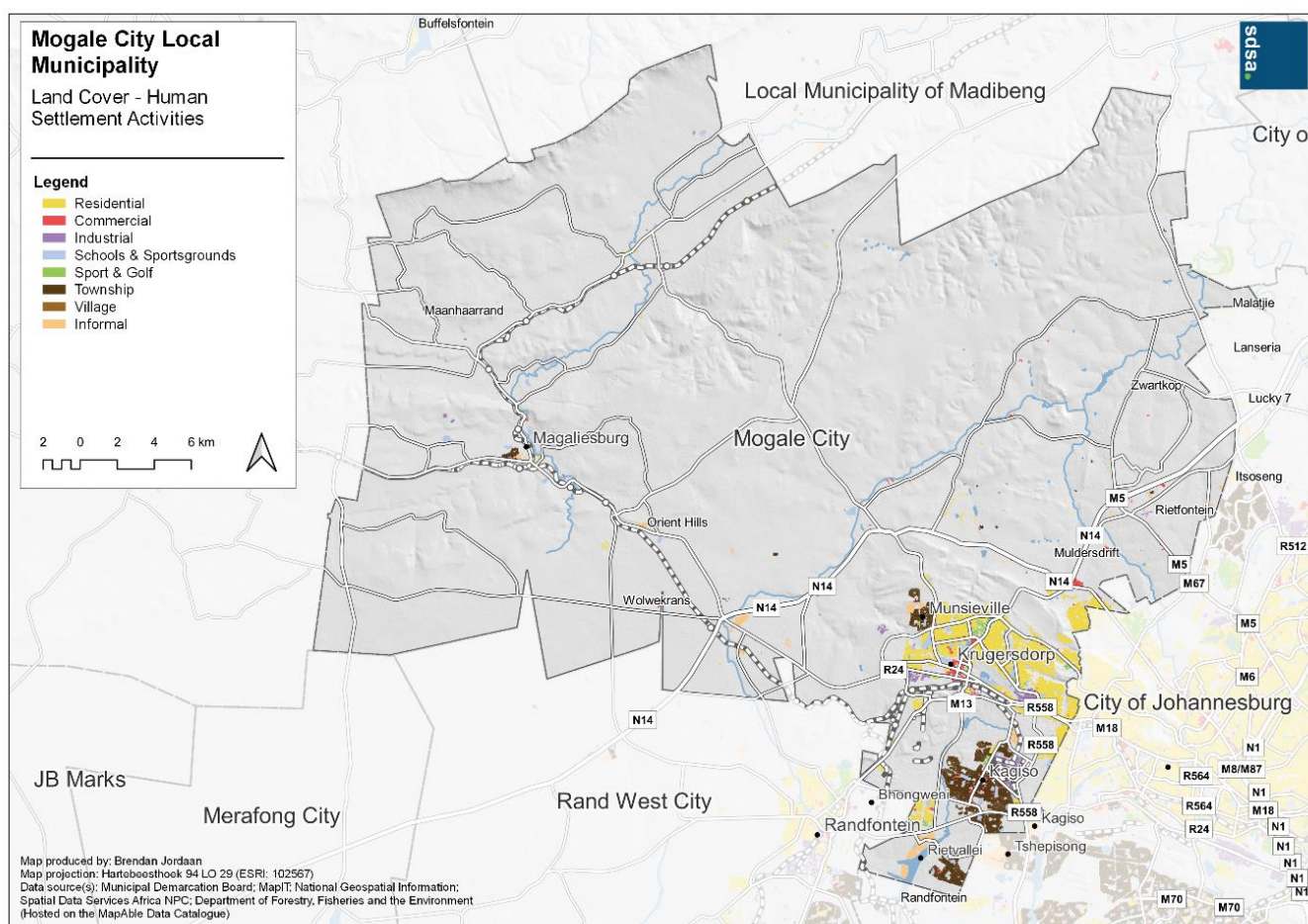
Table 2-36: Landcover: Human settlement activities

Land cover category	Extent of cover 1990 (ha)	%	Extent of cover 2014 (ha)	%	% change
Urban built-up	1 404	3,1%	1 478	3,2%	5,3%

Land cover category	Extent of cover 1990 (ha)	%	Extent of cover 2014 (ha)	%	% change
Urban commercial	330	0,7%	370	0,8%	12,1%
Urban industrial	485	1,1%	398	0,9%	-17,8%
Urban residential	2 208	4,9%	2 544	5,5%	15,2%
Urban townships	737	1,6%	1 194	2,6%	62,1%
Urban informal	6	0,0%	317	0,7%	4789,4%
Rural villages		0,0%		0,0%	0,0%
Urban sports and golf	119	0,3%	156	0,3%	31,0%
School and sports grounds	474	1,1%	516	1,1%	8,8%
Total	5 763	12,9%	6 974	15,0%	21,0%

Source: SDSA (MapAble 2020) based on the Department of Environmental Affairs

Map 2-18: Landcover: Human settlement activities

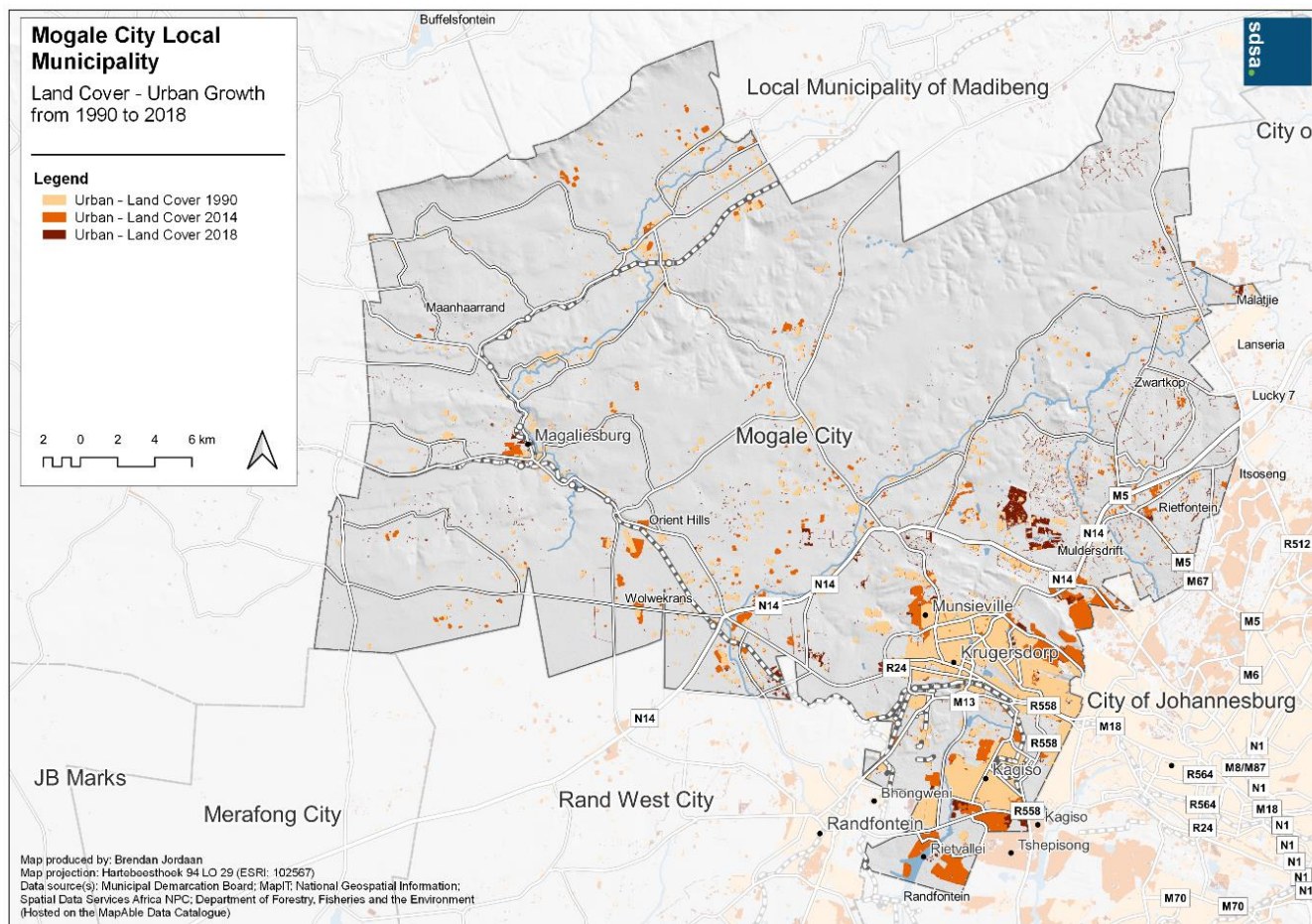


Source: SDSA (MapAble 2020) based on the Department of Environmental Affairs

c. Urban growth and expansion

Map 2-19 below shows the municipality's physical expansion of urban-related growth from 1990 to 2014. The map clearly indicates peripheral growth. Most of this growth has occurred around Kagiso and Rietvallei and a lot of growth has taken place in the rural parts north of Krugersdorp.

Map 2-19: Settlement growth 1990 – 2014



Source: SDSA (MapAble 2020) based on the Department of Environmental Affairs

d. Area of municipality covered by EA types

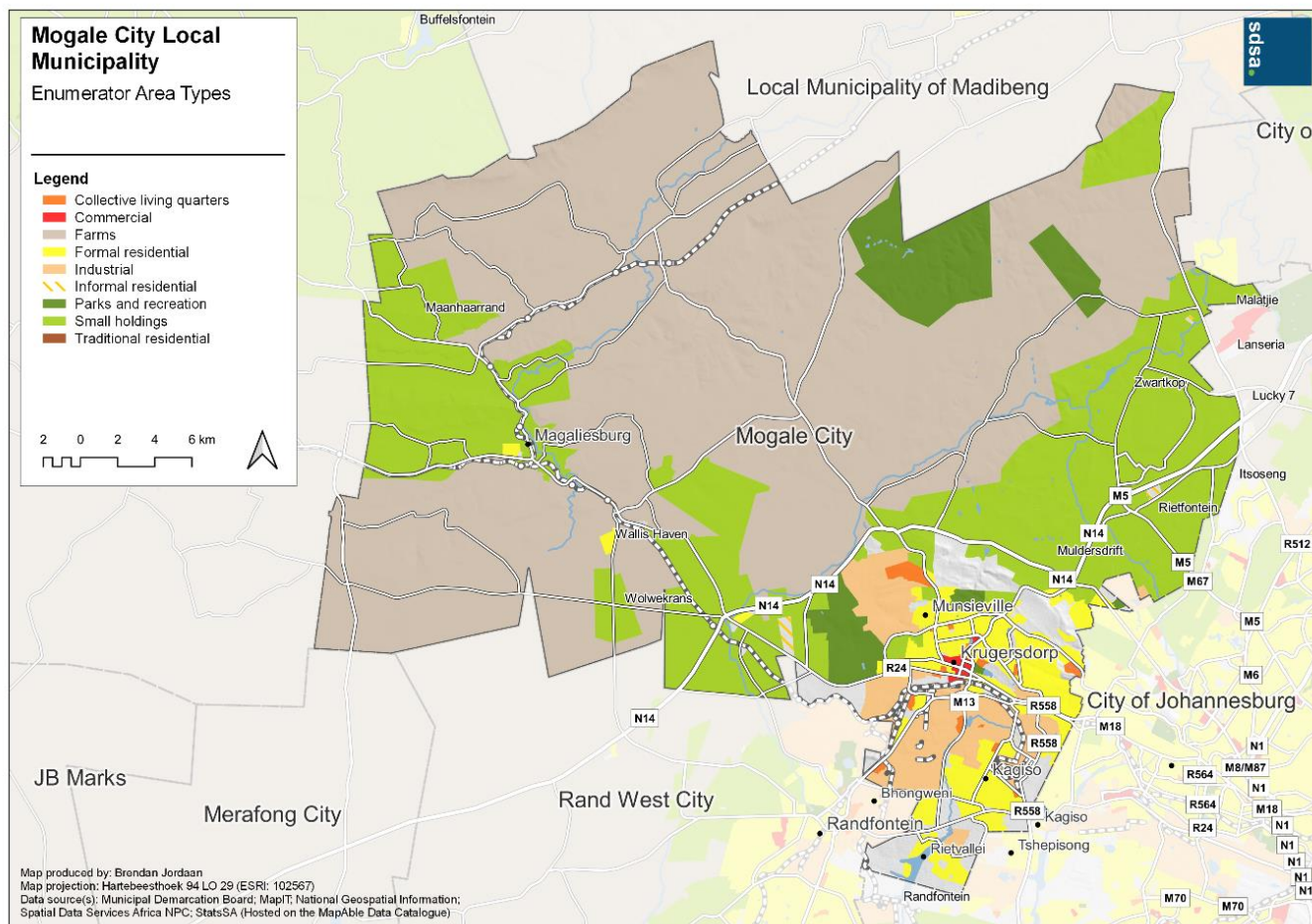
An enumerations area (EA) is the smallest geographical unit (unit of land) into which the country is divided for enumeration. Enumeration areas contain between 100 to 250 households. Statistics South Africa classifies enumeration areas that give an indication of settlement typologies in a municipal area.

Table 2-37: Ea types 2011

EA Type	Area in hectares
Collective living quarters	537
Commercial	192
Farms	75 519
Formal residential	5 971
Industrial	5 391
Informal residential	372
Parks and recreation	6 042
Small holdings	35 653
Vacant	4 848

Source: StatsSA 2020

Map 2-20: EA Types



Source: StatsSA 2020

2.8.3 Points of interest and distribution of activities

MapIT (<https://mapit.co.za/>) classifies points of interest into 227 categories. It is not practical to do a listing in a report, and the categories were reclassified to reflect 17 report categories. The tables below show the instances for the 17 report categories. However, the points of interest included under each category are also listed. It is possible to extract specific points of interest showing commercial names and addresses if necessary.

Points of interest can be an essential indicator of the local and extent of non-residential customers in a municipality.

a. Primary economic activities

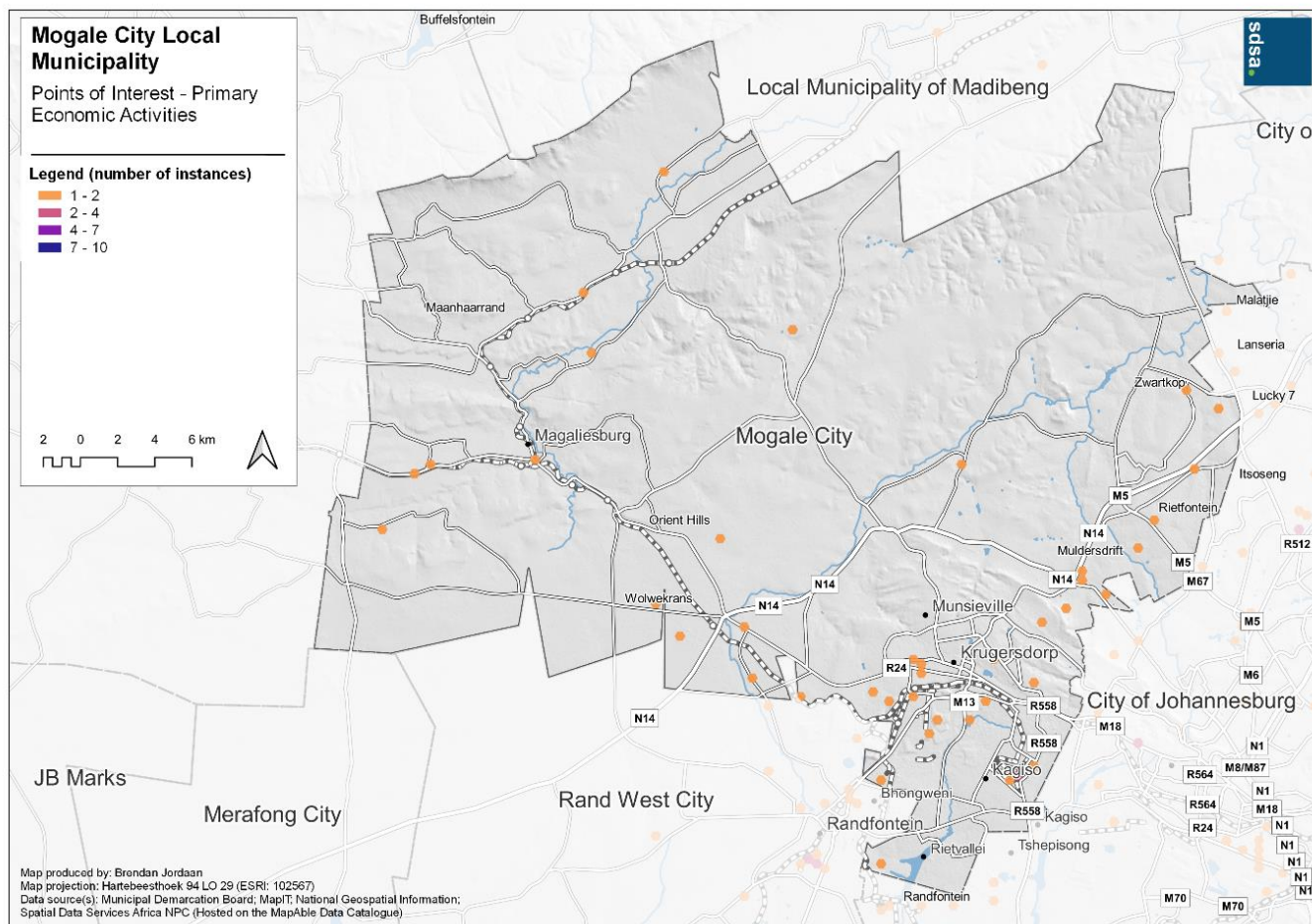
Table 2-38 and Map 2-21 below show the points of interest in the Mogale City Local Municipality for the primary economic activities.

Table 2-38: Primary economic activities (Point of interest count)

Report Category	MapAble® Category	MapIT Points of Interest included	Instances in the area
Agriculture	Agriculture	Agricultural	29
Mining	Mining	Mining/quarrying	16

Source: MapIT data 2021 prepared by BC Gildenhuys and Associates

Map 2-21: Summary of primary economic activities



Source: MapIT data 2021 prepared by BC Gildenhuys and Associates

b. Offices, retail, entertainment and commercial

Table 2-39 and Map 2-22 below show the points of interest in the Mogale City Local Municipality for offices, retail, entertainment and commercial activities.

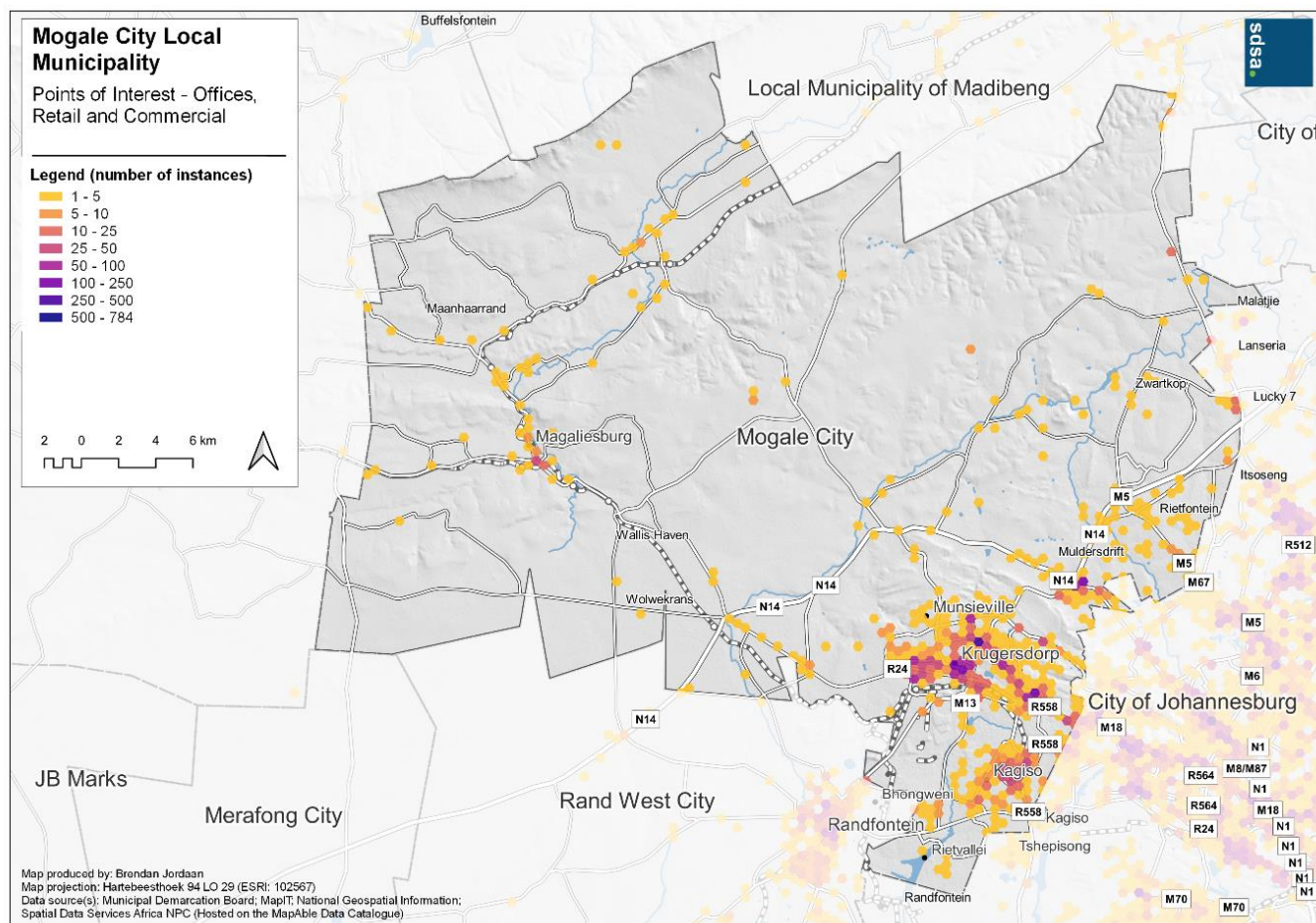
Table 2-39: Offices, retail, entertainment and commercial

Report Category	MapAble® Category	MapIT Points of Interest included	Instances in the area
Commercial and industrial	Commercial	Construction/property, construction material/equipment, transportation/storage	646
	Filling station	Filling station	
	Industrial	Manufacturing, winery	
Office and retail	Business services	Advertising, airlines, atm, bank, car service station, company, conference centre, estate agents, exchange, financial/business services other, it/communication, legal tax, motoring organisation/technical centre/club	3 307
	NGO	NGO	
	Office	Office complex/industrial complex	
	Retail	African restaurant, American restaurant, Asian restaurant, betting station, books/media, British restaurant, car dealer, car rental, car wash, catering, Chinese restaurant, clothing/accessories, coffeeshop/cafe/tertia, computer/computer supplies, consumer electronics/electrics, convenience store, deli/sandwich restaurant, doughnut shop, european restaurant, farm stall, fast food, food and drink, french restaurant, garden centre/nursery, german restaurant, greek restaurant, home improvement businesses, import/export/distributors, Indian restaurant, international restaurant, internet cafe, Italian restaurant, market/informal market, Mexican restaurant, middle eastern restaurant, mobile phone, optician, other restaurants, personal services, pizzeria, pub, retail other, seafood restaurant, shopping centre, South American Caribbean restaurant, sports	

Report Category	MapAble® Category	MapIT Points of Interest included	Instances in the area
		shop, steak restaurant, supermarket/hypermarket, sushi bar, travel agents, vegetarian restaurant	
Entertainment	Entertainment	Amusement/theme park, casino, cinema, entertainment centre, nightlife, theatre/concert hall	

Source: MapiT data 2021 prepared by BC Gildenhuys and Associates

Map 2-22: Summary of offices, retail, entertainment and commercial



Source: MapIT data 2021 prepared by BC Gildenhuis and Associates

c. Multiple residential

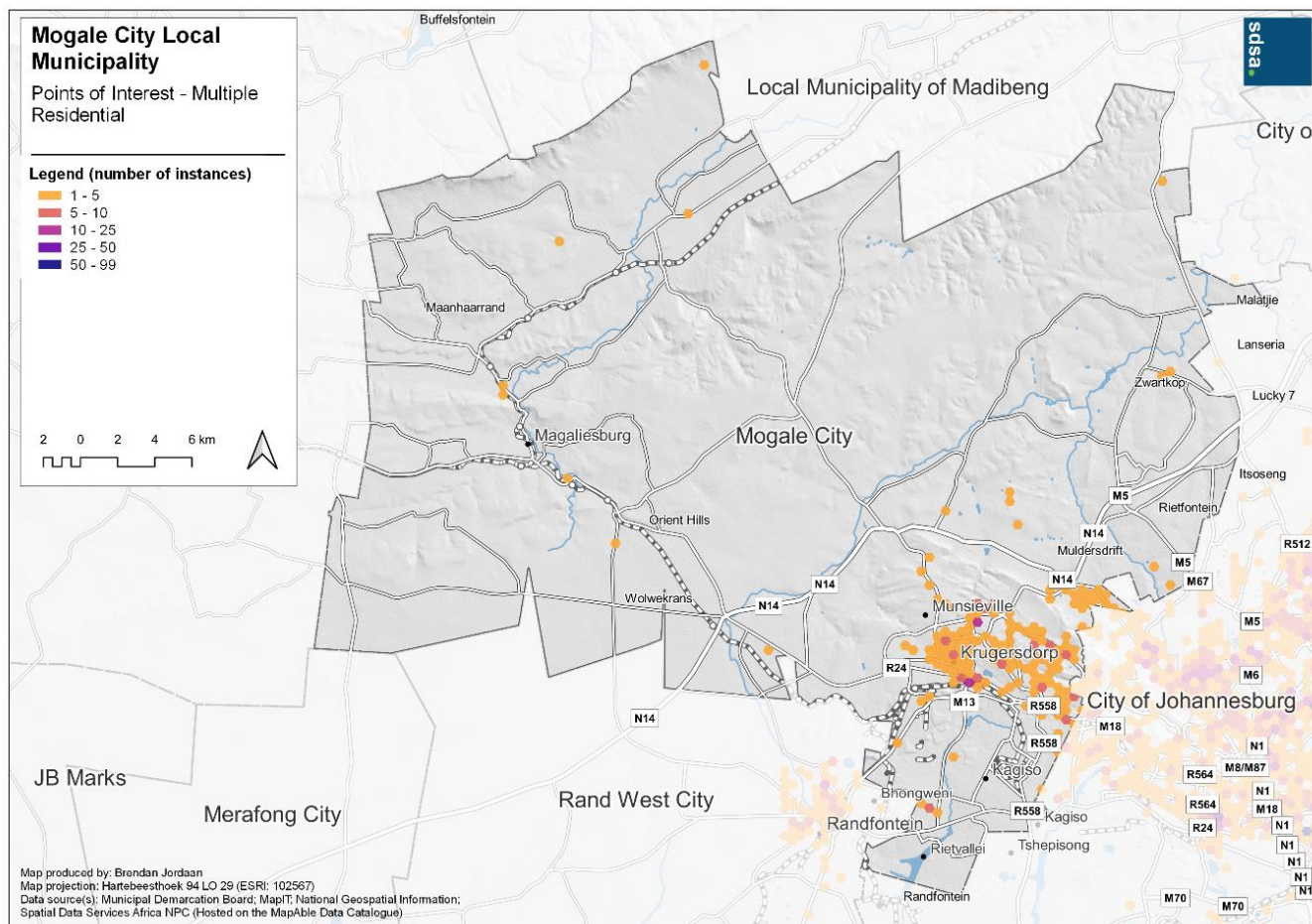
Table 2-40 and Map 2-23 below show the points of interest in the Mogale City Local Municipality for multiple residential.

Table 2-40: Multiple residential

Report Category	MapAble® Category	MapIT Points of Interest included	Instances in the area
Multiple residential		Estates/residential controlled access areas, flats, hostels, retirement village, townhouse complexes	372

Source: MapIT data 2021 prepared by BC Gildenhuys and Associates

Map 2-23: Summary of Multiple residential



Source: MapIT data 2021 prepared by BC Gildenhuys and Associates

d. Community and social facilities

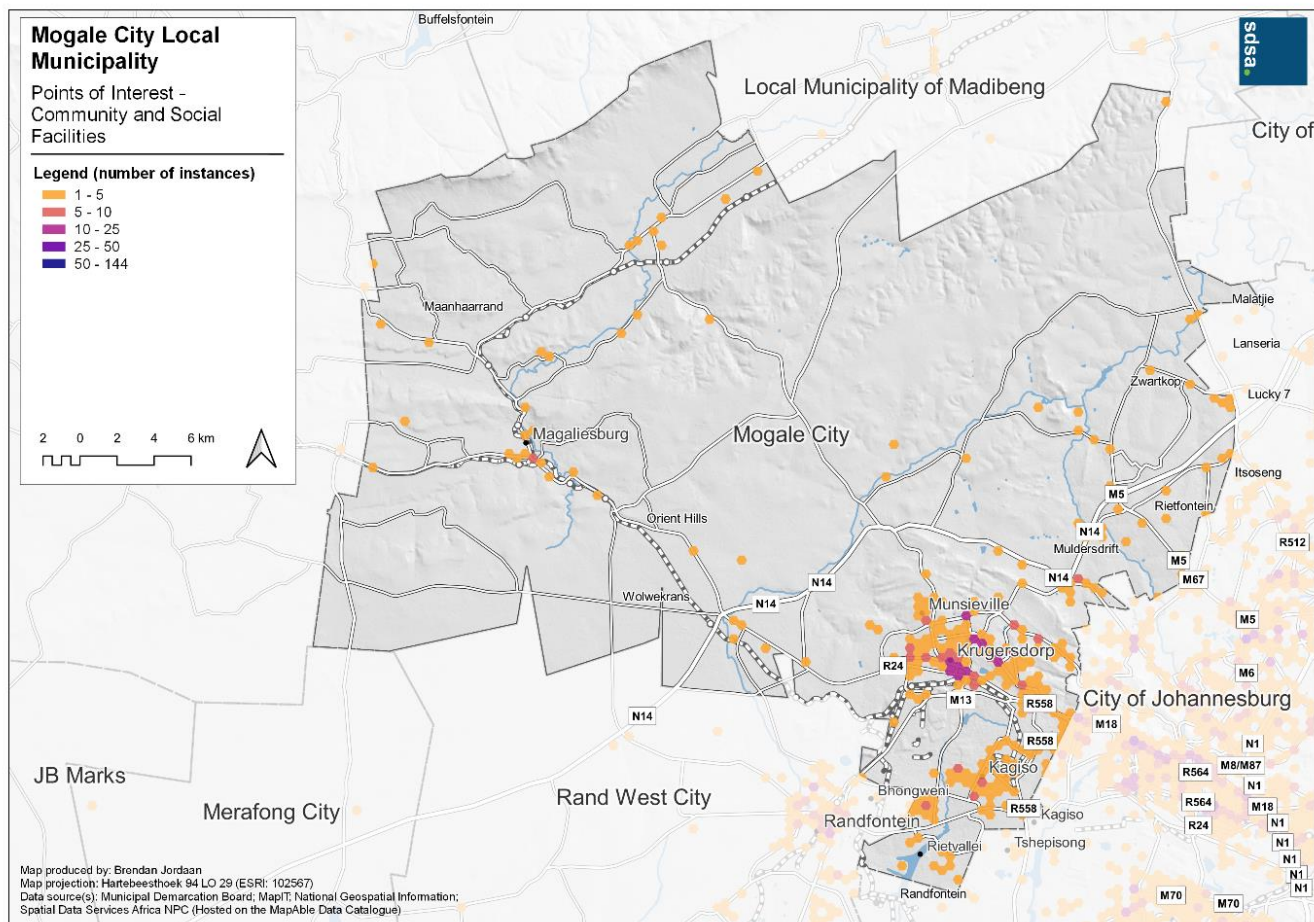
Table 2-41 and Map 2-24 below show the points of interest in the Mogale City Local Municipality for the community and social facilities.

Table 2-41: Community and social facilities

Report Category	MapAble® Category	MapIT Points of Interest included	Instances in the area
Community facility	Association	Association, marina/yacht club	493
	Cemetery/Crematorium	Cemetery/crematorium	
	Community facility	Animal welfare, community centre, community service, library, postal service	
	Court	Court	
	Embassy or Consulate	Embassy/consulate	
	Health facility	Healthcare services, hospital/clinic, hospital/clinic with a casualty, pharmacy/dispensary	
	Medical service	Dentist, doctor, veterinary	
	Religious	Christian, Eastern, Jewish, Muslim, unknown religion	
Education	Safety and security	Emergency services, fire station, police station, security	177
	Pre-school	Pre-primary school	
	School	Primary school, school, secondary school	
	School	Combinedschool	
	Tertiary	Adulteducationfacility, other college, tertiary institution	

Source: MapIT data 2021 prepared by BC Gildenhuys and Associates

Map 2-24: Summary of community and social facilities



Source: MapIT data 2021 prepared by BC Gildenhuys and Associates

e. Government, infrastructure and transport

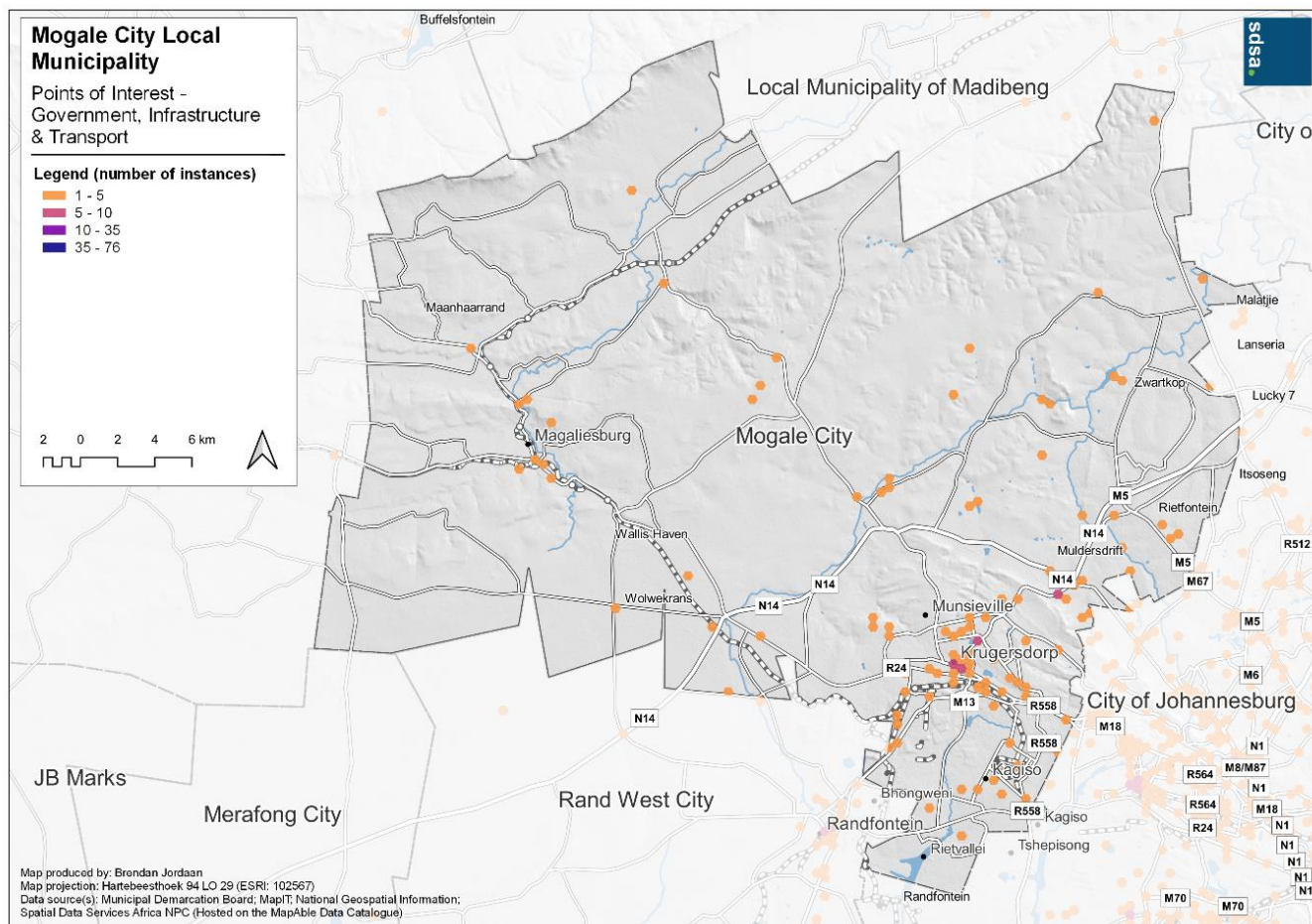
Table 42 and Map 25 below show the points of interest in the Mogale City Local Municipality for government, infrastructure and transport activities.

Table 2-42: Government, infrastructure and transport

Report Category	MapAble® Category	MapIT Points of Interest included	Instances in the area
Government	Government	Correctional facility, government/municipal office, military structure/site, traffic department	74
Infrastructure	Infrastructure	Dam, reservoir, river crossing, tower, utility	29
Transport	Transport	Airfield, airport, airport international, airport terminal, bridge/tunnel, bus station, ferry, harbour, helipad, international border post, parking area, parking garage, railway station, rest area, taxi rank, toll plaza, truck stop, tunnel, weigh station	65

Source: MapIT data 2021 prepared by BC Gildenhuys and Associates

Map 2-25: Summary of government, infrastructure and transport points



Source: MapIT data 2021 prepared by BC Gildenhuys and Associates

f. Tourism, recreation, accommodation and natural features

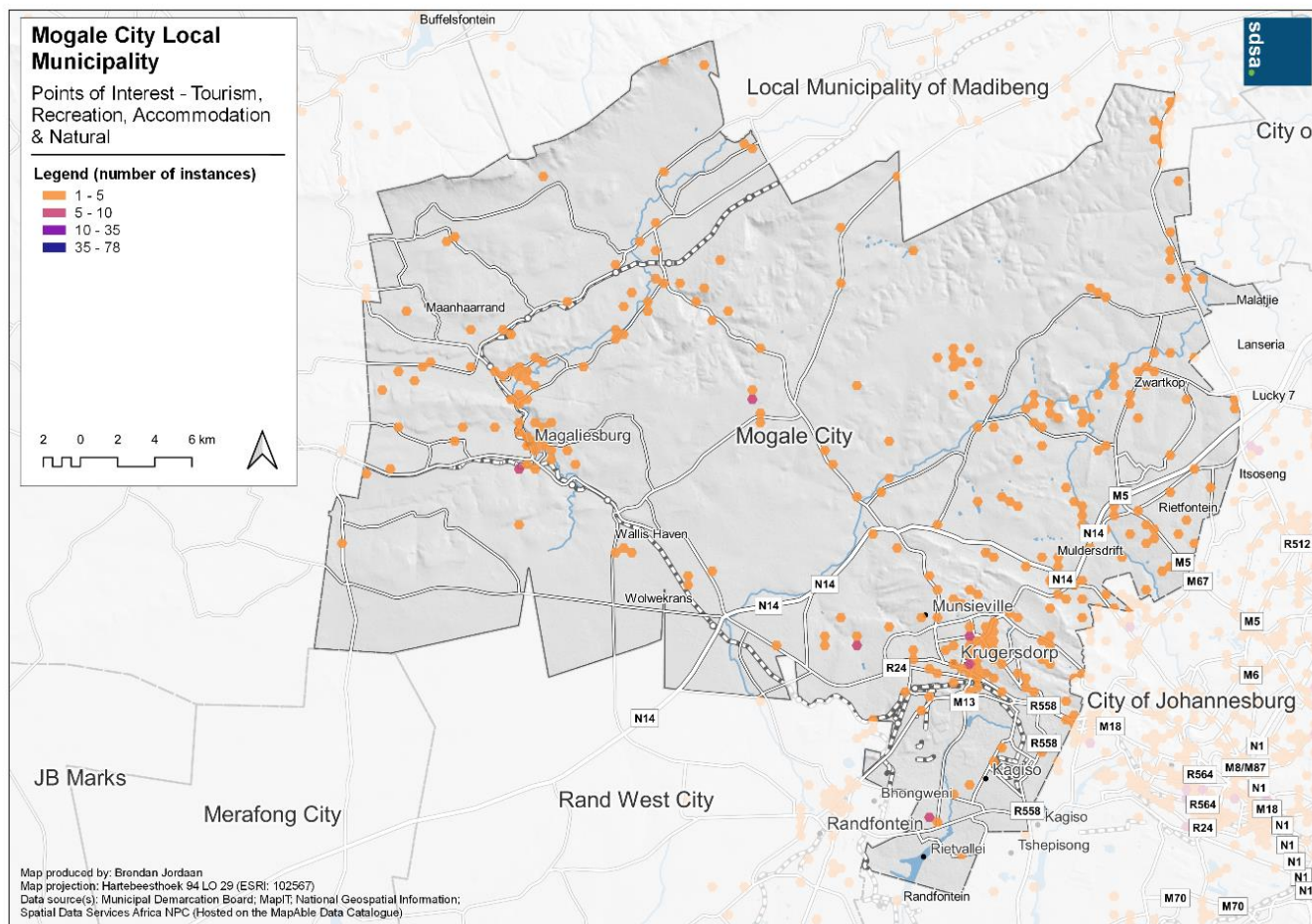
Table 2-43 and Map 2-26 below show the points of interest in the Mogale City Local Municipality for tourism, recreation, accommodation and natural features.

Table 2-43: Tourism, recreation, accommodation and natural features

Report Category	MapAble® Category	MapIT Points of Interest included	Instances in the area
Tourism	Tourist Attractions	Battlefield, cultural centre, graves, historical monument, museum, place of interest, planetarium/exploratorium/observatory, statue/plaque/memorial, tourist information, viewpoint	44
Accommodation	Accommodation	Bed and breakfast, campsite/caravan park, hotel/motel, lodge, other accommodation, resort/spa, rest camp	222
Natural	Natural	Bay, cape, cave, cove, dune, estuary/delta, hill/mountain/mountain range, island, lagoon, location, marsh/swamp/vlei, mineral/hot springs, pan, pass, plain/flat, plateau, rapids, reef, ridge, rocks, summit, valley, water hole, well/oasis	27
Parks and recreation	Parks and recreation	Botanical garden, forest, national park, park, park gate, picnic site, reserve, zoo/aquarium	32
Sport and recreation	Sport and recreation	4x4trail/activity, adventure sport, athletics, baseball, basketball, beach, boat launch ramp, bowls, cricket, dancesport, equestrian, fishing, fitness/recreation centre, golf, hiking, hockey, ice skating, mountain bike trail, multisport venue/complex/centre, netball, other, race track equestrian, race track motorsport, rugby, soccer, stadium, swimming, tennis, watersport	116

Source: MapIT data 2021 prepared by BC Gildenhuys and Associates

Map 2-26: Summary of tourism, recreation, accommodation and natural features



Source: MapIT data 2021 prepared by BC Gildenhuys and Associates

2.9 Access to social facilities

Social and community facilities are an essential part of developing strong communities. As the population's size increases, this growth will pressure existing facilities and create a need for new social and community resources.

This section will provide an overview of the spatial distribution and, where available, counts of education facilities, healthcare facilities, and safety resources.

2.9.1 Education facilities

Education facilities include primary, secondary, combined and intermediate schools as listed in the National Department of Education database. A breakdown of the type of schools are as follows:

- 52 primary schools,
- 24 secondary schools
- 13 combined schools, and
- 5 intermediate schools

The teacher-to-learner ratio needs to be below 40. Very few schools exceed this ratio, with most schools showing some capacity available.

Most assessments use broad guidelines from the CSIR to determine the need for education facilities. Unfortunately, these assessments are often done without considering the facilities' existing capacity and ignoring the distance metric

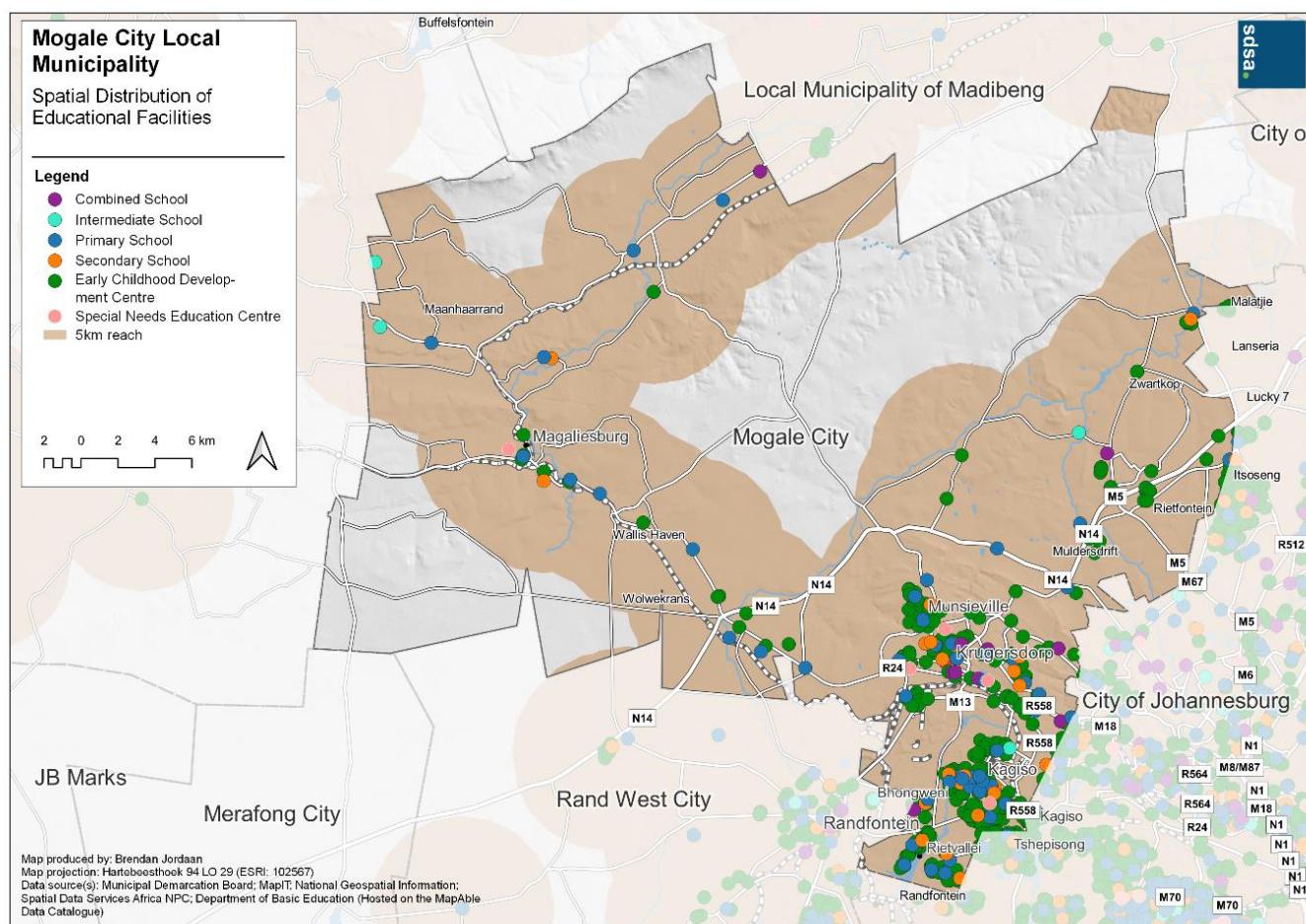
that plays a critical role in the provision of education facilities. Another factor often disregarded is assessing the actual age groupings of the municipality's population. These factors all contribute to the need for these facilities.

Table 2-44: Schools in the Mogale City area

School Type	Number of Schools	Total Learners	Total Teachers	Learners/Education
Primary	52	45 933	1461	31.44
Secondary	24	26 020	1005	25.89
Intermediate	5	1 289	63	20.46
Combined	13	59 72	360	16.59

Source: National Department of Education 2018

Map 2-27: Spatial distribution of education facilities



Source: SDSA (MapAble 2020) based on National Department of Education 2018

2.9.2 Health facilities

A distinction is made between public and private health facilities in the assessment. There is a total of 29 public health facilities and three private health facility. Table 2-45, Table 2-46, Table 2-47 and Map 2-28 below show the breakdown of the area's health facilities.

Table 2-45: Public health facilities in the Mogale City area

Public health facilities	Number of health facilities
Public Facilities	29
Private Facilities	3

Source: Department of Health 2015

Table 2-46: Private health facilities

Name of private health facility	Private health group
Netcare Bell Street Hospital	Netcare Limited
Netcare Krugersdorp Hospital	Netcare Limited
Netcare Protea Day Clinic	Netcare Limited

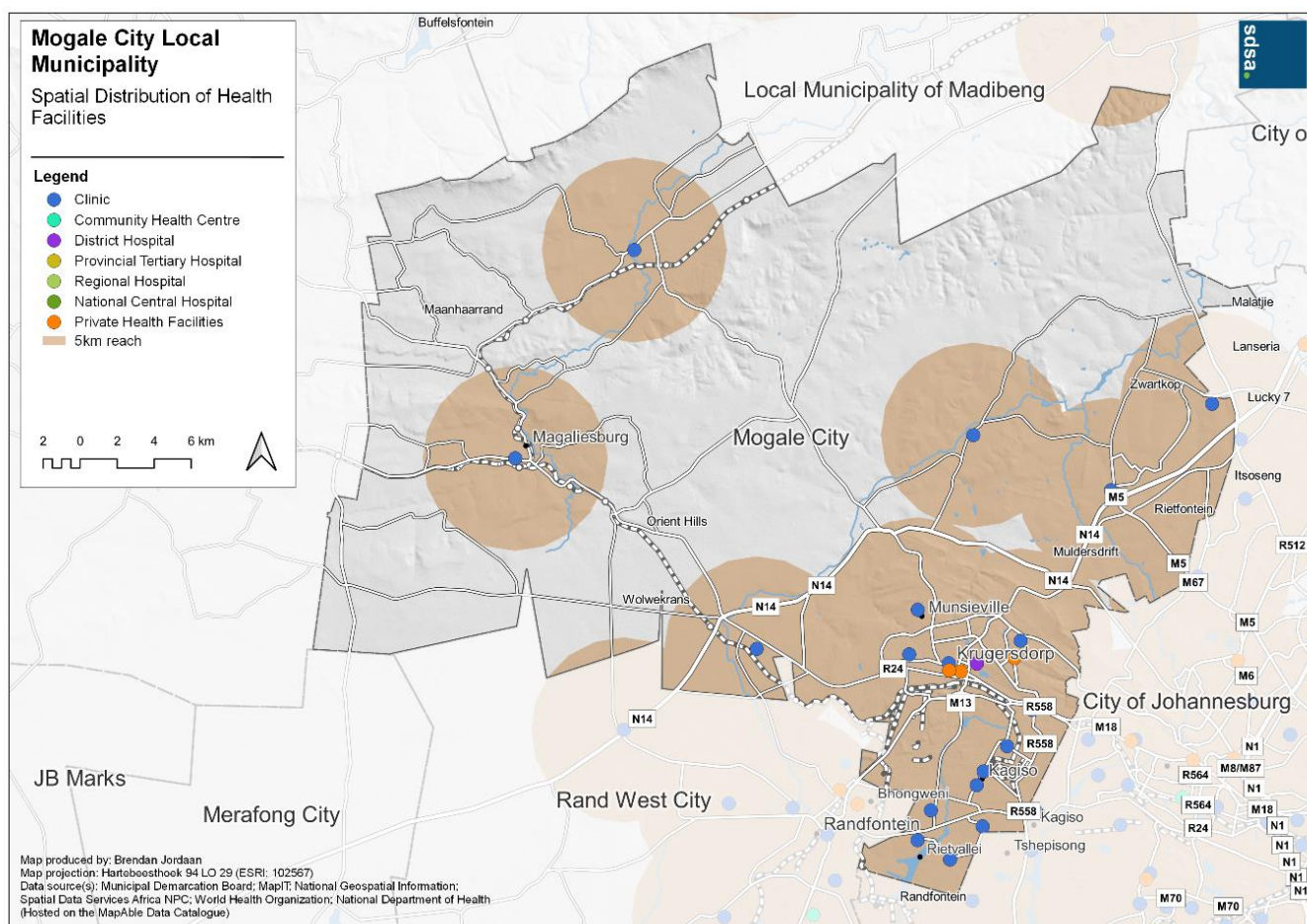
Source: Department of Health 2015

Table 2-47: Bed allocation of private health facilities

Name of private health facility	Beds: Total	Beds: ICU	Beds: Pediatric	Beds: General	Beds: Neo-ICU	Beds: Special ICU	Beds: High care	Beds: Psychiatric	Beds: Day / Ward
Netcare Bell Street Hospital	50	2	0	24	0	0	4	0	20
Netcare Krugersdorp Hospital	310	15	31	215	10	11	0	28	0
Netcare Protea Day Clinic	10	0	0	10	0	0	0	0	0

Source: Department of Health 2015

Map 2-28: Spatial distribution and density of public healthcare facilities



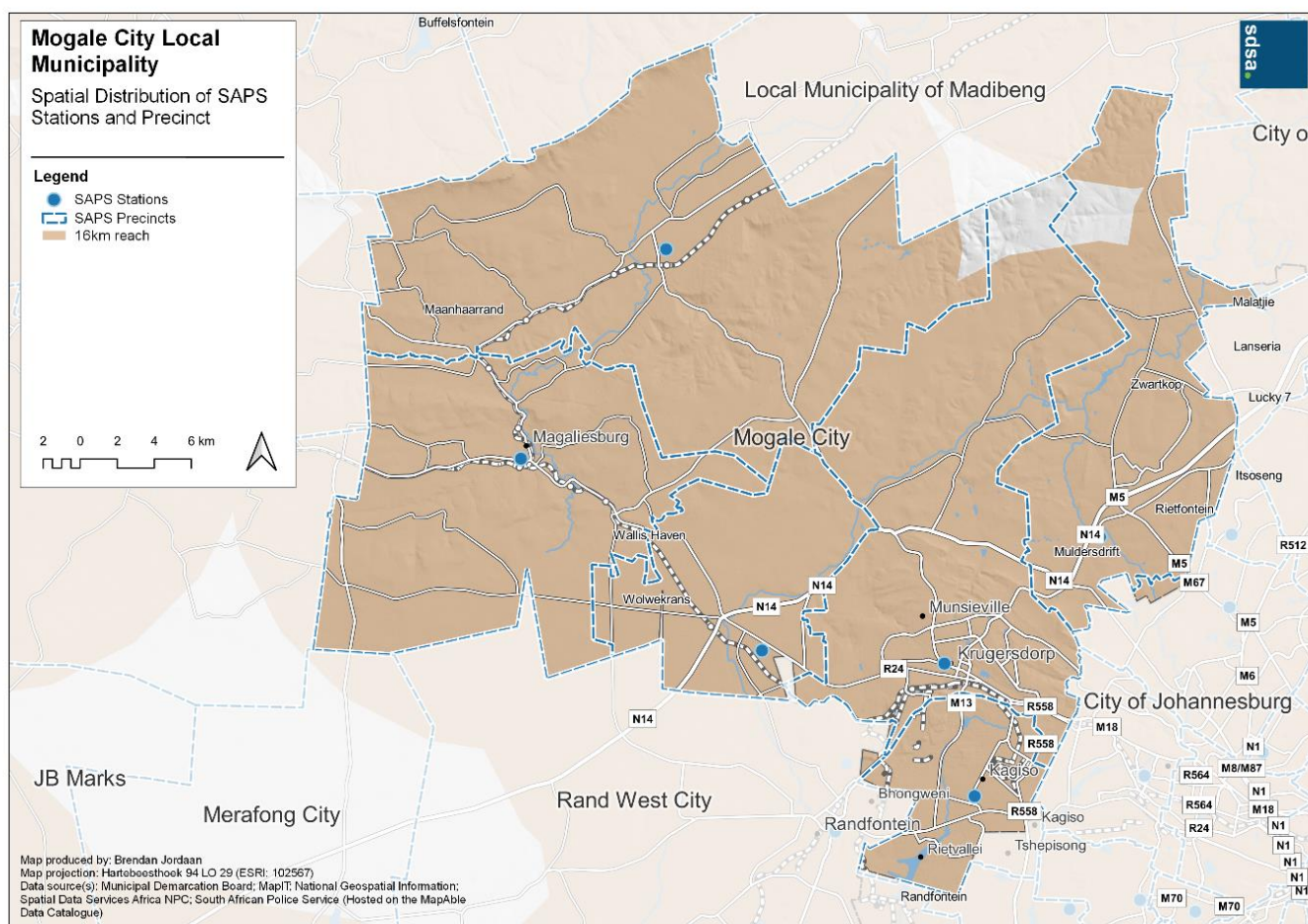
Source: SDSA (MapAble 2020) based on Department of Health 2015

2.9.3 Safety and security

There are 6 SAPS stations in the area. However, the area is serviced by a total of 19 police precincts. Police precinct boundaries do not align with municipal boundaries. The distribution of the precincts and stations may be seen in Map 29. The SAPS stations include:

- Hekpoort
- Kagiso
- Krugersdorp
- Magaliesburg
- Muldersdrift
- Tarlton

Map 2-29: Spatial distribution of SAPS stations and precincts



Source: SDSA (MapAble 2020) based on SAPS

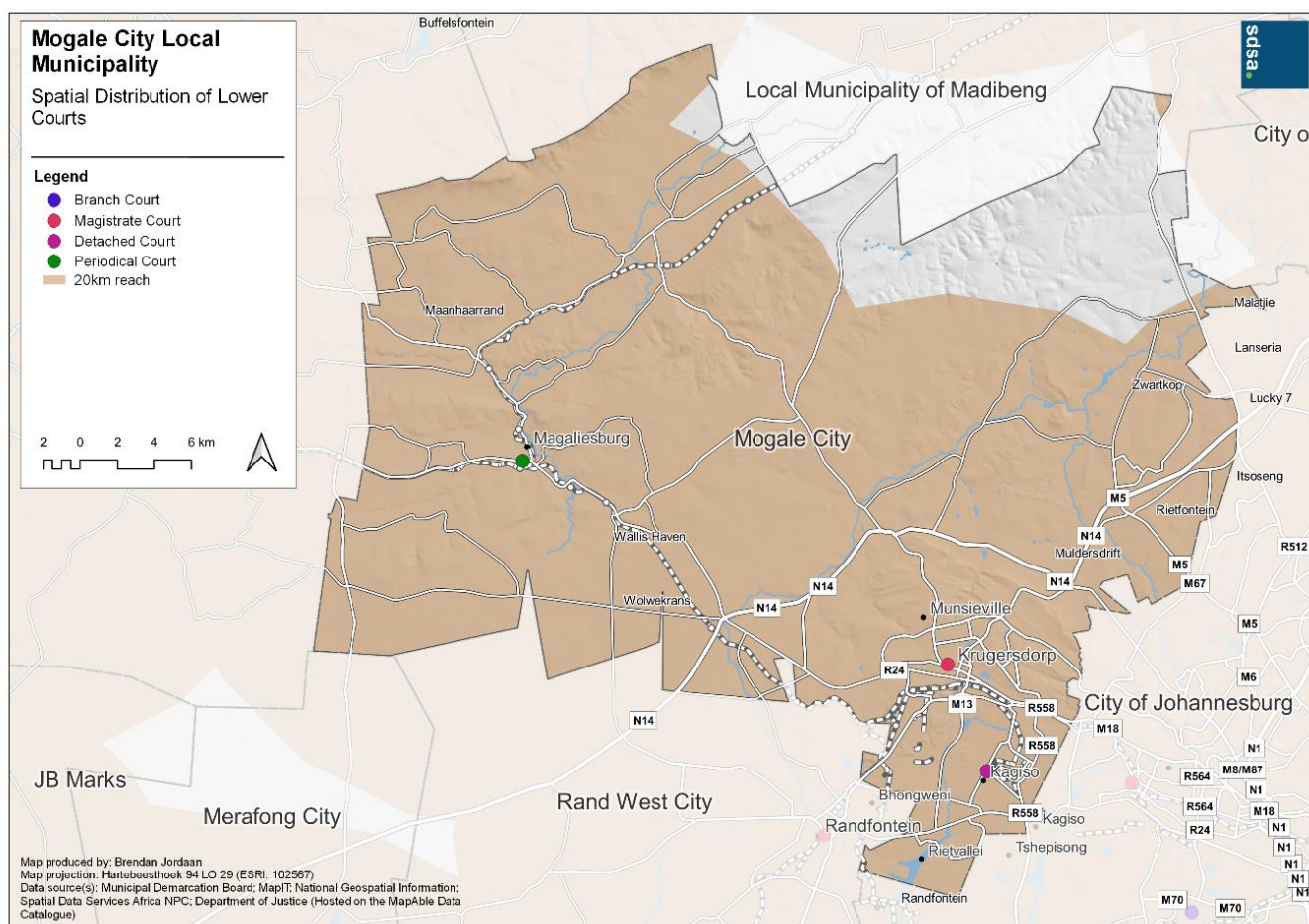
2.9.4 Courts

The courts of South Africa are the civil and criminal courts responsible for the administration of justice in South Africa. There are three lower courts in the municipal area.

Table 2-48: Courts in the Mogale City area

Type of court	Area/Office	Address
Branch Court	Kagiso	23 Kagiso Avenue, Krugersdorp 1739
Magistrate Court	Krugersdorp	cnr Commissioner and Biccard Streets, Krugersdorp 1739
Periodical Court	Magaliesburg	5 Koster Road, Magaliesburg

Map 2-30: Spatial distribution of lower courts



Source: SDSA (MapAble 2020) based on Department of Justice

2.10 Access to services

Access to infrastructure services is a driving force for the betterment of all communities in South Africa. It is a core function of government, and since 1994, access to services for previously disadvantaged communities has been emphasised to the extent that it has become the driving force of most government delivery policies. Initial approaches were to meet the health requirements of the World Health Organisation and hence the adoption of the so-called RDP standards later referred to as access to basic services. However, these policies have evolved for many reasons, to the extent that many of the services currently contemplated by the government at all levels exceed the initial norms and standards.

This section will provide an overview of the number of people that fall within a determined level of service category for water, sanitation, electricity and refuse removal services for the three census periods of 1996, 2001 and 2011. Unfortunately, at this stage, more recent figures are not available.

2.10.1 Water services

Water services have been a high priority in service delivery strategies over the past two decades. One of the critical Millennium Goals adopted in 2000 stated that countries should aim to halve people's proportion without access to safe drinking water and basic sanitation by 2015. At least 50% of households should have access to at least basic services for these goals.

Table 2-49 below shows the access to water has changed between 1996 and 2016.

Table 2-49: Access to water services 1996, 2001, 2011 and 2016

		Full	Intermediate	Basic	Below Basic	None	Total
1996	Total	38 204	15 868	3 107	4 133	1 018	62 330
	%	61,29%	25,46%	4,98%	6,63%	1,63%	100 %
2001	Total	34 613	42 695	7 105	5 874	1 200	91 487
	%	37,83%	46,67%	7,77%	6,42%	1,31%	100 %
2011	Total	64 251	38 096	7 006	4 470	3 425	117 248
	%	54,80%	32,49%	5,98%	3,81%	2,92%	100 %
2016	Total	78 124	47 893	8 280	15 065	618	149 980
	%	52,09%	31,93%	5,52%	10,04%	0,41%	100 %

Source: Census 1996, 2001, 2011, 2016

2.10.2 Sanitation services

Access to appropriate sanitation services is a very high health priority. Although sanitation services received a high priority from the government, there are always challenges, and this service did not achieve the same level of success as improved access to water services. Table 2-50 shows the sanitation access for the municipality.

Table 2-50: Access to sanitation services 1996, 2001, 2011 and 2016

		Full	Intermediate	Basic	Below Basic	None	Total
1996	Total	54 289	NA	NA	6 128	1 914	62 330
	%	87,10%	NA	NA	9,83%	3,07%	100%
2001	Total	70 234	1 614	1 822	13 572	4 246	91 487
	%	76,77%	1,76%	1,99%	14,83%	4,64%	100 %
2011	Total	98 479	3 424	2 751	10 309	2 286	117 248
	%	83,99%	2,92%	2,35%	8,79%	1,95%	100%
2016	Total	129 336	4 072	2 003	13 782	786	149 980
	%	86,24%	2,72%	1,34%	9,19%	0,52%	100%

Source: Census 1996, 2001, 2011, 2016

2.10.3 Electricity services

Although electricity does not have the same implications for health as water and sanitation, access to electricity is very important for general development, especially education. Access to electricity was, therefore, always a high priority. Table 2-51 below shows how access to electricity has changed since 1996. This table is based on access to lighting as a proxy for access to electricity.

Table 2-51: Access to electricity services 1996, 2001, 2011 and 2016

		Full access	Intermediate access	No access	Total
1996	Total	51 406	NA	10 925	62 330
	%	82,47%	NA	17,53%	100%
2001	Total	72 835	NA	18 652	91 487
	%	79,61%	NA	20,39%	100%
2011	Total	100 970	NA	16 278	117 248
	%	86,12%	NA	13,88%	100%
2016	Total	130 655	556	18 769	149 980
	%	87,12%	0,37%	12,51%	100%

Source: Census 1996, 2001, 2011, 2016

2.10.4 Refuse removal

Solid waste management and refuse removal are essential for health and environmental considerations. Table 2-52 below shows how access to refuse removal services was reported in the previous three censuses.

Table 2-52: Access to refuse removal services 1996, 2001, 2011 and 2016

		Full access	Intermediate	Basic	Below Basic	No access	Total
--	--	-------------	--------------	-------	-------------	-----------	-------

1996	Total	47 523	1 326	3 181	7 563	2 738	62 330
	%	76,24%	2,13%	5,10%	12,13%	4,39%	100%
2001	Total	64 473	1 010	2 560	19 269	4 246	91 487
	%	70,47%	1,10%	2,80%	21,06%	4,56%	100%
2011	Total	93 388	2 136	3 079	13 725	4 920	117 248
	%	79,65%	1,82%	2,63%	11,71%	4,20%	100%
2016	Total	121 966	3 679	5 607	11 042	7 686	149 980
	%	81,32%	2,45%	3,74%	7,36%	5,12%	100%

Source: Census 1996, 2001, 2011

2.10.5 Roads

Access to road services has not been recorded in the censuses or elsewhere. The following table shows the available road data for the municipality. One should note that all roads are not the responsibility of the municipality.

Table 2-53: Road services in the municipality 2021

Road type	Paved road (km)	Unpaved road (km)	Total road length (km)
Major road (National Major roads of a country including all freeways)	52.96	N/A	52.96
Main road (Provincial roads and major city through routes)	340.97	6.27	347.25
Secondary road (Secondary roads including slipways)	92.37	105.79	198.16
Suburban road (Formal suburban roads including slipways)	1 009.70	188.10	1 197.80
Informal roads (Alleys, Access ways, roads in informal settlements and squatter camps, farm and other small dirt roads)	21.91	891.76	913.67
Tracks (Non-routable roads: including 4x4 tracks)	N/A	N/A	121.77
Trails (Pedestrian walkways in cities and towns, walking and hiking trails)	N/A	N/A	3.85
Totals	1 528.29	1 191.92	2 845.84

2.11 Municipal institutional indicators

This section gives an overview of critical municipal performance indicators as reported annually by Statistics South Africa and the Office of the Auditor General

2.11.1 Audit Outcomes

Within three months after the end of every municipal financial year, the Auditor General of South Africa (AGSA) receives financial statements from municipalities within which to express various audit opinions that relate mainly to financial affairs. This process primarily serves to deter poor financial management and misuse of municipal funds, strengthening accountability and enhancing municipal service delivery and clean administration. The financial statements submitted for auditing must be free from material misstatements. Misstatements refer to incorrect or omitted information in financial statements. Examples include the incorrect or incomplete classification of transactions or incorrect values placed on assets, liabilities, financial obligations, and commitments. The objective of an audit of financial statements is to express an audit opinion on whether the financial statements are fairly present the financial position of auditees at financial year-end and the results of their operations for that financial year.

The AGSA can express one of the following audit opinions:

- **Clean audit outcome:** The financial statements are free from material misstatements (in other words, a financially unqualified audit opinion) and there are no material findings on reporting on performance objectives or non-compliance with legislation.
- **Financially unqualified audit opinion:** The financial statements contain no material misstatements. Unless the AGSA express a clean audit outcome, findings have been raised on either reporting on predetermined objectives or non-compliance with legislation, or both these aspects.
- **Qualified audit opinion:** The financial statements contain material misstatements in specific amounts, or there is insufficient evidence for the AGSA to conclude that specific amounts included in the financial statements are not materially misstated.

- **Adverse audit opinion:** The financial statements contain material misstatements that are not confined to specific amounts, or the misstatements represent a substantial portion of the financial statements.
- **Disclaimer of audit opinion:** The auditee provided insufficient evidence in the form of documentation on which to base an audit opinion. The lack of sufficient evidence is not confined to specific amounts or represents a substantial portion of the information contained in the financial statements.

Apart from auditing the financial statements, the AGSA other reporting responsibilities include auditing auditees' reporting on their predetermined objectives and auditing auditees' compliance with legislation.

Table 2-54: Municipal Audit outcomes (2011/2016) Municipal Boundaries

Financial Year	Audit outcome
FY 2010/11	Qualified
FY 2011/12	Unqualified with findings
FY 2012/13	Unqualified with findings
FY 2013/14	Unqualified with no findings
FY 2014/15	Unqualified with no findings
FY 2015/16	Unqualified with no findings
FY 2016/17	Unqualified with findings
FY 2017/18	Unqualified with findings
FY 2018/19	Unqualified with findings
FY 2019/20	Unqualified with findings
FY 2020/21	Unqualified with findings

Source: AGSA 2021

2.11.2 Non-financial municipal indicators

StatsSA conducts an annual municipal census to determine non-financial performance indicators. The results reflect the position at the end of a municipal financial year. This survey covers selected non-financial information of all. The census provides information that can serve as a framework for policymakers and other stakeholders to analyse and monitor service delivery of water, electricity, solid waste management, sewerage and sanitation, indigent households, and employment. The information is collected annually from all municipalities through questionnaires. Inaccuracies may occur because of imperfections in reporting by municipalities. Every effort is made to reduce errors to a minimum by carefully designing the questionnaire, undertaking pilot studies/workshops and editing processes. Results are generally comparable between financial years

2.11.3 Employment indicators

a. Councillors and the Executive

Table 2-55: Number of councillors

	Fulltime		Part-time		Vacant posts	Total (Including vacancies)
	Male	Female	Male	Female		
2017	44	32	0	0	0	76
2018	44	32	0	0	0	76
2019	44	32	0	0	0	76
2020	44	32	0	0	0	76

Source: StatsSA 2020

b. Staffing and employment

The non-financial census of municipalities by StatsSA reports the following data. The figures below show low vacancy rates for 2019.

c. Manager and total employment

Table 2-56: Managerial positions according to Section 56 of the Local Government Municipal System Act, 2000 (Act No.32 of 2000)

	Fulltime		Part-time		Vacant posts	Total (Including vacancies)
	Male	Female	Male	Female		
2017	6	3	0	0	0	9
2018	6	4	0	0	0	10
2019	5	4	0	0	1	10
2020	4	3	0	0	2	9

Source: StatsSA 2020

Table 2-57: Managerial positions according to Organogram (excluding Section 56 managers)

	Fulltime		Part-time		Vacant posts	Total (Including vacancies)
	Male	Female	Male	Female		
2017	18	17	0	0	0	35
2018	17	16	0	0	0	33
2019	17	18	0	0	3	38
2020	17	18	0	0	3	38

Source: StatsSA 2020

Table 2-57 and Table 2-58 show no managerial or council vacancies for 2020.

Table 2-58: Employment positions, including managerial positions

	Fulltime	Part-time	Vacant posts	Total (Including vacancies)
2017	1 500	0	666	2 166
2018	1 495	0	847	2 342
2019	1 486	0	1 064	2 550
2020	1 434	250	1 023	2 707

Source: StatsSA 2020

d. Department staffing and employment

Table 2-59: Employment positions excluding managerial positions in Community and Social Services

	Fulltime	Part-time	Vacant posts	Total (Including vacancies)
2017	198	0	35	233
2018	99	0	44	143
2019	121	0	5	126
2020	Not reported	Not reported	Not reported	Not reported

Source: StatsSA 2020

The table above shows a 4% vacancy rate for community and social services posts in 2019.

Table 2-60: Employment positions excluding managerial positions in Finance and Administration

	Fulltime	Part-time	Vacant posts	Total (Including vacancies)
2017	243	0	329	572
2018	294	0	56	350
2019	264	0	294	558
2020	Not reported	Not reported	Not reported	Not reported

Source: StatsSA 2020

The vacancy rate in finance and administration was 52.7% in 2019.

Table 2-61: Employment positions excluding managerial positions in Electricity

	Fulltime	Part-time	Vacant posts	Total (Including vacancies)
2017	128	0	48	176
2018	100	0	71	171
2019	51	0	105	156

2020	Not reported	Not reported	Not reported	Not reported
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Source: StatsSA 2020

The electricity department had a vacancy rate of 67.3% in 2019.

Table 2-62: Employment positions excluding managerial positions in Environmental Protection

	Fulltime	Part-time	Vacant posts	Total (Including vacancies)
2017	0	0	0	0
2018	159	0	124	283
2019	152	0	123	275
2020	Not reported	Not reported	Not reported	Not reported

Source: StatsSA 2020

The vacancy rate for environmental protection services was 44.7% in 2019.

Table 2-63: Employment positions excluding managerial positions in Health

	Fulltime	Part-time	Vacant posts	Total (Including vacancies)
2017	0	0	0	0
2018	0	0	0	0
2019	0	0	0	0
2020	Not reported	Not reported	Not reported	Not reported

Source: StatsSA 2020

Table 2-64: Employment positions excluding managerial positions in Public Safety

	Fulltime	Part-time	Vacant posts	Total (Including vacancies)
2017	262	0	35	297
2018	193	0	113	306
2019	185	0	119	304
2020	Not reported	Not reported	Not reported	Not reported

Source: StatsSA 2020

39.1% of the positions in Public Safety was vacant in 2019.

Table 2-65: Employment positions excluding managerial positions in Road Transport

	Fulltime	Part-time	Vacant posts	Total (Including vacancies)
2017	62	0	20	82
2018	65	0	58	123
2019	48	0	34	82
2020	Not reported	Not reported	Not reported	Not reported

Source: StatsSA 2020

The vacancy rate for road transport services was 41.5%, and the corresponding figure for sports and recreation was 38.6% in 2019.

Table 2-66: Employment positions excluding managerial positions in Sport and Recreation

	Fulltime	Part-time	Vacant posts	Total (Including vacancies)
2017	111	0	15	126
2018	152	0	88	240
2019	145	0	91	236
2020	Not reported	Not reported	Not reported	Not reported

Source: StatsSA 2019

In waste management services, 48.2% of the positions were not filled in 2019.

Table 2-67: Employment positions excluding managerial positions in Waste Management

	Fulltime	Part-time	Vacant posts	Total (Including vacancies)
2017	236	0	14	250
2018	47	0	30	77
2019	176	0	164	340
2020	Not reported	Not reported	Not reported	Not reported

Source: StatsSA 2020

Regarding water and sanitation services, the wastewater component had a 37.3% vacancy rate, and the corresponding figure for water services was 27.6% in 2019.

Table 2-68: Employment positions excluding managerial positions in Wastewater Management

	Fulltime	Part-time	Vacant posts	Total (Including vacancies)
2017	61	0	68	129
2018	124	0	60	184
2019	96	0	57	153
2020	Not reported	Not reported	Not reported	Not reported

Source: StatsSA 2020
Table 2-69: Employment positions excluding managerial positions in Water Management

	Fulltime	Part-time	Vacant posts	Total (Including vacancies)
2017	70	0	5	75
2018	157	0	127	284
2019	42	0	16	58
2020	Not reported	Not reported	Not reported	Not reported

Source: StatsSA 2020
Table 2-70: Employment positions excluding managerial positions in Other

	Fulltime	Part-time	Vacant posts	Total (Including vacancies)
2017	85	0	97	182
2018	62	0	76	138
2019	162	0	52	214
2020	Not reported	Not reported	Not reported	Not reported

Source: StatsSA 2020

2.11.4 Service access indicators

The service indicators below should be read and related to the population assessment in Section 2 on the area's demographics and Section 4, dealing with settlement dynamics and change. One should also note substantial differences between the figure reported by the Council below, the data extracted from the financial system, and the household and population figures assessed earlier in this report.

a. Service responsibilities

The tables below show that the Council is responsible for all major infrastructure services. However, service areas are complicated. Therefore, external service providers are involved in the municipality.

Table 2-71: Responsibility for providing services under the powers and functions

	Water	Sanitation	Electricity	Solid waste
2017	Yes	Yes	Yes	Yes
2018	Yes	Yes	Yes	Yes
2019	Yes	Yes	Yes	Yes
2020	Not reported	Not reported	Not reported	Not reported

Source: StatsSA 2020

Table 2-72: Responsibility for providing services outsourced or commercialised

	Water	Sanitation	Electricity	Solid waste
2017	Not applicable	Not applicable	Yes	Not applicable
2018	Not applicable	Not applicable	Yes	Not applicable
2019	Not applicable	Not applicable	Yes	Not applicable
2020	Not applicable	Not applicable	Yes	Not applicable

Source: StatsSA 2020

b. The extent of service coverage
Table 2-73: Number of consumer units receiving services from municipalities

	Water	Sanitation	Electricity	Solid waste
2017	119 844	115 979	125 238	115 000
2018	131 476	122 498	126 552	116 314
2019	116 754	105 045	95 647	116 314
2020	139 147	135 559	123 347	116 314

Source: StatsSA 2020

c. Service backlogs

The details of service backlogs are dealt with as a separate element under this project. However, as indicated earlier in this report, the benchmark number of households is in the order of 131 848 (See Section 2.2.7). However, this is a gross figure, and adjustments will have to be made to address the impact of potential customers excluded from delivery, such as households on farms or backyard dwellings.

The inconsistency in the data reported for the different years also raises questions. However, compared to figures from other sources, the 2020 figure seems to be more accurate or representative of the current situation than the previous years.

Table 2-74: Number of consumer units receiving water services

	Number of domestic consumer units served through a delivery point				Total number of non-domestic consumer units receiving water services	Total number of consumer units receiving water services
	Inside the yard	Less than 200m from a yard	More than 200m from a yard	Total number of domestic consumer units receiving water services		
2017	105 848	7 020	4 500	117 368	2 476	119 844
2018	118 000	8 000	3 000	129 000	2 476	131 476
2019	104 020	8 000	3 000	115 020	1 734	116 754
2020	127 173	9 740	500	137 413	1 734	139 147

Source: StatsSA 2020

Table 2-75: Number of consumer units receiving sanitation services

	Flush toilets connected to public sewerage system	Flush toilets connected to septic tank	Bucket system	Ventilated improved pit latrines	Other	Total number of domestic consumer units receiving sanitation services	Total number of non-domestic consumer units receiving sanitation services	Total number of consumer units receiving sanitation services
2017	110 708	0	0	290	2 505	113 503	2 476	115 979
2018	112 022	0	0	8 000	0	120 022	2 476	122 498
2019	92 240	0	0	11 070	0	103 310	1 735	105 045
2020	127 173	0	0	4 470	2 182	133 825	1 734	135 559

Source: StatsSA 2020

d. Service delivery policy indicators

The municipality has a general policy regarding free basic services in place. The following table indicates to which services a free basic service policy applies.

Table 2-76: Has the municipality implemented free basic service policies

	Water	Sanitation	Electricity	Solid waste
2017	Yes	Yes	Yes	Yes
2018	Yes	Yes	Yes	Yes
2019	Yes	Yes	Yes	Yes
2020	Yes	Yes	Yes	Yes

Source: StatsSA 2020

It is not clear why the units receiving free basic services have declined.

Table 2-77: Domestic units receiving free basic services

	Water	Sanitation	Electricity	Solid waste
2017	18 287	8 835	8 835	8 835
2018	10 622	10 622	10 622	10 622
2019	9 943	9 943	9 943	9 943
2020	5 365	5 184	6 827	6 570

Source: StatsSA 2019

As the table below shows, the Council applies a self-targeting approach to identify indigent households that needs assistance with service payments.

Table 2-78: Mechanisms to provide free basic services to indigent households for Water

	Technical approach	Geographic approach	Broad-based approach	Self-targeting approach	Consumption-based approach	Property value-based approach	Targeting based on plot size approach
2018	Not applicable	Not applicable	Not applicable	Not applicable	Yes	Not applicable	Not applicable
2019	Not applicable	Not applicable	Not applicable	Yes	Not applicable	Not applicable	Not applicable
2020	Not applicable	Not applicable	Not applicable	Yes	Not applicable	Not applicable	Not applicable

Source: StatsSA 2020

Table 2-79: Mechanisms to provide free basic services to indigent households for Sanitation

	Technical approach	Geographic approach	Broad-based approach	Self-targeting approach	Consumption-based approach	Property value-based approach	Targeting based on plot size approach
2018	Not applicable	Not applicable	Not applicable	Not applicable	Yes	Not applicable	Not applicable
2019	Not applicable	Not applicable	Not applicable	Yes	Not applicable	Not applicable	Not applicable
2020	Not applicable	Not applicable	Not applicable	Yes	Not applicable	Not applicable	Not applicable

Source: StatsSA 2020

Table 2-80: Mechanisms to provide free basic services to indigent households for Electricity

	Technical approach	Geographic approach	Broad-based approach	Self-targeting approach	Consumption-based approach	Property value-based approach	Targeting based on plot size approach
2018	Not applicable	Not applicable	Not applicable	Not applicable	Yes	Not applicable	Not applicable
2019	Not applicable	Not applicable	Not applicable	Yes	Not applicable	Not applicable	Not applicable
2020	Not applicable	Not applicable	Not applicable	Yes	Not applicable	Not applicable	Not applicable

Source: StatsSA 2020

Table 2-81: Mechanisms to provide free basic refuse removal services to indigent households

	Technical approach	Geographic approach	Broad-based approach	Self-targeting approach	Consumption-based approach	Property value-based approach	Targeting based on plot size approach
2018	Not applicable	Not applicable	Not applicable	Not applicable	Yes	Not applicable	Not applicable
2019	Not applicable	Not applicable	Not applicable	Yes	Not applicable	Not applicable	Not applicable
2020	Not applicable	Not applicable	Not applicable	Yes	Not applicable	Not applicable	Not applicable

Source: StatsSA 2020

Table 2-82: Monthly income cut-off points to identify indigent households

	R1 600 and below	Between R1 601 and R3 380	Above R3 380
2018	Not applicable	Yes	Not applicable
	R1 780 and below	Between R1 780 and R3 560	Above R 3 560
2019	Not application	Yes	Not application
	R1 860 and below	Between R1 860 and R3 720	Above R 3 720
2020	Not applicable	Yes	Not applicable

Source: StatsSA 2020

The same comments apply as with Table 2-77 above.

Table 2-83: Number of indigent households benefiting from an indigent support system

	Indigent households identified	Beneficiaries			
		Water	Electricity	Sanitation	Refuse removal
2017	8 835	8 835	8 835	8 835	8 835
2018	10 622	10 622	10 622	10 622	10 622
2019	9 943	9 943	9 943	9 943	9 943
2020	6 827	5 365	6 827	5 184	6 570

Source: StatsSA 2020

2.11.5 Policy frameworks and agreements

The table below shows that all the major policy frameworks and agreements are in place.

Table 2-84: Policy frameworks and agreements in place

	IDP submitted	WSDP submitted	Monitoring for water quality	Integrated waste management plan	Monitoring for effluent discharges	Funding agreement with Eskom	HIV/AIDS policy
2017	Yes	Yes	Yes	Yes	Yes	Not applicable	Yes
2018	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2019	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2020	Not reported	Not reported	Not reported	Not reported	Not reported	Not reported	Not reported

Source: StatsSA 2020

2.12 Summary and conclusions

This section summarises the findings and the main conclusion derived from the socio-economic assessment. These considerations generally apply to planning, but more specifically, considerations and conclusions set the scene for formulating capital expenditure frameworks.

2.12.1 Context and location

- Mogale City Local Municipality is situated in the West Rand District Municipality of the Gauteng Province in South Africa. It is located on the western outskirts of Johannesburg, one of the country's major economic hubs.
- The Municipality is mainly rural in the north and western parts, with urban development focused in the southern part of the municipality.

2.12.2 Demographics

- Both population and household figures are essential for infrastructure investment purposes. Households eventually translate into the number of residential customers that demand services from the municipality as service providers. To the residential customers, the non-residential customers must be added. The municipality shows a relatively high percentage of non-residential customers.
- The study shows that the black population group (80.83%) is the majority of the population groups in Mogale City, followed by the white population group (16.3%). On the other hand, the Asian population group is the smallest in the municipality representing only 0.78% of the population.
- The gender split of the municipality is even. However, there are more males in the working age group (19 to 65 years). This confirms the presence of migrant labourers in the municipality. This may be due to the mining and industrial activities in the municipality.
- The population of Mogale City has increased by more than 223 196 people since 1996. This population increase equates to a growth rate of 2.9%, which is higher than the national average.
- Spatially, most of the population growth took place in the urban centres of existing settlements. There are also indications of depopulation on the periphery of some urban areas, especially around the towns of Krugersdorp, Munsieville and Kagiso. Most of the municipal growth occurred in the urban areas of Kagiso, Rietvallei and Munsieville.
- The municipality's households followed the same trend as the population groups, with black households (82.1%) being the majority. The white households (15.8%) are the second largest group.
- Indications are that household size has stabilized at around 3.1 persons per household since 2013.
- Males mostly head the households, but female-headed households are increasing.
- 63.3% of the household live in houses made of bricks, but approximately 12.7% live in informal backyard dwellings, which was 19 088 households in 2016.
- Population and household estimates vary according to the source used. Therefore, it is impossible to be definitive on these figures, and it will be necessary to continuously monitor the population and household growth and changes.

Table 2-85: Population forecast

Population forecasts	2021	2025	2030	2035	2040	2043	Average annual increment
Quantec Regional Indicators forecast	408 052	416 474	426 488	436 502	446 516	452 525	2 021
Census Trend	414 740	431 171	449 856	466 892	482 594	491 472	3 836
Mid-year population estimates trends	451 700	486 290	521 329	541 883	542 194	530 267	4 587

Table 2-86: Household forecast

Household forecasts	2021	2025	2030	2035	2040	2043	Average annual increment
Quantec Regional Indicators forecast	131 848	135 392	139 653	143 915	148 176	150 733	858
Census trend	141 924	149 578	158 407	166 570	174 187	178 533	1 823
Mid-year population estimates trends	146 078	156 414	168 536	179 927	190 710	196 927	2 380

2.12.3 Economics

a. The value of economic production

- The economic assessment includes data up to 2021. Therefore, all outcomes should be viewed against the background of the economic downturn due to the Covid-19 pandemic.
- When assessing the long-term expectation around economic growth, one should remember that economies at a regional level are open, and it is difficult to isolate the municipality's economy from the broader region. Also, South Africa has a highly interventionist economic approach that can make trend analysis difficult.
- The municipality has shown slow economic growth (2.45%) over the past 27 years. Economic growth is lower than population growth and might translate into serious service delivery and financial sustainability challenges for the municipality.
- The most significant contributing sector is business services, contributing 23.88% to the local economy. The second-largest sector is manufacturing at 21.67%, followed by social services at 17.51%. Most sectors' declined between the year 2019 to 2021 due to the Covid- 19 crisis, which is noticeable, except for agricultural and business services, which continued to grow. On the other hand, the trade and the transport and telecommunications sectors are the largest growing sectors in the municipality, with a growth rate of 3.73% for both.

b. Employment and education

- Unemployment has grown by 19,81% per annum. The unemployment rate stood at 6.4% in 1995 and increased to 24.5% in 2021.
- Skilled and semi-skilled employment has grown by 2.13% and 0.61%, respectively, while low-skilled labour increased at 0.76% per annum. Informal employment has grown at an average of 1.66% per annum.
- Education has improved significantly, especially in people with secondary school education and matric qualifications.

c. Household income and expenditure

- Regarding household-income distribution, only 4% earned more than R50 000 per month, and a concerning 32% earned less than R1 200 per month in 2011.
- The corresponding figures for 1996 were 41% for households with more than R50 000 per month and 19% with an income of less than R1 200 per month. This points to a radical shift to large-scale poverty.
- Since residential customers constitute nearly 88% of the customer base, the shift towards poverty may indicate an implosion of the city's revenue base requiring a reassessment of service policies and strategies.
- As expected, clear spatial patterns show concentration of higher-income households in and around Krugersdorp and just north of the N14, Oaktree. On the other hand, the more rural areas inland of the municipality are the poorer regions.
- The working population is currently saving barely more than in 1997. Savings directly impact the long-term ability of households to meet their commitments, including paying for municipal services. In addition, taxes have continued to increase since 1995. Notable is that savings decreased as general taxes and the costs of the services increased. Everything points to households under severe stress.
- There have been sharp rises in household expenditure on services and non-durable goods over time, while expenditure on durable goods remains very low.

- It should be noted that increases in overall income did not translate into similar increases in taxes. It might reflect on income growth in the lower-income brackets and people dependent on government grants and subsidies. It simply implies that the burden on the higher-income groups is increasing.

d. Economic production and employment

- The trade sector is the largest employer in the municipality, employing 25.41% of the labour force. The second-largest contributor to employment is the business service sector, at 19.51%. Social services are responsible for 19.07% of jobs. Almost all sectors have shown an increase in the number of people employed, with a total average increase of 0.96%. On the other hand, agriculture and mining are the sectors that have shed labour at a rate of 1.97% and 2.62% per annum, respectively.

e. Capital formation and fixed investment

- Capital formation was at its height in 2004. However, it sharply declined and remained low ever since, drastically declining in 2020 due to the pandemic.
- Capital formation followed similar patterns at the national, provincial and municipal levels. However, local changes were more pronounced due to the greater openness of the local economy.
- Fixed capital stock in Mogale City has been declining since 2008. The implication is that the asset base for economic production is shrinking. The figures on the consumption of fixed assets confirm this.
- The expected useful life (EUL) of assets in the economy decreased from 22.6 years in 1993 to 14.5 years in 2021. This decrease is a direct consequence of the decline in fixed investment and an increase in the consumption of capital stock.
- The private sector maintained a positive return on investment. When measuring the ratio of fixed capital investment in the private sector to its output in GVA, the ratio decreased from R1.20 in 1993 to R1.12 in 2021. On the other hand, the local government (Mogale City) had a GVA return of 0.36c in 2021, and the central and provincial government's GVA return for every Rand invested is currently only 0.24c.
- As private sector returns increase, local and central government returns decrease and the opposite is also true. This difference may be attributed to governments' spending being anti-cyclical in the economy while the private sector directly responds to the realities of continuous decline in economic growth.
- Mogale City contributes about 39.4% of the total capital stock in the district.

f. Drivers in the economy and risk

- The manufacturing sector represents the municipality's best sector. The municipality shows a further advantage in three other sectors. It is also interesting to note that the other local municipalities and districts have varying profiles, and mining is the best-performing sector in most other municipalities.
- When comparative advantage is measured against the provincial economy, the municipality gained two sectors. On the other hand, agriculture is, in this analysis, the municipality's best sector.
- Measured against the other municipalities within the district, the municipality's strong agricultural advantage remains the best-performing sector.

2.12.4 Settlement dynamics and change

a. Historical growth and settlement footprint

- The most formal settlement in the municipality relates to the towns of Krugersdorp. The town of Magaliesburg and the agricultural holdings of Wolfelea and Swatzkop.
- These activities cover 25.5% of the municipality's total area. Overall, there has been a 2.3% decrease in land cover related to primary economic activities from 1990 to 2018 in the municipality. Cultivated commercial fields highlight the importance of agriculture in the municipality. Cultivated commercial fields and small holdings show a decline in land cover, decreasing by 8.5% and 14.9%, respectively.
- Overall, the footprint of human settlement-related activities has increased by 2.1%. This accounts for 1 211 hectares. These activities cover a total of 5.18% of the total municipal area.

- The urban footprint increased from 5 763ha in 1990 to 6 974ha in 2014. The municipality is 134 525ha.

b. Points of interest

- Points of interest (POI) data helps to identify non-residential customers in the municipal area. The following are important:
 - Primary activities: 45
 - Commercial and industrial: 646
 - Office and retail: 3 307
 - Multiple residential developments: 372
 - Community facilities: 670
 - Accommodation establishments: 222

2.12.5 Access to social facilities

The following sections highlight elements of social and community facilities. These facilities are not necessarily part of the Council's responsibilities but are integral to the urban fabric.

- Mogale City has 94 basic education facilities, and all facilities have a learner-to-teacher ratio below 40.
- There are 29 public and three private health facilities in the municipal area.
- There are 6 SAPS stations in the area. However, the area is serviced by a total of 19 police precincts. Police precinct boundaries do not align with municipal boundaries.
- There are three lower courts in the municipal area.

2.12.6 Access to infrastructure services

Access to services is one of the biggest challenges. This report addressed service access from the point of available information. Service backlogs are addressed in a separate report as part of the demand qualification component of this project.

a. Water services

- An assessment of StatsSA data from 1996 to 2016 indicates that the Council has provided full services as described in the national policies and strategies.
- There are currently (2016) 71 945 more households with full and intermediate services than in 1996. Thus, the households with full and intermediate services are 126 017. Municipalities' StatsSA non-financial census (NFC) put this figure at 139 147.
- According to the NFC, all the municipal households receive intermediate or full water service representing 127 173 households. The municipality reported 500 customer units with access to water more than 200m from their houses. However, the 2016 community survey showed 15 683 households have below basic or no services.

b. Sanitation services

- There was a clear move towards providing full sanitation services (waterborne sanitation). As a result, in 2016, there were 75 047 more households with waterborne sanitation than in 1996.
- The 2016 community survey showed that 14 568 households had below basic to no sanitation. The municipality provided sanitation for 135 559 households in 2020. The municipality reported 6 652 consumer units receiving VIPs or other sanitation services (Below basic).

c. Electricity services

- Eskom provides electricity to the municipal area.

- According to the 2016 Community Survey, the municipality had 130 655 households with access to electricity and 18 769 without access. The number is 123 347 households with electricity, according to the NFC in 2020. It is not possible to verify these numbers, but the fact Eskom provides electricity to parts of the municipal area may justify why the community survey holds a lower number.

d. Refuse removal

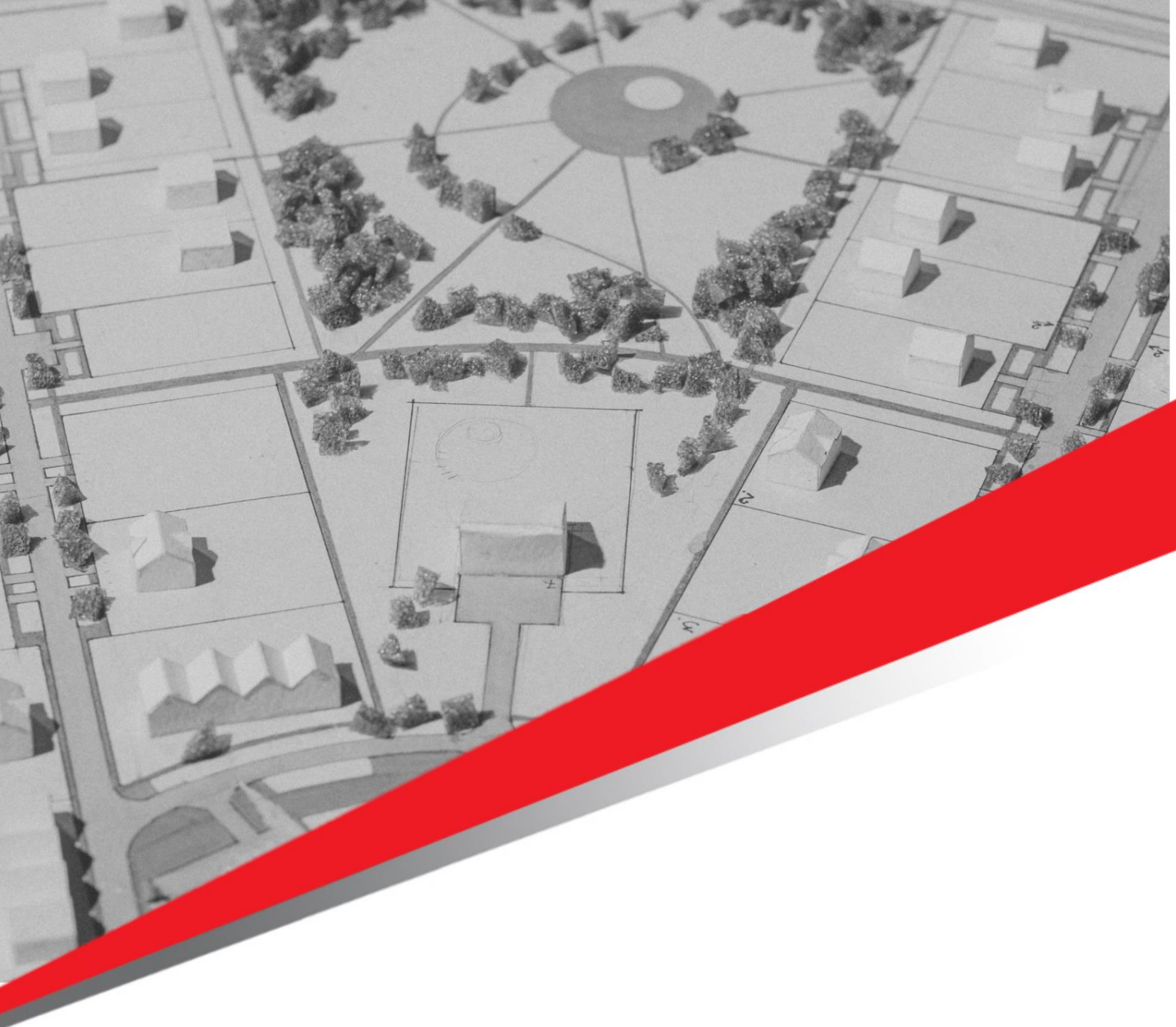
- According to the Non-financial Census for 2020 116 314 households received refuse removal services from the Council. The Council's Annual Report does not give any specific figures. Community Survey 2016 put the number of households receiving basic services or better at about 131 252 households.

e. Roads services

- For the purposes of this report, there is no distinction in road ownership. The following important figures do apply:
 - There is total of 2 845.8km of roads in Mogale City.
 - 32.1% of all roads (913.7km) are informal roads.
 - There are 1 191.9km of unpaved roads in Mogale City.
 - Only 53.7% of roads are paved roads.

2.12.7 Municipal institutional indicators

- The municipal services indicators as presented in StatsSA's Non-Financial Census for municipalities, were assessed in detail. However, from the reporting years, it is evident that there is, or was, a very high level of uncertainty and instability related to the political, financial and institutional challenges the Council faced over the past years.
- The 2019 figures show low staff vacancy rates in the departments, with the Electricity department having the highest vacancy rate at 67.3% in 2019.



Functional and Priority Development Area Identification

3 Functional and Priority Development Area Identification

3.1 Contextualisation

In terms of Section 152 (1) (b), (c) and (d) of the constitution, a municipality must ensure the provision of services to communities in a sustainable manner, promote social and economic development and promote safe and healthy environments. It continues and states in 152 (2) that a municipality must achieve the objectives set out in 152 (1) within its financial and administrative capacity.

The current developmental pressures experienced within the South African context, specifically the lack of available resources to address the infrastructure demand faced by municipalities, together with the legislative framework as set out in the constitution and other planning documents, led to the implementation of the principle of spatial targeting. Spatial targeting refers to the deliberate focus of particular actions on a specific spatial area. This concept is currently prevalent in the planning and urban management environment. It is a beneficial and efficient principle to apply when dealing with limited resources and when a municipality aims to address spatial injustices in a focussed and integrated manner. Therefore, this section seeks to define and delineate different Functional Areas. The section provides a brief background to Functional Areas and an overview of the methodology used. This chapter also presents the various development indices used to delineate the Functional Areas.

3.2 Introduction

This report is an interim deliverable of the process of developing a Capital Expenditure Framework (CEF). A CEF is a requirement of the Spatial Planning, and Land Use Management Act of 2013 (Act 16 of 2013) emphasised as an essential tool in the Integrated Urban Development Framework (IUDF) released in 2016 by the Department of Cooperative Governance and Traditional Affairs (COGTA). Since 2018, the IUDF was institutionalised as part of the planning and fiscal framework for municipalities. CEFs are formulated in term of guidelines issued by COGTA.

The purpose of this report is to determine the Functional Areas in the municipality. Part of the requirements of the CEF guidelines is the demarcation of Functional Areas in a municipality. Functional Areas must direct capital investment and the prioritisation of capital projects.

3.3 Understanding the concept of Functional Areas

According to the CEF Guidelines, a Functional Area is a region with similar characteristics from a developmental and service demand perspective. A typical example is demarcating all areas with rural traits because it has more or less similar challenges (low density, lack of high order services, remote locations and dependence of the primary sector for employment). Each Functional Area also requires a unique development strategy to address the area's development challenges.

The ability to sustain any function or service is based on a demand threshold. The threshold population, for example, to support a small café, is entirely different from the threshold population to sustain a hospital. Matters such as the threshold population's income, mobility, and many other factors complicate matters. Nevertheless, the crucial issue is that functional boundaries vary and do not necessarily coincide with municipal boundaries. Municipal boundaries describe administrative jurisdictions, but municipalities cannot plan for areas lying outside their mandated service delivery areas. In the same way that development efforts are focused on selected nodal areas, the demand for services and uses are determined and generated by the broader Functional Area that a node serves rather than the extent of development within the node only. Different demand thresholds, functional linkages and characteristics, necessitates a distinction between Functional Areas in a municipality.

3.4 A methodology for defining Functional Areas

Defining the municipality's Functional Areas requires a clear, rational and consistent methodology. The methodology adopted for this purpose relies on multi-criteria GIS analysis supported by two specific technical tools to achieve the desired results. The process is quantitative and evidence-based. These tools used in this process are described below.

3.4.1 Analysis approach

Before the multi-criteria GIS analysis depends on two components that made this exercise possible. The first is developing a suitable hexagon grid system, and the second is a place syntax approach for analysing data. In combination, these two elements allow for rational analysis within a consistent approach. The process results in a development potential index integrating the impact of a range of factors on any location in a municipality.

The next section provides a short overview of the two aspects that form the basis for developing Functional Areas.

- The hexagon-grid overlay made it possible to describe the status quo consistently and comparably through data partitioning and data bucketing. The hexagon grid makes this analysis possible and is a much improved and sufficient way of analysing large data sets, in more detail, at a regional scale.
- Space syntax is the approach used to analyse vast amounts of data used in this analysis. It uses the hexagon grid base and spatial data to present the data variables in terms of attraction and accessibility.

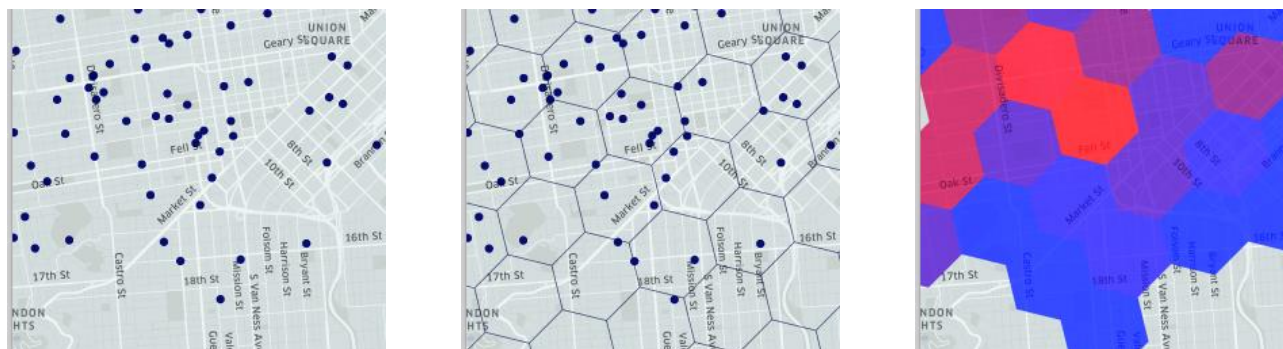
a. The hexagon grid base

Grid systems are critical to analysing sizeable spatial data sets and partitioning areas of a region into identifiable grid cells. With this in mind, a 250m¹ hexagon grid was used for the study area to analyse, explore, compare and visualise data.

Deriving information and insights from data require analysing data of different types and form across the municipality. Because cities and spatial data are geographically diverse, this analysis needs to happen at a fine granularity. Analysis at the finest granularity, the exact location where an event occurs, is exceedingly difficult and expensive. Analysis of areas, such as neighbourhoods within a city, is much more practical.

For this reason, the hexagon grid was developed to bucket events and data into hexagonal areas. Hexagons approach was an important choice because data changes over time, units of measure change and is often not presented consistently in terms of its spatial manifestation. An example is the ever-changing ward boundaries in a municipality. Hexagons also minimise the quantisation error introduced when these data changes take place. Hexagons also allow us to approximate radiuses easily.

Figure 3-1: The data 'bucketing' process

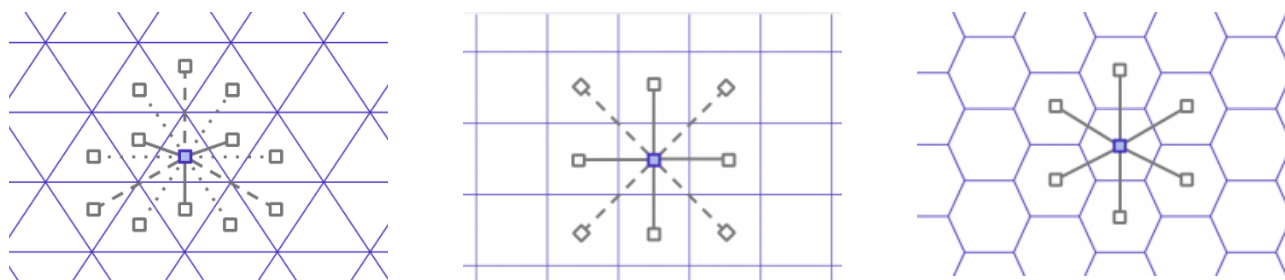


Choosing the hexagon as the basis of the analysis is important. The first consideration is the size of the hexagon. A 250m hexagon provides the right balance between the level of detail needed and the data types used in the analysis. The 250m hexagons also relate to what is considered a good size representing urban granularity. They provide a grain of information that is easy to process, analyse and visually present.

Another consideration is that hexagons have only one distance between a hexagon's centre point and its neighbours', compared to two distances for squares or three distances for triangles. This property greatly simplifies performing analysis and smoothing over gradients (Figure 3-2).

¹ The 250m hexagon grid was developed by Spatial Data Services Africa (www.sdsafrica.net) and 22 million hexagons cover the entire South Africa.

Figure 3-2: Distances from a triangle to its neighbours (left), a square to its neighbours (centre), and a hexagon to its neighbours (right)



b. Place syntax

A place syntax approach was used to combine the space syntax description of urban environments with conventional descriptions of attraction into a combined accessibility analysis to measure centrality. Measuring centrality can be done in several ways. The two most prominent ways are Integration or closeness centrality or betweenness centrality or choice. These measures can be defined as follows:

- Integration (or closeness centrality) is a measure that describes relativised asymmetry in the graph network.
- Choice measures movement flows through spaces. Spaces that record-high general choice is located on the shortest paths from all origins to all destinations.

Within this context, one can use various ways to apply these methodologies. They include:

- Angular integration analysis
- Angular betweenness analysis, and
- Accessibility analysis

For this project, the focus was on using the accessibility analysis method. Two types of accessibility analysis were used, namely, attraction distance and attraction reach.

Attraction distance captures proximity and measures the distance from the 'origin' points such as addresses, or in this case the centroid of each hexagon, to some kind of attraction, for instance, primary schools.

Attraction reach measures the total amount of attractions that can be reached within a certain distance from the points of origin. Thus, this is a kind of density measure, gives an indication of how many schools, shops or people can be reached within a neighbourhood (defined by distance).

Figure 3-3: Measuring attraction distance

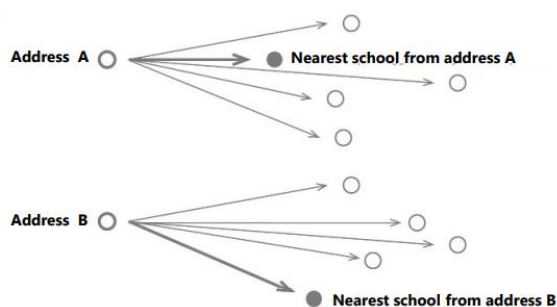
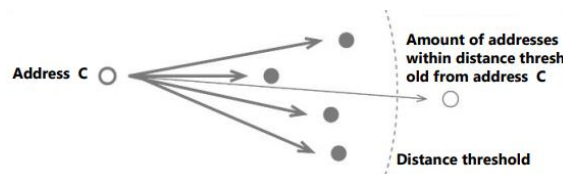


Figure 3-4: Measuring attraction reach



Attraction analysis can also be seen as a description of the presence (or absence) of society and answers questions

such as: "Which services are available within walking distance?" or "How equal is service distributed in a specific area."

3.5 Functional Area index modelling

The Functional Areas are based on existing data and information to ensure a link between current conditions and future development. This index should serve as an essential input into the decision-making process to guide development and direct the Capital Expenditure Framework's priorities.

The aggregate of the Functional Areas describes a development potential framework and provides a realistic representation of the municipality's current situation to compare and measure the spatial efficiency of the existing municipal spatial policies and strategies.

3.5.1 Steps in a multi-criteria analysis

Below are the necessary steps followed in a multi-criteria evaluation.

- Define the problem/question: Clearly define the goal or issue that the analysis needs to address.
- Determine the criteria: What are the factors and constraints that need to be considered?
- Standardise the factors: Normalisation process that allows various criteria to be compared with one another. Normalisation is typically done by ranking the factors in an index (i.e. 1 to 10) from high to low or good to bad.
- Determine each factor's weight: Decide the impact that each factor has and express it as a weighted percentage against the other factors.
- Aggregate the criteria: Various methods are used, of which weighted overlay or arithmetic overlay is most used to get a final suitability result.
- Validate/verify the result: Involves checking the results and adjusting the criteria' weightings if needed.

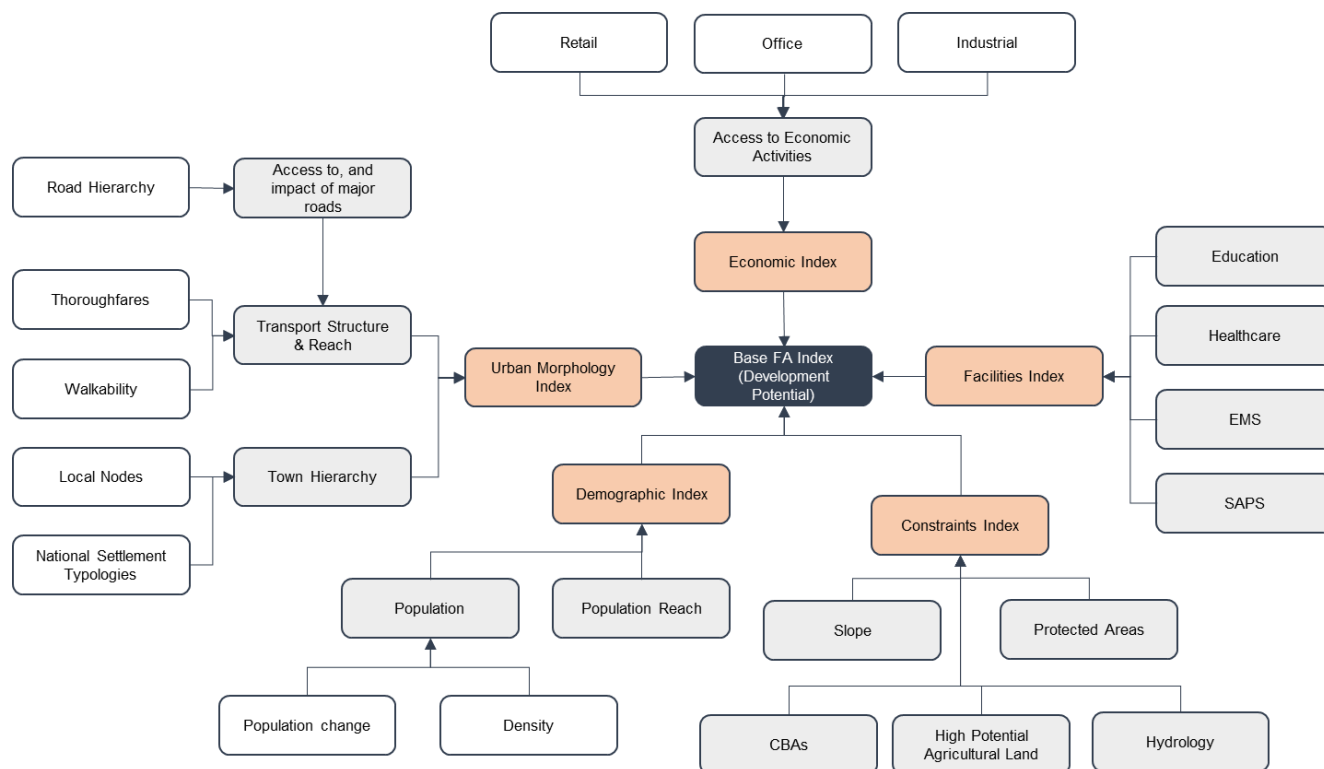
3.5.2 The Functional Area model methodology and results

The suitability model is presented in Figure 3-5. The final index comprises five (5) main criteria (sub-indexes), each of which is made up of several data and information inputs. Each of the criteria has a weighting out of 100, which shows its impact in the final results.

The five main criteria include urban morphology, access to facilities, demographic influence, economic influence, and environmental impact.

The subsequent sub-section and maps show the results of the analysis. The maps show the results of the variables considered in the development of each index map.

Figure 3-5: Development of potential modelling methodology²

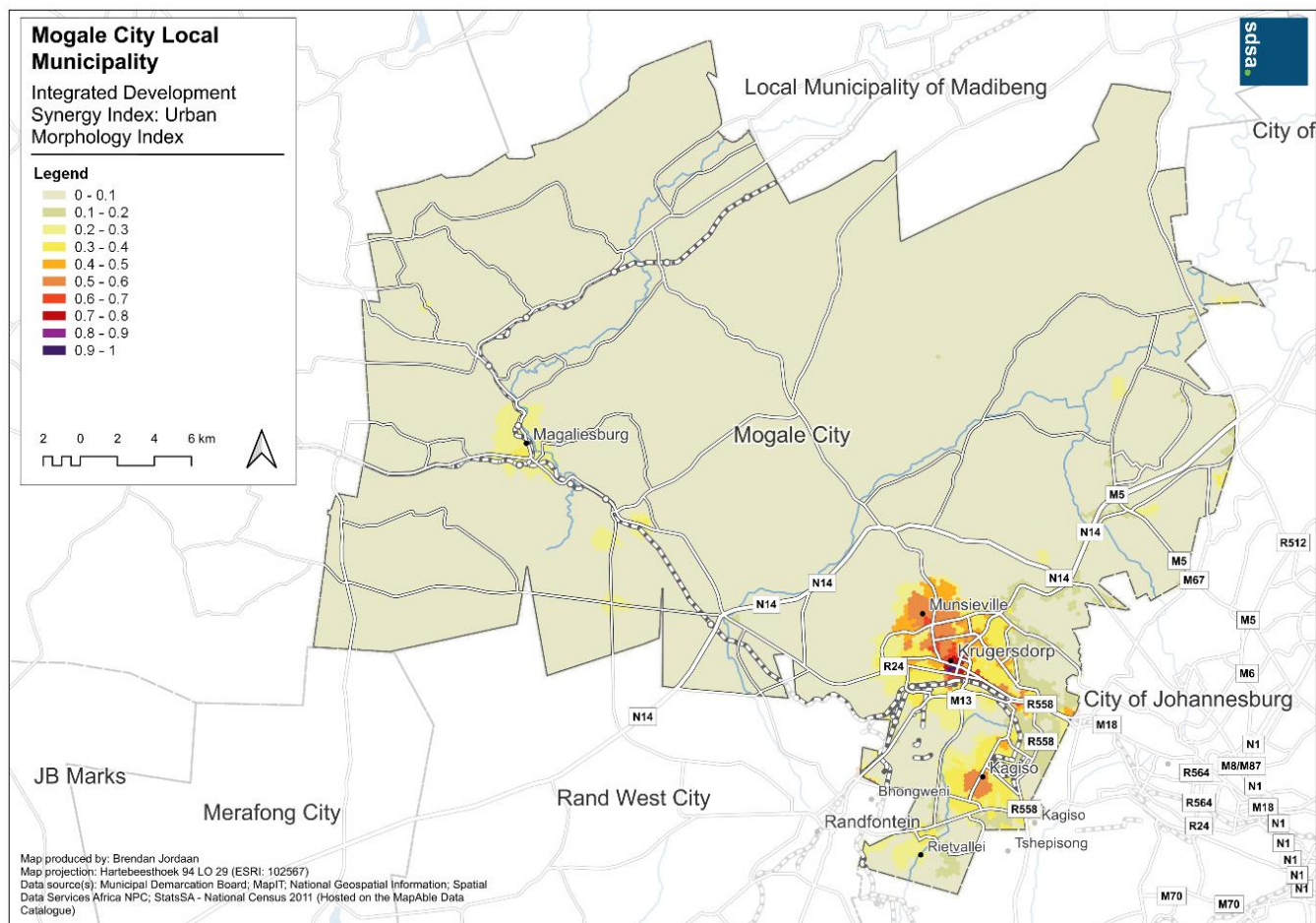


a. Urban morphology index

The urban morphology index considers some of the most significant physical and human-made structuring elements that impact development. Two main aspects are analysed. The first includes the accessibility, hierarchy and impact of existing towns and the second aspect consists of the effects of access and mobility features. The road network, its hierarchy and walkability are all factors in the analysis. The highest scoring areas relate to the centre of the towns Richards bay and Empangeni. The Richards bay area scores higher than Empangeni with the strongest node being indicated as the area surrounding the Meerensee Mall. The analysis also shows Esikhawini and Nseleni as smaller nodes with a more localised function. The combined results of the analysis are presented in Map 3-1 below.

² All data used and reflected in this report was extracted from the MapAble® data base. The MapAble database can be viewed by following this [LINK](#)

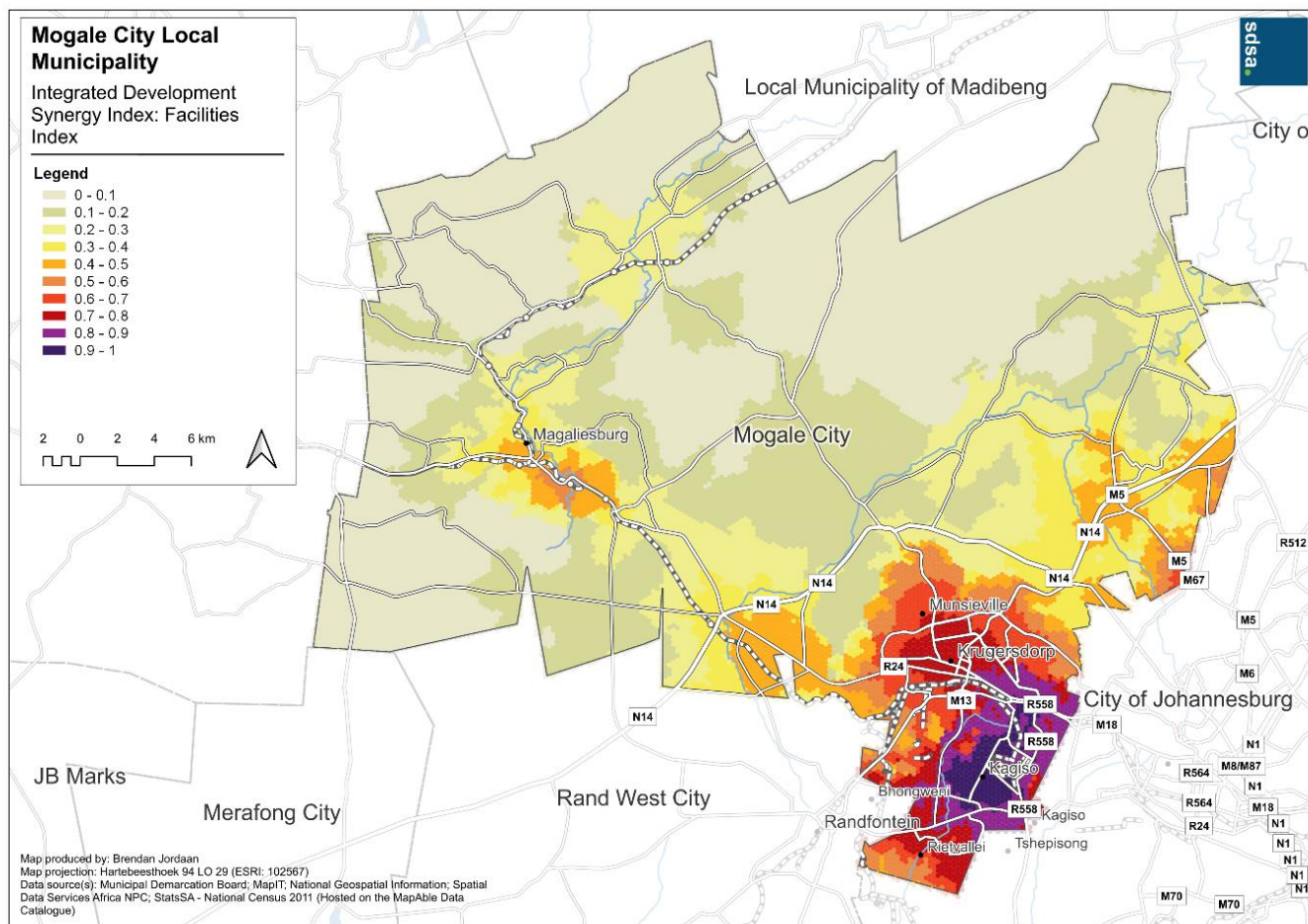
Map 3-1: Urban morphology index



b. Social facilities index

The social facility index measures the distance factor from schools, hospitals, clinics, emergency services and SAPS stations. These elements consider the relevant distance factor from each of these facilities described in the CSIR guidelines for social facilities provision. An attraction reach analysis was also done to identify how each hexagon cell in the municipality is served and how many facilities a location can access. The combination of the analysis results for different facilities provided an overall facility index for the municipal area. The analysis shows Richards bay central and Empangeni to be the highest scoring areas. In general the facilities index shows a broad distribution of facilities, as shown in Map 3-2.

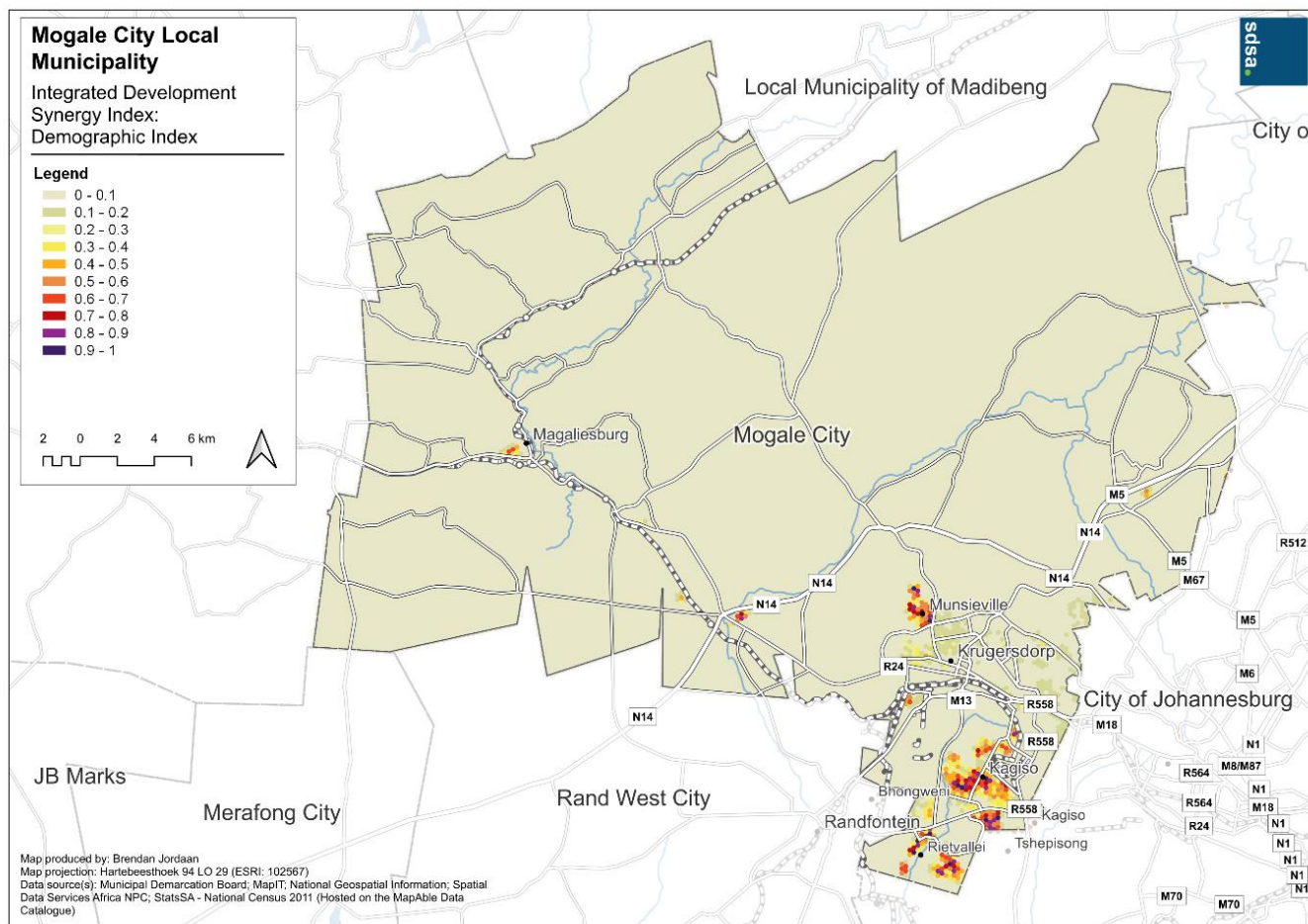
Map 3-2: Social facilities index



c. **Demographic index**

The demographic index considers three aspects. It firstly assesses the spatial density and distribution of people. The second aspect is where and to what extent population change has occurred between 1996 and 2020. The third aspect is how accessible the population is. This accessibility to people is essential, especially for service delivery and the people's general well-being. The results show a shift in priorities from the previous two indices. The highest scoring areas are the residential areas west of Empangeni central and Esikhawini. The settlement of Nseleni A also scored high. Richards bay central and the urban morphology highscoring area of Meerensee are much less prominent. Map 3-3 shows the population index.

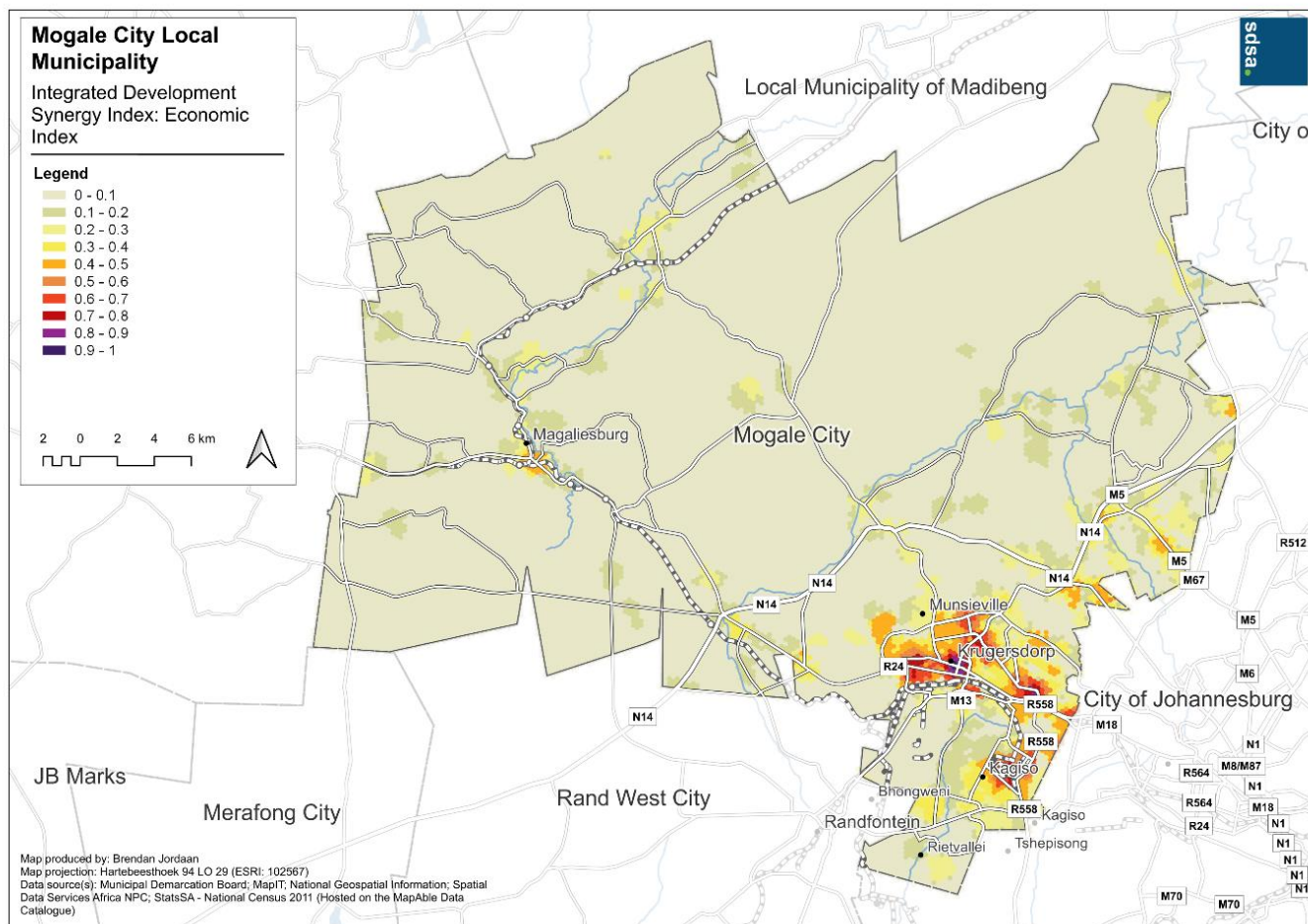
Map 3-3: Demographic index



d. Economic index

Map 3-4 shows the results of the economic index. The index assesses people's ability to reach areas of employment or specific commercial and industrial activities. An intense concentration of activities is evident within the Richedsbay Central area. The Empangeni central area also achieved a high score but is not as prominent. The area surrounding the R102 and Ngwelesaze Road Intersection also features prominently. The results shows the economic dominance in the area.

Map 3-4: Economic index

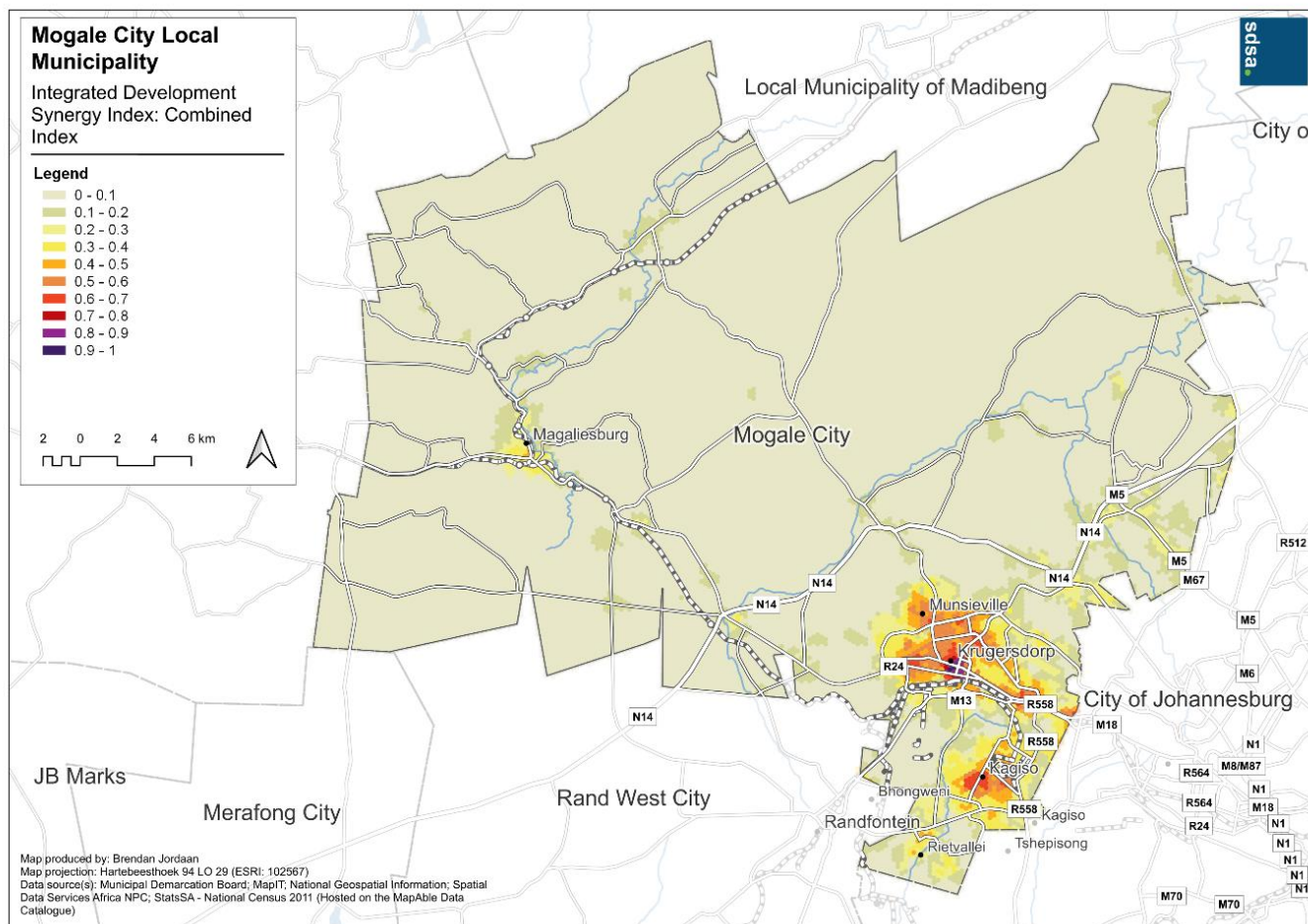


e. **Functional Area index**

The Functional Area index is a combination of the previous four indices. It considers all the above aspects and combines them to form a final index. Each of the indices mentioned above carries an assigned weight as part of the process. The weighting is derived from policy documents such as the IDP and SDF that guide the municipality's spatial vision and priorities. The final index result in Map 3-5.

The analysis results and the development of the indices now provide a base for identifying appropriate Functional Areas. These Functional Areas are derived based on a solid quantifiable approach. The following section describes how appropriate Functional Areas were delineated based on the indices developed in this chapter.

Map 3-5: Final development index



3.6 Defining the Functional Areas

3.6.1 A transect approach to defining Functional Areas

A solid theoretical base was required to derive Functional Areas from the index developed in the previous section. A suitable approach was found in the transect concept. Transects or sections through a landscape are not unique to regional planning. They have been used in environmental sciences to identify biological populations' change changing habitats (Grant, 2004) and asses humans' roll in a socio-ecological system (McDonnell, 1990). The application of a transect as an analytical tool can be traced back to early planning theorists such as Ebenezer Howard and Patrick Geddes (Hall, 2002) and (Talen, 2002).

A rural-to-urban transect has been adopted as the basis for New Urbanists' development regulation to generate an urban-form that is sustainable and liveable (Duany, 2002). Talen and Duany (2002) are prominent authors in using the transect approach for planning and designing urban and suburban environments. According to Tallen (2002: 251), the transect approach "seeks to organise the elements of urbanism, building, lot, land use, street, and all of the other

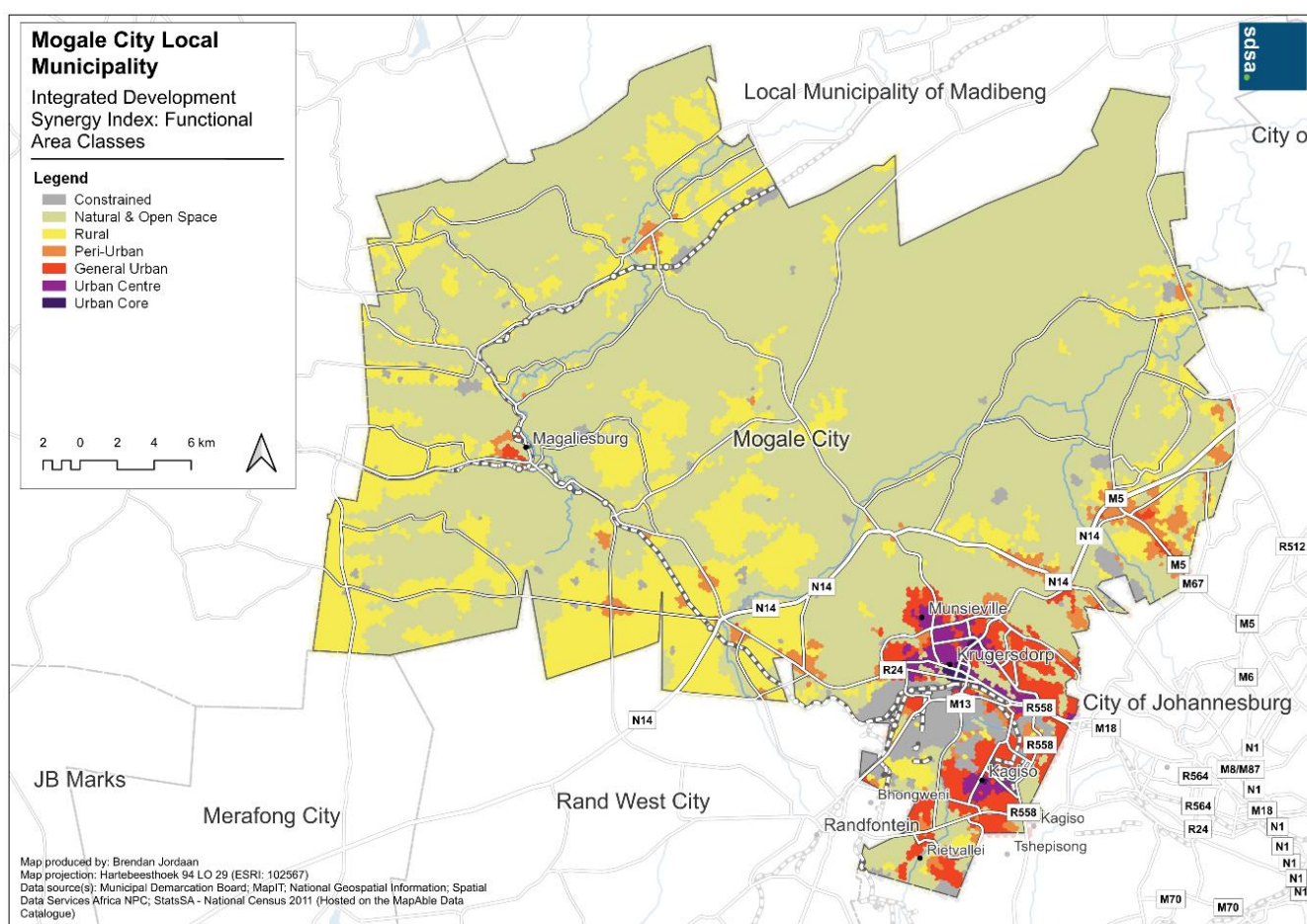
physical elements of the human habitat, in ways that preserve the integrity of different types of urban and rural environments".

Duany is also the author of a manual called the Lexicon for New Urbanism, where he developed the rural to urban transect for planning. Many other authors have also used this approach, most notably Tachieva (2010) in her acclaimed practical manual for sprawl repair. The manual, according to Tachieva, provides guidance for transforming fragmented and inefficient development into complete communities that are liveable and robust.

In South Africa, authors such as Nel (2016) have been making a case for a transect approach. She argues that from the research, it is evident that a transect, based on criteria such as land use and registration, density/intensity and agricultural suitability, can be formulated for South Africa to serve as a basis for both spatial planning and land use management on a regional and local scale.

Current research on the topic in South Africa suggests that the benefits of this approach allow for both flexibility and focus. This approach enables decision-makers to adapt each zone in the transect to what is locally appropriate, monitoring only what is essential to control and what is deemed appropriate in terms of planning guidelines. Change can be accommodated by amending the transect zone as an area becomes urbanised or formalised. A transect approach is also compatible with SPLUMA, as it can still generate nuanced broad land-use zones as required.

Map 3-6: Functional Areas



3.6.2 Functional Area classification

The final step in the process was the development of the Functional Areas. Classifying Functional Areas was achieved by grouping the index categories of the assessment into five (5) Functional Areas. The ten index categories were grouped into the different transects using statistical categorisation techniques. After each categorisation of the index, a ground-truthing process took place. This entailed comparing the results to aerial imagery to test the different

outcomes. The Functional Areas attempt to group locations of similar character to provide a unique development approach to each. The resulting Functional Areas are:

Development Intensity: High



Urban core



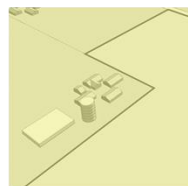
Urban centre



General urban



Peri urban



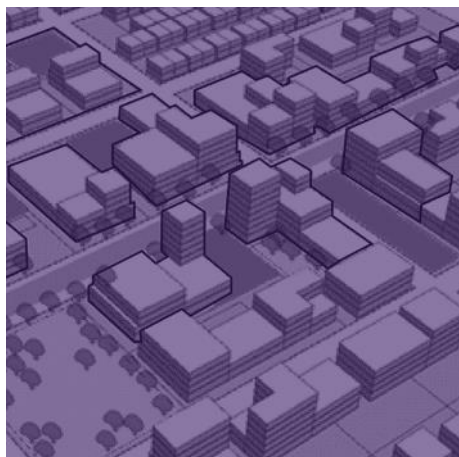
Rural

Development Intensity: Low



Natural

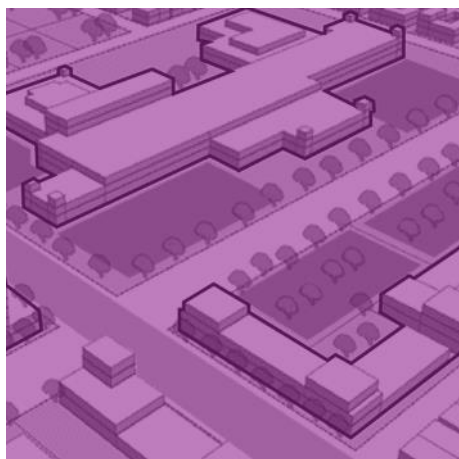
a. Urban Core



The urban core zone consists of the highest density and building height, with the greatest variety of uses, and civic buildings of regional importance. It may have larger blocks, streets have tree planning, and buildings are set close to wide sidewalks. Typically found in large towns or cities.

General development occurs through urban renewal as these areas are primarily associated with the oldest formal urban areas in the region. Densification, public transport and a focus on public space design and landscaping are often a priority.

b. Urban centre



This area is located where potential exists to create a consolidated urban district featuring commercial uses mixed with retail frontages and residential apartments. These areas are situated in areas of high accessibility and often form part of community-oriented corridors. These areas have a more localised impact and serve as multi-purpose destinations with an increased provision of amenities.

This area can form part and support the urban core or function as a smaller, more local urban centre. The general development approach is one of intensification and consolidation. Development intensity is less than that of urban core areas, but both areas share similar characteristics in terms of a greater mix and diversity of uses.

c. General urban



Typically, a place for mid-scale employment but primarily residential in nature. This can be in existing or designated suburban areas. These areas can also accommodate a variety of light industrial, small office and retail typologies.

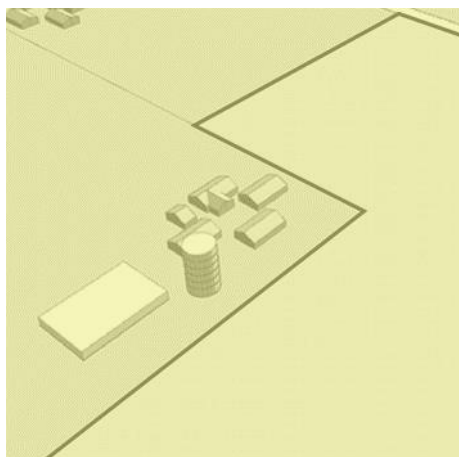
This area is stable in nature but can allow for transformation by allowing for infill development. These areas are often supported by local neighbourhood transit stops, connecting the area to more prominent business districts.

d. Peri-urban



These are largely residential areas and semi-rural areas supporting the needs of the existing and future communities. These areas incorporate new and existing residential areas and townhouses as plot consolidation will allow. These areas are characterised by existing suburbs and larger industrial areas as well as smallholdings and some well-located agricultural land, often under pressure for new development.

e. Rural



This area is most associated with open land, formal agriculture, mining or smallholdings resulting in sparsely populated areas. The area can support rural farm workers housing and small agricultural-related industry.

Development, in general, should be approached with caution and should only be allowed if and when infrastructure capacity is available.

f. Natural



These are areas not suitable for development and include areas that are environmentally sensitive, protected areas or land with unsuitable slope conditions.

Development is generally not allowed to support the natural features in this area. Most development relates to tourism and associated activities.

3.7 A comparative summary of the functional areas

Table 3-1: Comparative areas (ha)

Area	Urban core	Urban centre	Urban general	Peri-Urban	Rural	Natural	Constrained	Total
Area (ha)	189	1,629	4,866	3,545	26,208	97,071	4,054	134,525

Table 3-2: Comparative population and households

	Year	Urban core	Urban centre	Urban general	Peri-Urban	Rural	Natural	Constrained	Total
Total Population	1996	4,026	63,780	106,525	8,387	15,534	38,367	3,845	226,245
	2001	3,207	60,154	131,465	16,123	24,192	70,951	7,347	296,089
	2011	5,714	71,744	191,251	11,911	23,625	67,503	8,246	362,606
	2020	7,597	90,507	244,192	15,360	24,954	70,169	9,885	443,800
Population density (persons/ha)	1996	21.07	38.77	21.31	0.09	0.59	0.11	0.53	0.47
	2001	16.92	36.92	27.01	0.62	0.99	0.73	1.81	2.20
	2011	30.16	44.04	39.30	0.45	0.96	0.70	2.03	2.70
	2020					0.95			
Total households	1996	1,273	16,591	28,400	2,955	2,319	11,734	1,025	62,330
	2001	973	16,424	38,742	4,849	4,650	20,354	2,339	85,303
	2011	2,166	22,172	59,501	4,497	4,382	23,764	3,205	117,248
Household density (households/ha)	1996	6.66	10.08	5.68	0.03	0.09	0.03	0.14	0.13
	2001	5.14	10.08	7.96	0.19	0.19	0.21	0.58	0.63
	2011	11.43	13.61	12.23	0.17	0.18	0.24	0.79	0.87
Ave household size	1996	3.17	3.85	3.76	2.85	6.71	3.28	3.76	3.64
	2001	3.29	3.66	3.39	3.33	5.20	3.48	3.14	3.47
	2011	2.64	3.23	3.21	2.64	5.39	2.83	2.57	3.09

Table 3-3: Comparative average annual population growth 1996 to 2020

Area	Urban core	Urban centre	Urban general	Peri-Urban	Rural	Natural	Constrained	Total
Average annual growth	2.7%	1.5%	3.5%	2.6%	2.0%	2.5%	4.0%	2.8%

Table 3-4: Comparative dwelling frame 2018 profile

	Urban core	Urban centre	Urban general	Peri-Urban	Rural	Natural	Constrained	Total
Dwelling units	2,138	21,161	59,916	6,470	4,208	22,466	3,186	117,297
Businesses Unit	263	631	411	36	52	124	65	1,542
Special dwelling institution Unit	295	132	1,254	4	2	27	3	1,990
Service Units	36	92	128	7	44	82	9	365
Recreation Units	12	43	49	3	11	57	1	173
Other units	55	258	341	572	208	990	121	2,583

	Urban core	Urban centre	Urban general	Peri-Urban	Rural	Natural	Constrained	Total
Vacant units	181	323	1,868	424	33	1,163	55	4,779

Table 3-5: Comparative social and community facilities (number)

	Urban core	Urban centre	Urban general	Peri-Urban	Rural	Natural	Constrained	Total
Primary schools	0	15	19	2	9	11	0	50
Secondary school	0	4	13	2	4	1	0	22
Intermediate school	0	0	2	0	0	3	0	5
Combined school	0	1	3	1	3	0	1	7
Public health	3	2	16	2	0	5	0	29
Private health	2	0	1	0	0	0	0	3
SAPS stations	1	1	1	2	0	1	0	6
Lower courts	1	0	1	0	0	1	0	3

Table 3-6: Comparative landcover - non-urban (ha)

	Year	Urban core	Urban centre	Urban general	Peri-Urban	Rural	Natural	Constrained	Total
Cultivated commercial fields	1990		0.1	15.3	10,574.6	55.7	9,137.2	149.9	19,792.1
	2014			18.5	10,519.5	792.1	10,693.7	151.8	21,451.5
	2018			8.6	9,288.0		8,656.6	110.5	18,115.1
Cultivated commercial pivot	1990				161.9		220.5	13.2	401.6
	2014				1,478.8		416.4	21.5	1,901.0
	2018				1,688.0		465.0	27.9	2,193.4
Cultivated orchard and vines	1990				65.2	368.6	85.8	0.0	147.0
	2014				149.1	371.3	162.1	0.5	312.3
	2018			0.6	187.0		177.2	4.0	398.2
Sugarcane	1990					7,140.7			
	2014					5,922.3			
	2018								
Subsistence farming	1990				1.4	763.3	0.6		2.0
	2014			0.0	10.8	1,277.0	11.9		37.1
	2018				17.3		20.7		55.7
Forests & Plantations	1990	5.5	47.3	172.8	733.7	6,791.5	1,323.1	187.4	2,686.1
	2014	4.4	21.0	65.4	360.9	7,513.0	906.8	116.9	1,588.8
	2018	2.9	12.2	26.2	896.4		1,752.4	155.7	2,898.9
Mining	1990		0.3	2.3	33.1	11.8	66.3	1,134.0	1,190.9
	2014		0.4	2.5		3.7		1,217.1	1,156.6
	2018							1,401.5	1,389.7

Table 3-7: Comparative landcover - urban (ha)

	Year	Urban core	Urban centre	Urban general	Peri-Urban	Rural	Natural	Constrained	Total
Urban built-up	1990	24.5	58.7	124.5	380.5	12.0	648.7	117.3	1,403.9
	2014	36.8	95.5	191.2	390.7		608.3	83.8	1,478.1
Urban commercial	1990	93.7	109.3	53.6	10.0	9.5	56.1	7.9	330.4
	2014	79.9	120.0	78.5	11.1	8.6	68.2	6.2	370.4
Urban industrial	1990	8.9	162.5	247.7	1.4	99.7	49.7	7.7	484.5
	2014	5.6	131.4	200.6	8.9	105.7	40.3	6.4	398.3
Urban residential	1990	25.6	678.4	1,294.3	13.9	14.2	223.0	26.6	2,207.7
	2014	19.9	599.4	1,353.3	12.2	4.9	352.0	24.6	2,543.8
Urban townships	1990	5.3	260.0	423.9	6.4	41.8	15.3	24.1	737.0
	2014	4.3	256.6	848.6	10.0	46.5	44.8	25.9	1,194.4
Urban informal	1990		0.3	0.8	3.7	7.6	1.7		6.5
	2014		8.6	166.1	29.5		100.0	25.1	316.8
Rural villages	1990					2,359.9			
	2014					2,272.1			
Urban sports and golf	1990	2.2	15.2	67.9			26.9		119.3
	2014	2.3	14.9	75.3	27.2		36.5		156.3
School and sports grounds	1990	2.9	116.1	140.2	46.6	7.3	143.0	1.4	474.0
	2014	3.3	120.6	197.2	44.7	10.4	127.1	0.5	515.7
Smallholdings	1990		8.5	444.1	2,844.2	8.1	6,149.2	118.1	10,907.9
	2014		7.3	326.1	2,735.8	17.1	5,520.9	97.0	9,912.1

Table 3-8: Comparative access to water services (% households)

	LOS	Urban core	Urban centre	Urban general	Peri-Urban	Rural	Natural	Constrained	Total
1996	Full	78.3%	74.8%	62.9%	29.5%	11.7%	46.2%	69.1%	61.3%
	Intermediate	19.7%	22.0%	28.7%	22.3%	3.2%	20.8%	18.8%	25.5%
	Basic	0.5%	2.6%	7.3%	5.6%	18.4%	6.5%	1.8%	5.0%
	Below Basic	0.2%	0.1%	0.2%	37.2%	31.4%	22.8%	8.5%	6.6%
	None	1.3%	0.5%	1.0%	5.4%	35.3%	3.7%	1.8%	1.6%
2001	Full	68.9%	50.1%	38.8%	30.2%	6.9%	33.9%	30.4%	39.1%
	Intermediate	28.4%	44.2%	51.3%	35.7%	41.5%	38.7%	21.0%	45.7%
	Basic	1.1%	3.1%	5.6%	13.6%	11.1%	10.8%	39.5%	7.7%
	Below Basic	1.5%	2.2%	3.7%	16.9%	21.5%	13.9%	7.7%	6.3%
	None	0.1%	0.4%	0.7%	3.6%	19.0%	2.7%	1.3%	1.2%
2011	Full	67.9%	68.1%	56.1%	30.7%	17.7%	44.4%	31.3%	54.8%
	Intermediate	31.1%	29.3%	36.4%	38.3%	50.6%	25.2%	21.2%	32.5%
	Basic	0.6%	1.7%	4.0%	13.9%	16.4%	12.2%	32.8%	6.0%
	Below Basic	0.1%	0.5%	2.6%	8.7%	6.4%	6.9%	13.7%	3.8%
	None	0.3%	0.4%	0.8%	8.4%	9.0%	11.3%	1.1%	2.9%

Table 3-9: Comparative access to sanitation services (% households)

	LOS	Urban core	Urban centre	Urban general	Peri-Urban	Rural	Natural	Constrained	Total
1996	Full	98.4%	95.6%	92.7%	54.6%	11.6%	67.2%	81.7%	87.1%
	Intermediate	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Basic	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Below Basic	0.2%	1.8%	4.1%	42.2%	66.7%	28.6%	14.0%	9.8%
	None	1.4%	2.6%	3.2%	3.1%	21.7%	4.2%	4.3%	3.1%
2001	Full	98.2%	92.9%	84.0%	42.3%	15.6%	62.7%	46.9%	77.5%
	Intermediate	0.0%	0.1%	2.3%	1.8%	12.3%	1.7%	2.3%	1.7%
	Basic	0.3%	0.2%	1.8%	4.3%	12.5%	3.3%	1.2%	2.0%
	Below Basic	0.2%	3.7%	9.6%	41.5%	35.1%	24.6%	36.8%	14.5%
	None	1.2%	3.1%	2.2%	10.1%	24.5%	7.8%	12.9%	4.3%
2011	Full	98.7%	96.5%	89.5%	52.8%	16.6%	63.5%	52.5%	84.0%
	Intermediate	0.0%	1.0%	1.5%	4.8%	11.2%	6.3%	12.9%	2.9%
	Basic	0.1%	0.2%	2.6%	4.5%	38.5%	7.9%	2.8%	2.3%
	Below Basic	0.7%	1.4%	5.2%	32.4%	27.0%	18.6%	25.1%	8.8%
	None	0.5%	0.9%	1.2%	5.5%	6.8%	3.7%	6.6%	1.9%

Table 3-10: Comparative access to refuse removal services (% households)

	LOS	Urban core	Urban centre	Urban general	Peri-Urban	Rural	Natural	Constrained	Total
1996	Full	96.8%	94.4%	87.7%	10.1%	7.9%	38.2%	69.0%	76.1%
	Intermediate	0.4%	0.9%	2.5%	1.8%	0.3%	2.2%	2.2%	2.1%
	Basic	0.1%	1.7%	1.6%	25.3%	2.2%	13.0%	8.3%	5.1%
	Below Basic	0.0%	0.4%	3.6%	56.3%	71.1%	38.5%	16.9%	12.1%
	None	2.6%	2.5%	4.5%	6.2%	18.5%	7.9%	3.5%	4.4%
2001	Full	92.9%	95.0%	91.3%	7.7%	8.0%	38.8%	48.2%	72.8%
	Intermediate	6.5%	0.5%	0.6%	1.2%	0.9%	1.3%	7.3%	1.0%
	Basic	0.2%	1.2%	1.6%	6.2%	0.4%	3.7%	15.7%	2.8%
	Below Basic	0.2%	0.7%	2.4%	76.9%	81.2%	51.0%	20.6%	18.9%
	None	0.2%	2.6%	4.1%	8.1%	9.5%	5.3%	8.2%	4.4%
2011	Full	99.6%	97.5%	90.6%	22.0%	11.7%	56.9%	46.7%	79.7%
	Intermediate	0.2%	0.3%	0.6%	5.0%	1.6%	4.9%	7.7%	1.8%
	Basic	0.0%	0.5%	1.7%	5.3%	1.5%	5.7%	7.0%	2.6%
	Below Basic	0.0%	0.4%	4.4%	57.4%	76.4%	25.4%	23.9%	11.7%
	None	0.2%	1.4%	2.6%	10.3%	8.9%	7.1%	14.7%	4.2%

Table 3-11: Comparative access to electricity services (% households)

	LOS	Urban core	Urban centre	Urban general	Peri-Urban	Rural	Natural	Constrained	Total
1996	Full access	91.5%	87.4%	85.1%	63.7%	53.9%	70.4%	87.4%	82.6%
	No access	8.5%	12.7%	14.9%	36.3%	46.1%	29.6%	12.6%	17.5%
2001	Full access	96.3%	90.4%	86.1%	53.5%	74.9%	67.9%	46.8%	80.0%
	No access	3.7%	9.6%	13.9%	46.5%	25.1%	32.2%	53.3%	20.0%
2011	Full access	98.6%	95.6%	91.6%	68.1%	84.7%	68.4%	49.7%	86.2%
	No access	1.4%	4.4%	8.4%	32.0%	15.4%	31.6%	50.4%	13.8%

Table 3-12: Comparative road type/class (km road)

	Urban core	Urban centre	Urban general	Peri-Urban	Rural	Natural	Constrained	Total
Major road (National Major roads of a country including all freeways)	0.0	0.0	1.6	9.6	12.4	29.2	1.1	53.0

	Urban core	Urban centre	Urban general	Peri-Urban	Rural	Natural	Constrained	Total
Main road (Provincial roads and major city through routes)	11.0	42.0	60.8	30.0	50.6	147.7	13.9	347.3
Secondary road (Secondary roads including slipways)	0.0	0.0	0.2	6.2	64.4	127.2	3.7	198.2
Suburban road (Formal suburban roads including slipways)	26.3	204.4	523.1	97.2	58.3	279.6	43.8	1,197.8
Informal roads (Alleys, Access ways, roads in informal settlements and squatter camps, farm and other small dirt roads)	4.2	9.0	57.1	35.9	199.8	589.2	55.3	913.7
Tracks (Non-routable roads: including 4x4 tracks)	0.0	0.0	0.5	0.0	5.7	109.5	6.1	121.8
Trails (Pedestrian walkways in cities and towns, walking and hiking trails)	0.0	0.0	0.5	0.0	0.0	3.8	0.0	3.9
Totals	41.7	256.1	645.9	180.3	392.2	1,291.7	123.8	2,845.8



Demand Quantification

4 Demand Quantification

This section of the report forms part of the process of formulating a Capital Expenditure Framework for the municipality. This section focuses on the quantification of the demand for services. The section's outcomes build on the issues highlighted in the Socio-economic Report and the Report on the Functional Areas in the municipality.

The purpose of doing a demand quantification is to create a baseline for project prioritisation and to set infrastructure investment targets for formulating a capital expenditure framework for the Council. This report does not address service delivery alternatives or the impact of alternative service delivery policies and strategies.

The capital investment emphasis within the local government in South Africa has been mainly on extending services to poor households over the past two decades. Service extension happened in an environment where major population shifts occurred through accelerated urbanisation, decreased population growth, and even a decline in population in some rural and urban areas. However, extending access to services must be regarded as only one of three major investment areas requiring attention to sustain or accelerate development and economic growth in any municipality. In this dynamic process, three components contribute to the demand for investment:

- The number of existing households without access to services;
- The need to renew (rehabilitate and maintain) existing infrastructure and;
- The growth in households and the economy.

Addressing backlogs (service access) remains a key focus, while demand created through growth received indirect and mostly inadequate attention. The inability to meet growth demands resulted in and contributed to growing backlogs. Infrastructure practitioners have consistently recognised the need to address infrastructure renewal, but it has only recently started to feature in the policy debate and filter through formal government support strategies.

The purpose of this section is to quantify long-term investment demand by considering the following three elements:

- Population-based demand – population change and characteristics determine the current and future customer base served by the Council and thus what the quantum of the services to be delivered should be;
- Level of Service (LOS) choices – the LOS offered by the Council for each infrastructure component varies but has a significant effect on the affordability of services, and;
- The land use requirements and the resulting capital and operating expenditure consequences of investment demand in the context of the Council's service delivery policies and choices.

Although project prioritisation and planning allow for spatial targeting and considering the functional areas in the municipality, demand quantification reflects on the municipality as one integrated delivery and financial system. Consequently, the demand for services and the impact thereof on the capital and operating account of the Council affects the total system and cannot be attributed to any specific geographic locations in the municipality.

4.1 Investment demand and growth

Investment demand is a function of three core processes, namely, the investment required to address backlogs in services access, secondly, the investment to address the required renewal of assets and renewal backlogs, and lastly, the investments that are necessary to address the demand created through growth.

The purpose of this section in the report is to contextualise the demand quantification process elements. It shows how the critical aspects of infrastructure demand relate to each other and how they manifest in the municipal area. Investment demand is a function of three core processes, namely:

- The investment required to address backlogs in services access
- Investment to address the required renewal of assets and renewal backlogs
- The investments that are necessary to address the demand created through growth

The project scope determines the extent to which this report could deal with these elements.

4.2 The infrastructure planning equation

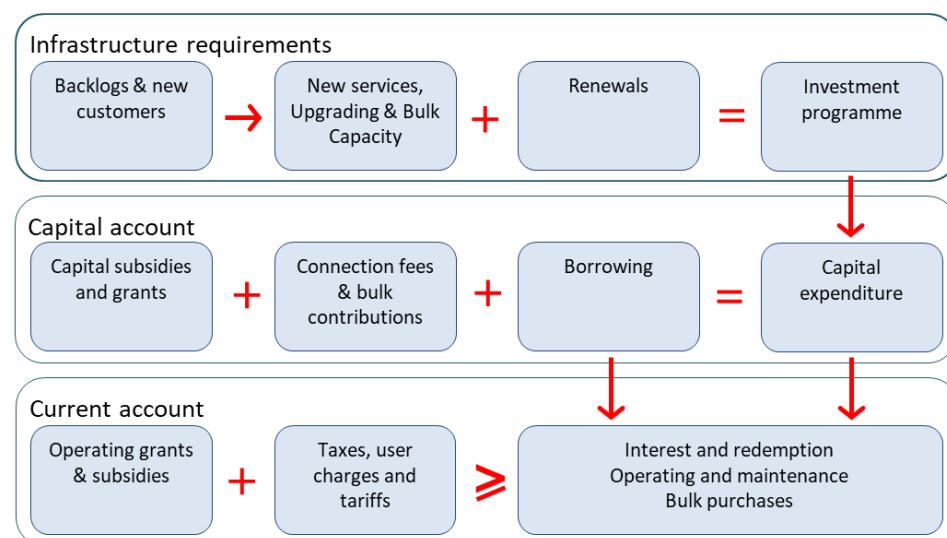
Long-term customer growth is usually one of the biggest drivers of investment demand. The ability to address growth ensures, at a minimum, that increases in backlogs do not occur. It, however, adds to operating expenditure and the maintenance burden of a service provider, which must be offset against income and revenue streams.

The services, infrastructure delivery, and the relationship with demand and supply within a sustainable framework are embedded in the analytical framework shown in Figure 4-1.

This framework describes the relations between:

- **Infrastructure requirements** are determined by the extent of existing backlogs and residential and non-residential growth (new customers). The growth in customers translates into the demand for new services, upgrading existing services and providing adequate bulk capacity. When the requirements for the renewal of existing services are added to the equation, the result is the quantum of the total investment programme.
- **The capital account** shows the funding sources to meet the capital expenditure requirements resulting from the investment programme. Developing a funding framework for the investment programme usually prioritises capital grants and subsidies. Connection fees paid by customers augment capital grants and subsidies. However, if there is still a gap between the funding sources and the investment programme, borrowing money in the open market is the only alternative. Many factors impact a Council's ability to balance an investment programme's requirements and the capital account's capacity. The factors that affect the extent of the investment programme are:
 - The extent of urbanisation
 - Economic growth cycles
 - Service delivery policies and specifically the levels of services
 - Cost recovery and service pricing
 - Life cycle cost management of the infrastructure asset base
- The level of capital expenditure is a function of available funding (i.e. the affordability envelope) and access to funding sources (i.e. optimal funding mix). The investment programme must be appropriately funded, which may imply replanning, reprioritising investment projects and addressing the impact of service delivery and indigent policies.
- **The current account** shows the impact of the investment program and capital account on the Council's cash flow. To balance this equation, the impact of capital expenditure, interest and redemption, operating and maintenance and bulk purchases must be smaller or equal to the total income sources. Financial sustainability implies that this equilibrium must be maintained over the long term. The CEF deals with these issues over ten years, but the cumulative impact of investment decisions on the current account may manifest only over the long term. Inappropriate investment policies and strategies often result in irreversible structural impediments.

Figure 4-1: Infrastructure investment planning equation



4.3 Setting a data baseline for assessment

The backlog data is shown in paragraph 4.4 below are extracts based on official data. The biggest challenge lies in estimating households settled in informal structures and then households occupying informal structures and rooms in the backyards of existing formal houses.

The different data sets provide a pool of data. However, each element and how it is presented has a different meaning, and there are nuanced differences depending on who is dealing with and presenting the data. The following should be considered. The following data elements are used in the municipal service delivery environment and are closely related but not similar. Depending on the approach to the issues, seemingly similar data sources can render important differences based on interpretation and understanding. The following terms are important:

1. **Households** is an economic concept specifically defined by StatsSA. It means a group of people living from a single budget. It can imply any number of people, an extended family, or often a single person, such as a student in a residence or a worker in a hostel.
2. **Structures** in a municipality usually represent residential and non-residential structures. These figures may refer to different types of buildings.
3. **Customer units** are entities that can demand services from the Council and legally enter into service agreements to receive and pay for those services.
4. **Debtors** are the customers reflected in the financial system and often do not reflect all the potential customers in a municipality.
5. **Erven or stands** are related to all the above but describe cadastral units occupied by single or multiple entities.
6. **Service connections** are related to stands and debtors but provide a technical perspective. Service connection to customers may vary according to the type of service.
7. **Levels of services** refer to the different technologies used to provide customers, households, and non-residential entities access to services. Service levels have a quantitative connotation and service standards reflect the qualitative aspects of service delivery.
8. **Urban / Non-urban** impact service areas and differ depending on service type and approach.
9. **Family** is a social concept but has a specific connotation regarding housing typologies and, for example, government policies to convert hostels into family units.
10. **Informal structures** are an essential element as it relates to service delivery and housing. An informal structure can be serviced but still form part of a housing backlog. Importantly, the approach to do in-situ upgrading versus relocating households also directly describes and quantifies households and service demand.
11. **Backyard settlements** have many forms ranging from formal housing, such as granny flats, to informal structures attached to households. A council's policy regarding backyard settlement directly impacts dealing with service demand. If backyard settlement is an acceptable housing typology, then it eliminates the demand for capex, but it may lead to overextending the design capacities of water, sanitation and electricity services.

These elements are all related but can render vastly different outcomes when interpreted or often used interchangeably.

The following are the available figures for different components:

Table 4-1: Key households and service numbers

	Total	Unit	Comment
StatsSA Community Survey 2016	149 980	households	This figure represents the full geographic extent of the municipal area. It does not imply that all these households are with the LM's service areas.
StatsSA Non-Financial Census of Municipalities 2020	139 147	households receiving water	The extent of the figure may be the total position in the municipality and not only those on the Council's debtors base.
StatsSA Community Survey 2016	134 297	households receiving water	It shows the total municipal area but implies substantial growth, given the difference between this figure and the previous one. Furthermore, it reflects the backlog of about 15 683 reported in the CS16.
StatsSA Non-Financial Census of Municipalities 2020	135 559	households receiving sanitation	The extent of the figure may be the total position in the municipality and

	Total	Unit	Comment
			not only those on the Council's debtors base.
StatsSA Community Survey 2016	135 411	households receiving sanitation	Shows the total municipal area and records a backlog of
StatsSA Non-Financial Census of Municipalities 2020	123 347	households receiving electricity	The extent of the figure may point to households on the Council's debtors base. The smaller figure may reflect the impact of Eskom supply areas.
StatsSA Community Survey 2016	130 655	households receiving electricity	Shows the total municipal area
StatsSA Non-Financial Census of Municipalities 2020	116 314	households receiving refuse removal	The extent of the figure may point to households on the Council's debtors base.
StatsSA Community Survey 2016	131 250	households receiving refuse removal	This should show the total municipal area and note that it is marginally lower than the CS2016 figure.
StatsSA Dwelling farms 2020	120 899	dwelling units urban	This is the number of dwellings in the urban areas as per the functional area report. This figure starts to align with the figures submitted by the Council to StatsSA.
Quantec (commercial database)	131 848	households	This is a derived figure based on StatsSA's mid-year estimates
StatsSA Midyear Estimates 2020	146 078	households	This is a projected figure by StatsSA. StatsSA has stopped releasing mid-year estimates at a municipal level.
Census data-based projection	141 078	households	This is a trend based on the previous three censuses
StatsSA Community Survey 2016	149 980	households	This figure represents the full geographic extent of the municipal area. It does not imply that all these households are with the LM's service areas.
StatsSA Non-Financial Census of Municipalities 2020	139 147	households receiving water	The extent of the figure may be the total position in the municipality and not only those on the Council's debtors base.
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StatsSA Non-Financial Census of Municipalities 2020	135 559	households receiving sanitation	The extent of the figure may be the total position in the municipality and not only those on the Council's debtors base.
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StatsSA Midyear Estimates 2020	146 078	households	This is a projected figure by StatsSA. StatsSA has stopped releasing mid-year estimates at a municipal level.
Census data-based projection	141 078	households	This is a trend based on the previous three censuses

The following should also be considered:

Table 4-2: Key numbers that should be considered in the demand quantification process

Source	Total	Unit	Comment/note
Total number of stands	64 539	Stands counted from Surveyor General data	It is not possible to give a break done by use or zoning.
Net number of "residential" stands		stands	It is not clear to what extent the vacant stands are serviced and what the ownership is. This can have an impact on the long-term investment demand.
Backyard unit estimates	29 844	households	Due to a lack of space, there is evidence of a substantial of backyard shacks attached to formal houses. The figure as per CS2016 was used.
Informal structures	15 173	households	It is not possible to be accurate with this figure from the available information.
Total number of stands	64 539	Stands counted from Surveyor General data	It is not possible to give a break done by use or zoning.
Net number of "residential" stands		stands	It is not clear to what extent the vacant stands are serviced and what the ownership is. This can have an impact on the long-term investment demand.

The service access figures are important but extremely difficult to estimate. The figures vary and figures in official sources may not reflect the de facto situation and the actual demand for services. Therefore, the figures used in the demand quantification process are only broad estimates. There is currently no integrated development information system in the Council.

4.4 Dealing with infrastructure backlogs

Infrastructure services are crucial for the betterment of all communities in South Africa. It is a core function of government, and since 1994 access to services for previously disadvantaged communities has been emphasised to the extent that it has become the driving force of most government delivery policies. Initial approaches were to meet the health requirements of the World Health Organisation and hence the adoption of the so-called "RDP standards", later referred to as access to basic services. However, service delivery policies have remained in tack for the past 25 years, but the application has evolved, and services currently provided exceed the initial norms and standards.

4.4.1 Water services

Water services have been a high priority in service delivery strategies over the past two decades. One of the Millennium Goals adopted in 2000 stated that countries should aim to halve the proportion of people without access to safe drinking water and basic sanitation by 2015. At least 50% of households should have access, as a minimum, to basic services in terms of these goals.

The table below shows the access to water has changed between 1996 and 2016

Table 4-3: Access to water services 1996, 2001, 2011 and 2016

		Full	Intermediate	Basic	Below Basic	None	Total
1996	Total	54 289	NA	NA	6 128	1 914	62 330
	%	87,10%	NA	NA	9,83%	3,07%	100%
2001	Total	70 234	1 614	1 822	13 572	4 246	91 487
	%	76,77%	1,76%	1,99%	14,83%	4,64%	100 %
2011	Total	98 479	3 424	2 751	10 309	2 286	117 248
	%	83,99%	2,92%	2,35%	8,79%	1,95%	100%
2016	Total	129 336	4 072	2 003	13 782	786	149 980
	%	86,24%	2,72%	1,34%	9,19%	0,52%	100%

The data shows that the Council provides differentiated services with a strong emphasis on full and intermediate services, representing a yard connection to a stand or a house connection in the case of full services. However, backlogs are growing. The number of households without services increased between 2011 and 2016.

Table 4-4: Number of consumer units receiving water services

	Number of domestic consumer units served through a delivery point				Total number of non-domestic consumer units receiving water services	Total number of consumer units receiving water services
	Inside the yard	Less than 200m from a yard	More than 200m from a yard	Total number of domestic consumer units receiving water services		
2017	105 848	7 020	4 500	117 368	2 476	119 844
2018	118 000	8 000	3 000	129 000	2 476	131 476
2019	104 020	8 000	3 000	115 020	1 734	116 754
2020	127 173	9 740	500	137 413	1 734	139 147

Source: StatsSA Non-financial census data

According to the table above, the municipal area has practically no service backlog. However, these figures vary substantially between years, and the reason for these fluctuations is unclear.

The table below shows the position with free basic services in the Council area. The self-targeting approach is acceptable and might be preferred to a blanket free basic services policy. However, 9.8% of all customers receive free basic services. This is extremely low and may be a result of local metering and billing practices and credit control regimes.

Table 4-5: Free basic water services

	Customers receiving services from the municipality	Receiving free basic services	Has the Council a free basic services policy?	Mechanisms for providing Free basic services
2017	119 844	18 287	Yes	
2018	131 476	10 622	Yes	Self-targeting
2019	116 754	9 943	Yes	Self-targeting
2020	139 147	5 365	Yes	Self-targeting

Source: StatsSA Non-financial census data

4.4.2 Sanitation services

Access to appropriate sanitation services is a high health priority. Although sanitation services receive a high priority from the government, there are always challenges. This section shows the sanitation access for the municipality.

Table 4-6: Access to sanitation services 1996, 2001, 2011 and 2016

		Full	Intermediate	Basic	Below Basic	None	Total
1996	Total	54 289	NA	NA	6 128	1 914	62 330
	%	87,10%	NA	NA	9,83%	3,07%	100%
2001	Total	70 234	1 614	1 822	13 572	4 246	91 487
	%	76,77%	1,76%	1,99%	14,83%	4,64%	100 %
2011	Total	98 479	3 424	2 751	10 309	2 286	117 248
	%	83,99%	2,92%	2,35%	8,79%	1,95%	100%
2016	Total	129 336	4 072	2 003	13 782	786	149 980
	%	86,24%	2,72%	1,34%	9,19%	0,52%	100%

There is a clear preference for providing waterborne sanitation. However, this approach is costly and water-intensive, which may pressure water and sanitation infrastructure. The extent of sanitation backlogs is substantial, but the number of households receiving full waterborne sanitation may create affordability problems (households receiving a level of service which they cannot pay for) which may contribute to cash flow problems for the Council.

The table below shows that the figures the Council to StatsSA reported differ from the census and community survey trends. This illustrates the necessity to cross-correlate data from different sources and the dangers of working with a single data source. This data does not align with the data in the previous table. The reason is unclear.

Table 4-7: Number of consumer units receiving sanitation services

	Flush toilets connected to public sewerage system	Flush toilets connected to septic tank	Bucket system	Ventilated improved pit latrines	Other	Total number of domestic consumer units receiving sanitation services	Total number of non-domestic consumer units receiving sanitation services	Total number of consumer units receiving sanitation services
2017	110 708	0	0	290	2 505	113 503	2 476	115 979
2018	112 022	0	0	8 000	0	120 022	2 476	122 498
2019	92 240	0	0	11 070	0	103 310	1 735	105 045
2020	127 173	0	0	4 470	2 182	133 825	1 734	135 559

The table below shows the reported number of customers receiving free basic services. The numbers are inconsistent with census and community survey figures.

Table 4-8: Free basic sanitation services

	Customers receiving services from the municipality	Receiving free basic services	Has the Council a free basic services policy?	Mechanisms for providing Free basic services
2017	115 979	8 835		
2018	122 498	10 622	Yes	Self-targeting
2019	105 045	9 943	Yes	Self-targeting
2020	135 559	5 184	Yes	Self-targeting

4.4.3 Electricity services

Although electricity does not have the same implications for health as water and sanitation, access to electricity is essential for general development, especially education. Access to electricity was, therefore, always a high priority. The table below shows how access to electricity has changed since 1996. This table is based on access to lighting as a proxy for access to electricity.

Table 4-9: Access to electricity services 1996, 2001, 2011 and 2016

		Full access	Intermediate access	No access	Total
1996	Total	51 406	NA	10 925	62 330
	%	82,47%	NA	17,53%	100%
2001	Total	72 835	NA	18 652	91 487
	%	79,61%	NA	20,39%	100%
2011	Total	100 970	NA	16 278	117 248
	%	86,12%	NA	13,88%	100%
2016	Total	130 655	556	18 769	149 980
	%	87,12%	0,37%	12,51%	100%

The Council's electricity supply area does not cover the total municipal area, and Table 4-9 and Table 4-10 are not comparable. However, it shows good coverage and progress in providing access to electricity. However, the current backlog is substantially higher than in 1996, which shows that the Council and Eskom could not keep pace with the impact of population and household growth.

Table 4-10: Free basic electricity services

	Customers receiving services from the municipality	Receiving free basic services	Has the Council a free basic services policy?	Mechanisms for providing free basic services
2017	125 238	8 835	Yes	Self-targeting
2018	126 552	10 622	Yes	Self-targeting

	Customers receiving services from the municipality	Receiving free basic services	Has the Council a free basic services policy?	Mechanisms for providing free basic services
2019	95 647	9 943	Yes	Self-targeting
2022	123 347	6 827	Yes	Self-targeting

4.4.4 Refuse removal

Solid waste management and refuse removal are essential for health and environmental considerations. The table below shows how access to refuse removal services was reported in the previous three censuses and the 2016 Community Survey of StatsSA.

Table 4-11: Access to refuse removal services 1996, 2001, 2011 and 2016

		Full	Intermediate	Basic	Below Basic	None	Total
1996	Total	47 523	1 326	3 181	7 563	2 738	62 330
	%	76,24%	2,13%	5,10%	12,13%	4,39%	100%
2001	Total	64 473	1 010	2 560	19 269	4 246	91 487
	%	70,47%	1,10%	2,80%	21,06%	4,56%	100%
2011	Total	93 388	2 136	3 079	13 725	4 920	117 248
	%	79,65%	1,82%	2,63%	11,71%	4,20%	100%
2016	Total	121 966	3 679	5 607	11 042	7 686	149 980
	%	81,32%	2,45%	3,74%	7,36%	5,12%	100%

Table 4-12: Free basic refuse removal services

	Customers receiving services from the municipality	Receiving free basic services	Has the Council a free basic services policy?	Mechanisms for providing Free basic services
2017	115 000	8 835	Yes	Self-targeting
2018	116 314	10 622	Yes	Self-targeting
2019	116 314	9 943	Yes	Self-targeting
2020	116 314	6 570	Yes	Self-targeting

4.4.5 Road network

Access to road services is not recorded in the censuses. It is challenging to get spatial data on roads and access roads and access roads data from a household perspective.

The following table shows the available road data for the municipality.

Table 4-13: Road services in the municipality in 2021

Road type	Paved road (km)	Unpaved road (km)	Total road length (km)
Major road (National Major roads of a country, including all freeways)	52.96	N/A	52.96
Main road (Provincial roads and major city through routes)	340.97	6.27	347.25
Secondary road (Secondary roads including slipways)	92.37	105.79	198.16
Suburban road (Formal suburban roads including slipways)	1 009.70	188.10	1 197.80
Informal roads (Alleys, Access ways, roads in informal settlements and squatter camps, farm and other small dirt roads)	21.91	891.76	913.67
Tracks (Non-routable roads: including 4x4 tracks)	N/A	N/A	121.77
Trails (Pedestrian walkways in cities and towns, walking and hiking trails)	N/A	N/A	3.85
Totals	1 528.29	1 191.92	2 845.84

4.4.6 Dwelling structures and households

Housing backlogs and the demand for housing will always remain an issue in development and social support strategies in South Africa. The next table shows the different dwelling types in the municipality under assessment.

Table 4-14: Dwelling type

	1996		2001		2011		2016	
	No	%	No	%	No	%	No	%
Traditional	752	1.21%	1 604	1.75%	399	0.34%	169	0.11%
House made of bricks	32 907	52.79%	48 511	53.03%	72 002	61.41%	95 001	63.34%
Flat	2 687	4.31%	2 312	2.53%	3 145	2.68%	2 999	2.00%
Multiple housing	2 160	3.47%	2 147	2.35%	4 928	4.20%	4 700	3.13%
Dwelling in backyard	5 803	9.31%	4 106	4.49%	4 858	4.14%	10 058	6.71%
Room/ granny flat	2 270	3.64%	1 820	1.99%	1 341	1.14%	1 354	0.90%
Informal	8 611	13.82%	14 518	15.87%	11 179	9.53%	15 418	10.28%
Informal dwelling in backyard	5 793	9.29%	9 821	10.73%	18 444	15.73%	19 088	12.73%
Other	1 347	2.16%	6 649	7.27%	952	0.81%	1 193	0.80%
Total	62 330	100.00%	91 487	100.00%	117 248	100.00%	149 980	100.00%

In terms of the 2020 dwelling frame data released by StatsSA the following picture emerges.

Table 4-15: Dwelling frame data 2020 per functional area

	Urban core	Urban centre	Urban general	Peri-Urban	Rural	Natural	Constrained	Total
Dwelling units	2 138	21 161	59 916	6 470	4 208	22 466	3 186	117 297
Businesses Unit	263	631	411	36	52	124	65	1 542
Special dwelling institution Unit	295	132	1 254	4	2	27	3	1 990
Service Units	36	92	128	7	44	82	9	365
Recreation Units	12	43	49	3	11	57	1	173
Other units	55	258	341	572	208	990	121	2 583
Vacant units	181	323	1 868	424	33	1 163	55	4 779
	2 980	22 640	63 967	7 516	4 558	24 909	3 440	128 729

In the final analysis and for demand quantification purposes, the following households were excluded from the housing demand:

- Backyard dwelling in informal and formal structures (29 844)
- Farm dwellings (7 386)

These exclusions amount to 37 230 households or 113 179 people. These people, however, still form part of the demand for social and community facilities. There is no clear policy on whether informal households in backyards must be regarded as part of the backlog. Whether to accept backyard settlement as a permanent form of housing can have far-reaching implications. If backyard settlement is excluded, it implies it becomes part of the backlog and will have capital expenditure implications. However, if backyard settlement is accepted as a permanent feature, it implies it will not require capital. However, it will increase operating demand (use of water, wastewater discharge and electricity consumption), which may exceed the design capacities of the areas where they settle, resulting in deterioration in service standards.

4.5 Asset renewals and renewal backlog

Asset renewals and renewal backlogs are calculated from asset registers and as reported in the Council's annual financial statements. Condition assessments are central to the process. The general rule is that asset renewals should more or less equal the annual depreciation on assets based on their Expected Useful Life (EUL). Renewal backlogs are a function of an asset's condition, and renewal backlogs occur where an asset's Remaining Useful Life (RUL) is less than 45% of its Current Replacement Cost (CRC).

The following condition grading determines the text of renewal backlogs.

Table 4-16: Generic condition grading³

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

Note: 'EUL' is Expected Useful Life & 'RUL' is Remaining Useful Life

The following applies the Council's asset base.

Table 4-17: The Council's asset base

Asset group	Current replacement cost (CRC)	Depreciated replacement cost (DRC)	DRC as % of CRC	Renewal backlog	Renewal target years	% of CRC	Average CRC per household	CRC per serviced household
	R'000	(R'000)						
Water	1 342 279	567 867	42.3%	36 159	10	14.4%	8 725	13 446
Sanitation	1 433 324	488 147	34.1%	156 849	10	15.3%	9 317	14 242
Electricity	2 836 011	825 964	29.1%	450 241	10	30.3%	24 265	38 268
Roads & Stormwater	3 732 900	2 091 465	56.0%	0	10	39.9%	28	45
Refuse removal	4 348	4 183	96.2%	0	10	0.0%	60 771	95 842
Infrastructure total	9 348 863	3 977 625	42.5%	643 249	0	100.0%	103 107	161 842
Total asset base	11 192 029	4 881 868	43.6%					
Infrastructure as % of total	83.5%	81.5%	0.0%					

Are several issues when interpreting the data. The following is important:

- Water, sanitation and electricity infrastructure is in poor condition, and substantial renewals and upgrades are required.
- Roads are in good condition with minor deterioration (< 5%). Minor maintenance is required. The CRC per serviced residential customer is high and may reflect high road standards in the municipality.
- Refuse removal, mainly reflecting landfill sites, are in very good condition, with only normal maintenance required.

³ The Department of Provincial and Local Government, *Guidelines for infrastructure asset management in local government 2006 – 2009*

- The average CRC per serviced household is R161 842 per household and is higher than the modelled average of R131 254 for fully serviced stands.

The fixed asset register data reported the cost or valuation of infrastructure at R9.4 billion and the total asset base at R11.1 billion. Infrastructure represents 84% of the total asset base.

4.6 Demand created through growth

In the process of determining the demand created by growth, four elements were addressed:

- Land demand as a result of growth expectations;
- Long-term capital requirements to meet the growing demand;
- Operating impact of capital expenditure and;

Consumption and use.

4.6.1 Land demand

Land demand is determined by norms and standards applied to various land uses. In this respect, a distinction between the demand for housing (residential demand) and the demand for other land uses, including business, industrial, open space, community, and social facilities. However, the land demand for the other uses is a function of thresholds to sustain them, and it was calculated on the total growth demand in the total municipal area. This is technically not 100% correct since the service function of these uses may exceed administrative boundaries. Nevertheless, it gives recognition that factors outside its jurisdiction may determine development demand in a municipality. In this assessment, the long-term demand was only calculated based on growth expectations within the municipal area. The extent of the work scope for this project does not allow for a full threshold demand analysis, and future demand was based on growth within the municipal boundaries.

4.6.2 Long-term capital expenditure related to growth

Long-term capital expenditure is a function of land demand and customer growth. The results show the incremental cost for bulk and reticulated infrastructure. The point of departure is assigning appropriate service levels to each user or customer category. This is essentially a policy matter. For assessment, the Council's current approach of providing higher than basic levels of service levels was adopted. The capital cost for each land use category was calculated per infrastructure service category.

4.6.3 The operating impact of capital expenditure

It is relatively easy to calculate capital demand. However, the critical aspects are the long-term operating impact of capital expenditure. Furthermore, an over-investment in capital investment that does not address affordability may lead to structural impediments where the Council will find it challenging to meet the operating obligations of customers that cannot pay for services. This is usually one of the main contributors to cash flow constraints in municipalities. Operating cost is based on a life-cycle approach considering maintenance and operating costs. All costs are presented as marginal costs.

4.6.4 Consumption and use

Since consumption and use norms and standards are used to calculate operating costs, the same values are used to calculate the demand for water, wastewater discharge, electricity consumption, roads required, solid waste volume, and tonnage. The results are also presented as annual increments to reflect the impact of growth.

4.7 Modelling outcomes and growth impact forecasts

The demand quantification is the outcome of a multivariable modelling process that integrates socio-economic attributes, service livery variables and growth expectations. The outcomes are presented as a probable service delivery scenario showing land demand, capital and operating expenditure required.

This section of the report deals with the population growth scenario, which is the basis of demand quantification. It describes the assumption upon which the quantification is based and provides outputs in a ten-year framework to support the completion of the Capital Expenditure Framework for the municipality. This section builds on the preceding Socio-economic Report that addresses the socio-economic profile of the municipality.

4.7.1 Population growth as the basis for modelling investment demand

As indicated earlier, the investment demand modelling is premised on population growth that translates into customer units. Therefore, the first step was a population growth forecast. The municipality is more than 70% urbanised, and the impact of the rural area is discounted through the impact service population that shows the demand for non-residential land uses. There are indications of stabilisation, if not a decline, in the rural population. The assumption is that the bulk of population growth will have to be accommodated within the urban areas of the Municipality.

The issues and challenges with reliable population and household figures were highlighted in the previous section on the socio-economic characteristics of the municipal area. Consistent with a conservative approach, low population growth was accepted, where the population would increase at an average rate of 1.84% per annum. The following projection was used for modelling purposes.

Table 4-18: The extent of population and households growth from 2023 to 2032

Year	Population increment	Residential customers	Other customers	Total; customer units
2023	8 799	3 904	119	4 023
2024	8 542	3 893	130	4 023
2025	8 239	3 816	124	3 940
2026	7 890	3 713	132	3 845
2027	7 495	3 582	120	3 702
2028	7 054	3 451	117	3 568
2029	6 567	3 312	108	3 420
2030	6 033	3 142	104	3 246
2031	5 454	2 970	105	3 075
2032	4 828	2 846	95	2 941
Total	70 902	34 626	1 154	35 780

The critical growth numbers are as follows:

Table 4-19: Population and household growth variables

	Service demand (total municipal area)	Housing demand (total urban areas)
Average household size	3.10	3.04
Base year population	460 710	338 936
Population growth rate	1.44%	1.92%
Population estimate at the end of the programme	531 329	409 837

	Service demand (total municipal area)	Housing demand (total urban areas)
Households in the base year	148 722	111 492

4.7.2 Scenario assessment

The scenario applied for assessment tried to emulate the Municipality's current policy and strategy choices as closely as possible. However, it is important to remember that this remains a modelling approach that crudely aims to replicate a very complicated system. Therefore, making some basic assumptions before the model was calibrated was necessary.

a. Assumptions and inputs on housing variables

As described above, the model uses the growth in population to determine housing demand and ancillary uses. However, several vital inputs need to be considered. They are:

- Residential typologies;
- The residential mix in terms of stand sizes and;
- Stand sizes are assigned to the different typologies.

Housing typologies for the CEF are configured around low, medium and high-density residential development, including different housing typologies. Stands and household sizes were linked to each of these typologies. Table 4-20 shows the input assumptions for housing typologies, stand sizes and household sizes.

Table 4-20: Assumptions on housing typologies, mix stand and household sizes

Residential types	Residential mix	Stand sizes	Household size
Single Residential: Low income	50.00%	350	4.00
Single Residential: Medium income	20.00%	600	3.44
Single Residential: High income	6.00%	850	3.00
Medium Density: Low income	10.00%	2 000	2.25
Medium Density: Medium income	5.00%	4 000	3.00
Medium Density: High income	3.00%	3 000	2.75
High Density: Low income	2.00%	2 000	3.25
High Density: Medium income	2.00%	4 000	3.00
High Density: High income	2.00%	3 000	2.50

The base distinction between income groups was derived from the 2011 census for the area. Backyard dwellers were excluded as part of the demand for capital expenditure in the equation, but they still have an operating cost impact because of their use and consumption of services. It was assumed that this would remain for the entire assessment period, although there are indications that household incomes have been decreasing.

b. Norms and standards for land use budgeting

The following land use norms and standards were used in the land use budgeting process.

Land use	Provision unit	Provision norm - persons/cars/children	Ruling stand size m2
Residential			
Single Res: Low Inc	units per net ha (net)	29	350
Single Res: Med Inc	units per net ha (net)	17	600
Single Res: High Inc	units per net ha (net)	12	850

Land use	Provision unit	Provision norm - persons/cars/children	Ruling stand size m2
Medium Dens: Low Inc	units per net ha (net)	20	2 000
Medium Dens: Med Inc	units per net ha (net)	25	4 000
Medium Dens: High Inc	units per net ha (net)	30	3 000
High Dens: Low Inc	units per net ha (net)	60	2 000
High Dens: Med Inc	units per net ha (net)	60	4 000
High Dens: High Inc	units per net ha (net)	60	3 000
Backyard dwellings	units per household	0	0
Business			
3rd Order commercial	m2 per capita	2.00	2 000
2nd Order Commercial	m2 per capita	3.00	5 000
1st Order Commercial	m2 per capita	6.00	25 000
Market/trading area	m2 per capita	0.04	5 000
Garages & filling stations	per 2500 cars	1.00	2 000
Industrial & commercial			
Light industrial	ha per 1000 people	1.00	3 000
Heavy industrial	ha per 2000 people	1.00	10 000
Storage and warehouses	ha per 2000 people	1.00	10 000
Public spaces: recreation			
Parks: public	ha per 1000 people	0.05	5 000
Parks: private	ha per 1000 people	0.50	10 000
Sports fields	per 1000 housing units	3.50	10 000
Stadiums	per 125000 people	1.00	50 000
Community facilities: municipal			
Municipal office	per 75000 people	1.00	3 000
Community hall	per 25000 people	1.00	3 000
Library	per 50000 people	1.00	1 500
Primary health clinic	per 50000 people	1.00	3 000
Fire station & Ambulance	per 75000 people	1.00	7 500
Solid waste/Mini dump/depot	per 75000 people	1.00	3 000
Cemeteries	ha per 5500 people	1.00	20 000
Crematorium	m2 per capita	0.20	3 000
Service utilities	ha per 10000 people	1.00	7 500
Taxi ranks	m2 per capita	0.10	3 000
Community facilities: other			
Post office	per 20000 people	1.00	1 500
Lower Court	per 100000 people	1.00	2 000

Land use	Provision unit	Provision norm - persons/cars/children	Ruling stand size m2
Post collection point	per 3000 housing units	1.00	200
Police station	per 80000 people	1.00	5 000
Hospital	per 300000 people	1.00	50 000
Community health centre	per 100000 people	1.00	2 000
Hospice	per 50000 people	1.00	2 000
Old age home	per 50000 people	1.00	10 000
Children's homes	per 200000 people	1.00	5 000
Thusong centre	per 70000 people	1.00	10 000
Place of worship	per 1000 people	1.00	2 000
Crèche	per 2800 people	1.00	2 000
Grade R / Nursery	per 5000 people	1.00	3 000
Primary school	per 7000 people	1.00	32 000
Secondary school	per 12500 people	1.00	45 000
After school centre	per 5000 people	1.00	2 000
Tertiary/Skills training centre	per 50000 people	1.00	50 000

The norms and standards were derived from different sources. The main sources were the cadastre from the office of the Surveyor-General, the CSIR norms and standards for social and community facilities and then also calculated from the current land cover in the Municipality. The approach was calibrating the model on local data as far as possible.

c. Service levels

Service levels relate to the technology used to supply a customer with a service. It should not be confused with a service standard that represents the qualitative aspects of service delivery.

The following describes the levels of services (LOS) available for the modelling process.

Table 4-21: Levels of service options for water

Level of services	Description	Policy service category
LOS00	No formal service	Below basic
LOS01	Waterpoint more than 200m distance	Below basic
LOS02	Communal standpipe less than 200m distance	Basic
LOS03	Yard tap connection (single tap) and or limited supply with a dry on-site system	Intermediate
LOS04	Yard tap connection (single tap) and or limited supply linked to waterborne sanitation	Intermediate
LOS05	House/building connection unlimited metered supply	Full
LOS06	Supply volume. is limited to 100mm connection, peak flow limited, and on-site storage required	Commercial
LOS07	All requirements met up to 150mm pipe, 150mm connection	Commercial

Table 4-22: Levels of service options for sanitation

Level of services	Description	Policy service category
LOS00	No formal service	Below basic
LOS01	Bucket system	Below basic
LOS02	Unventilated pit latrines and soakaways	Below basic
LOS03	Ventilated improved pit (VIP)	Basic
LOS04	Dry composting toilet	Basic
LOS05	Communal chemical toilet	Basic
LOS06	Low flow (small bore) system with toilet structure	Intermediate
LOS07	Septic or conservancy tank with toilet structure	Intermediate
LOS08	Waterborne sewerage to each stand 110mm connection (no toilet structure)	Full
LOS09	Waterborne sewerage to each stand 110mm connection, with toilet structure	Full
LOS10	Waterborne sewer available, max connection size 150 mm or larger	Commercial
LOS11	Waterborne sewerage, discharge load is above normal limits.	Commercial

Table 4-23: Levels of service options for electricity

Level of services	Description	Policy service category
LOS00	No electricity service	Below basic
LOS01	None grid electricity service	Intermediate/full
LOS02	Grid-connected and metered - Single phase 230V up to 20A or 4.6 kVA	Intermediate
LOS03	Grid-connected and metered - Single phase 230V up to 60A or 13.8kVA	Full
LOS04	Grid-connected and metered – Three-phase / Multiphase 230/400V up to 150A or 100kVA	Full/Commercial
LOS05	Grid-connected and metered - Bulk higher than 230/400V - not exceeding 11kV (at least 25 kVA)	Commercial
LOS06	Grid-connected and metered - Bulk - exceeding 11kV (at least 100 kVA)	Commercial

Table 4-24: Levels of service options for roads and stormwater

Level of services	Description	Policy service category
LOS00	No service	Below basic
LOS01	Tracks (Graded)	Basic
LOS02	Gravel within 500m	Basic
LOS03	Gravel	Intermediate
LOS04	Paved 4.5m	Full
LOS05	Paved 5.5m	Full
LOS06	Paved 6.5	Full
LOS07	Paved heavy capacity of 7.5m	Commercial

Table 4-25: Levels of service options for refuse removal services

Level of services	Description	Policy service category
LOS00	None	Below basic
LOS01	Communal waste collection point	Basic
LOS02	Weekly kerbside waste removal	Full
LOS03	Bi-weekly kerbside waste removal	Full/commercial
LOS04	Bi-weekly waste removal from site 1	Commercial
LOS05	Daily waste removal from site 1	Commercial
LOS06	Bi-weekly waste removal from site 2	Commercial
LOS07	Daily waste removal from site 2	Commercial

The following levels of services were assigned to the land uses in the development cost model based on the available service level options. Changes in the levels of service do have significant impacts on the demand for capital and hence the operating position of the Council and its sustainability. The impact of different service level choices and resulting scenarios were not tested as part of this report.

Table 4-26: Levels of service assigned per land use

	Water	Sanitation	Electricity	Roads & stormwater	Refuse removal
Residential					
Single Res: Low Inc	Yard tap connection (single tap) and or limited supply linked to waterborne sanitation	Waterborne sewerage to each stand 110mm connection, with toilet structure	Grid-connected and metered - Single phase 230V up to 20A or 4.6 kVA	Gravel	Weekly kerbside waste removal
Single Res: Med Inc	Yard tap connection (single tap) and or limited supply linked to waterborne sanitation	Waterborne sewerage to each stand 110mm connection, with toilet structure	Grid-connected and metered - Single phase 230V up to 60A or 13.8kVA	Paved 4.5m	Weekly kerbside waste removal
Single Res: High Inc	House/building connection unlimited metered supply	Waterborne sewerage to each stand 110mm connection (no toilet structure)	Grid-connected and metered - Single phase 230V up to 60A or 13.8kVA	Paved 5.5m	Weekly kerbside waste removal
Medium Dens: Low Inc	Yard tap connection (single tap) and or limited supply linked to waterborne sanitation	Waterborne sewerage to each stand 110mm connection, with toilet structure	Grid-connected and metered - Single phase 230V up to 20A or 4.6 kVA	Paved 4.5m	Weekly kerbside waste removal
Medium Dens: Med Inc	House/building connection unlimited metered supply	Waterborne sewerage to each stand 110mm connection, with toilet structure	Grid-connected and metered - Single phase 230V up to 60A or 13.8kVA	Paved 4.5m	Weekly kerbside waste removal
Medium Dens: High Inc	House/building connection unlimited metered supply	Waterborne sewerage to each stand 110mm connection (no toilet structure)	Grid-connected and metered - Single phase 230V up to 60A or 13.8kVA	Paved 5.5m	Weekly kerbside waste removal
High Dens: Low Inc	House/building connection unlimited metered supply	Waterborne sewerage to each stand 110mm connection (no toilet structure)	Grid-connected and metered - Single phase 230V up to 20A or 4.6 kVA	Paved 4.5m	Weekly kerbside waste removal
High Dens: Med Inc	House/building connection unlimited metered supply	Waterborne sewerage to each stand 110mm connection (no toilet structure)	Grid-connected and metered - Single phase 230V up to 60A or 13.8kVA	Paved 5.5m	Weekly kerbside waste removal
High Dens: High Inc	House/building connection unlimited metered supply	Waterborne sewerage to each stand 110mm connection (no toilet structure)	Grid-connected and metered - Single phase 230V up to 60A or 13.8kVA	Paved 5.5m	Weekly kerbside waste removal

	Water	Sanitation	Electricity	Roads & stormwater	Refuse removal
Backyard dwellings	House/building connection unlimited metered supply	No formal service	No electricity service	No service	Weekly kerbside waste removal
Business					
3rd Order commercial	House/building connection unlimited metered supply	Waterborne sewerage to each stand 110mm connection (no toilet structure)	Grid-connected and metered - Three phase / Multi phase 230/400V up to 150A or 100kVA	Paved 6.5	Daily waste removal from site 1
2nd Order Commercial	House/building connection unlimited metered supply	Waterborne sewer available, max connection size 150 mm or larger	Grid-connected and metered - Bulk higher than 230/400V - not exceeding 11kV (at least 25 kVA)	Paved 6.5	Daily waste removal from site 1
1st Order Commercial	All requirements met up to 150mm pipe, 150mm connection	Waterborne sewer available, max connection size 150 mm or larger	Grid-connected and metered - Bulk - exceeding 11kV (at least 100 kVA)	Paved heavy capacity 7.5m	Daily waste removal from site 1
Market/trading area	House/building connection unlimited metered supply	Waterborne sewerage to each stand 110mm connection (no toilet structure)	Grid-connected and metered - Three phase / Multi phase 230/400V up to 150A or 100kVA	Paved 6.5	Daily waste removal from site 1
Garages & filling stations	House/building connection unlimited metered supply	Waterborne sewer available, max connection size 150 mm or larger	Grid-connected and metered - Single phase 230V up to 60A or 13.8kVA	Paved 6.5	Weekly kerbside waste removal
Industrial & commercial					
Light industrial	House/building connection unlimited metered supply	Waterborne sewer available, max connection size 150 mm or larger	Grid-connected and metered - Bulk higher than 230/400V - not exceeding 11kV (at least 25 kVA)	Paved 6.5	Daily waste removal from site 1
Heavy industrial	House/building connection unlimited metered supply	Waterborne sewerage, discharge load is above normal limits.	Grid-connected and metered - Bulk - exceeding 11kV (at least 100 kVA)	Paved heavy capacity 7.5m	Daily waste removal from site 1
Storage and warehouses	House/building connection unlimited metered supply	Waterborne sewerage to each stand 110mm connection (no toilet structure)	Grid-connected and metered - Bulk higher than 230/400V - not exceeding 11kV (at least 25 kVA)	Paved 6.5	Bi-weekly waste removal from site 1
Public spaces: recreation					
Parks: public	House/building connection unlimited metered supply	No formal service	Grid-connected and metered - Three phase / Multi phase 230/400V up to 150A or 100kVA	Paved 5.5m	Weekly kerbside waste removal
Parks: private	House/building connection unlimited metered supply	Waterborne sewerage to each stand 110mm connection (no toilet structure)	Grid-connected and metered - Three phase / Multi phase 230/400V up to 150A or 100kVA	Paved 5.5m	Weekly kerbside waste removal
Sports fields	House/building connection unlimited metered supply	Waterborne sewerage to each stand 110mm connection (no toilet structure)	Grid-connected and metered - Three phase / Multi phase 230/400V up to 150A or 100kVA	Paved 5.5m	Weekly kerbside waste removal
Stadiums	All requirements met up to 150mm pipe, 150mm connection	Waterborne sewer available, max connection size 150 mm or larger	Grid-connected and metered - Three phase / Multi phase 230/400V up to 150A or 100kVA	Paved 6.5	Weekly kerbside waste removal
Community facilities: municipal					
Municipal office	House/building connection unlimited metered supply	Waterborne sewer available, max connection size 150 mm or larger	Grid-connected and metered - Bulk higher than 230/400V - not exceeding 11kV (at least 25 kVA)	Paved 6.5	Weekly kerbside waste removal
Community hall	House/building connection unlimited metered supply	Waterborne sewerage to each stand 110mm connection (no toilet structure)	Grid-connected and metered - Three phase / Multi phase 230/400V up to 150A or 100kVA	Paved 6.5	Weekly kerbside waste removal
Library	House/building connection unlimited metered supply	Waterborne sewerage to each stand 110mm connection (no toilet structure)	Grid-connected and metered - Three phase / Multi phase 230/400V up to 150A or 100kVA	Paved 6.5	Weekly kerbside waste removal

	Water	Sanitation	Electricity	Roads & stormwater	Refuse removal
Primary health clinic	House/building connection unlimited metered supply	Waterborne sewerage to each stand 110mm connection (no toilet structure)	Grid-connected and metered - Three phase / Multi phase 230/400V up to 150A or 100kVA	Paved 6.5	Weekly kerbside waste removal
Fire station & Ambulance	Supply volume. is limited to 100mm connection, peak flow limited and on site storage required	Waterborne sewerage, discharge load is above normal limits.	Grid-connected and metered - Bulk higher than 230/400V - not exceeding 11kV (at least 25 kVA)	Paved 6.5	Weekly kerbside waste removal
Solid waste/Mini dump/depot	House/building connection unlimited metered supply	Waterborne sewerage to each stand 110mm connection (no toilet structure)	Grid-connected and metered - Three phase / Multi phase 230/400V up to 150A or 100kVA	Paved 6.5	Weekly kerbside waste removal
Cemeteries	House/building connection unlimited metered supply	Waterborne sewerage to each stand 110mm connection (no toilet structure)	Grid-connected and metered - Three phase / Multi phase 230/400V up to 150A or 100kVA	Paved 6.5	Weekly kerbside waste removal
Crematorium	House/building connection unlimited metered supply	Waterborne sewer available, max connection size 150 mm or larger	Grid-connected and metered - Bulk - exceeding 11kV (at least 100 kVA)	Paved 6.5	Weekly kerbside waste removal
Service utilities	House/building connection unlimited metered supply	Waterborne sewerage to each stand 110mm connection (no toilet structure)	Grid-connected and metered - Three phase / Multi phase 230/400V up to 150A or 100kVA	Paved 6.5	Daily waste removal from site 1
Taxi ranks	House/building connection unlimited metered supply	Waterborne sewerage to each stand 110mm connection (no toilet structure)	Grid-connected and metered - Three phase / Multi phase 230/400V up to 150A or 100kVA	Paved 6.5	Daily waste removal from site 1
Community facilities: other					
Post office	House/building connection unlimited metered supply	Waterborne sewerage to each stand 110mm connection (no toilet structure)	Grid-connected and metered - Three phase / Multi phase 230/400V up to 150A or 100kVA	Paved 6.5	Weekly kerbside waste removal
Lower Court	House/building connection unlimited metered supply	Waterborne sewerage to each stand 110mm connection (no toilet structure)	Grid-connected and metered - Three phase / Multi phase 230/400V up to 150A or 100kVA	Paved 6.5	Weekly kerbside waste removal
Post collection point	House/building connection unlimited metered supply	Waterborne sewerage to each stand 110mm connection (no toilet structure)	Grid-connected and metered - Single phase 230V up to 60A or 13.8kVA	Paved 6.5	Weekly kerbside waste removal
Police station	House/building connection unlimited metered supply	Waterborne sewerage to each stand 110mm connection (no toilet structure)	Grid-connected and metered - Three phase / Multi phase 230/400V up to 150A or 100kVA	Paved 6.5	Weekly kerbside waste removal
Hospital	Supply volume. is limited to 100mm connection, peak flow limited and on site storage required	Waterborne sewerage, discharge load is above normal limits.	Grid-connected and metered - Bulk - exceeding 11kV (at least 100 kVA)	Paved 6.5	Daily waste removal from site 1
Community health centre	House/building connection unlimited metered supply	Waterborne sewerage to each stand 110mm connection (no toilet structure)	Grid-connected and metered - Three phase / Multi phase 230/400V up to 150A or 100kVA	Paved 6.5	Bi-weekly waste removal from site 1
Hospice	House/building connection unlimited metered supply	Waterborne sewer available, max connection size 150 mm or larger	Grid-connected and metered - Three phase / Multi phase 230/400V up to 150A or 100kVA	Paved 6.5	Bi-weekly waste removal from site 1
Old age home	All requirements met up to 150mm pipe, 150mm connection	Waterborne sewer available, max connection size 150 mm or larger	Grid-connected and metered - Bulk higher than 230/400V - not exceeding 11kV (at least 25 kVA)	Paved 6.5	Weekly kerbside waste removal
Children's homes	All requirements met up to 150mm pipe, 150mm connection	Waterborne sewer available, max connection size 150 mm or larger	Grid-connected and metered - Bulk higher than 230/400V - not exceeding 11kV (at least 25 kVA)	Paved 6.5	Weekly kerbside waste removal
Thusong centre	House/building connection unlimited metered supply	Waterborne sewerage to each stand 110mm	Grid-connected and metered - Three phase /	Paved 6.5	Weekly kerbside waste removal

	Water	Sanitation	Electricity	Roads & stormwater	Refuse removal
		connection (no toilet structure)	Multi phase 230/400V up to 150A or 100kVA		
Place of worship	House/building connection unlimited metered supply	Waterborne sewerage to each stand 110mm connection (no toilet structure)	Grid-connected and metered - Three phase / Multi phase 230/400V up to 150A or 100kVA	Paved 6.5	Weekly kerbside waste removal
Crèche	House/building connection unlimited metered supply	Waterborne sewerage to each stand 110mm connection (no toilet structure)	Grid-connected and metered - Three phase / Multi phase 230/400V up to 150A or 100kVA	Paved 6.5	Weekly kerbside waste removal
Grade R / Nursery	House/building connection unlimited metered supply	Waterborne sewerage to each stand 110mm connection (no toilet structure)	Grid-connected and metered - Three phase / Multi phase 230/400V up to 150A or 100kVA	Paved 6.5	Weekly kerbside waste removal
Primary school	House/building connection unlimited metered supply	Waterborne sewer available, max connection size 150 mm or larger	Grid-connected and metered - Bulk higher than 230/400V - not exceeding 11kV (at least 25 kVA)	Paved 6.5	Weekly kerbside waste removal
Secondary school	House/building connection unlimited metered supply	Waterborne sewer available, max connection size 150 mm or larger	Grid-connected and metered - Bulk higher than 230/400V - not exceeding 11kV (at least 25 kVA)	Paved 6.5	Weekly kerbside waste removal
After school centre	House/building connection unlimited metered supply	Waterborne sewerage to each stand 110mm connection (no toilet structure)	Grid-connected and metered - Three phase / Multi phase 230/400V up to 150A or 100kVA	Paved 6.5	Weekly kerbside waste removal
Tertiary/Skills training centre	All requirements met up to 150mm pipe, 150mm connection	Waterborne sewer available, max connection size 150 mm or larger	Grid-connected and metered - Bulk - exceeding 11kV (at least 100 kVA)	Paved 6.5	Bi-weekly waste removal from site 1

4.7.3 The modelling outcomes

This section documents the results of the modelling process. The outcomes are presented as a high-level summary. It is important to note that the tables show incremental quantities, which include all service elements and components. It is impossible to model the impact of major interventions such as building a new wastewater treatment work or big investments to reconfigure solid waste management. Those aspects must be discounted in the project prioritisation process.

Although the results link the demand to a specific year, it is still important to take note of budgeting processes and the extent of lead times before project implementation can commence. The figures indicate annual demands, and the actual demands will be reflected in the project prioritisation process as part of the project outputs.

a. Land use demand

Table 4-27 shows the summary of land use demand resulting from the growth forecasts.

Table 4-27: Land use demand for the programme period 2021 to 2030

Land uses	No of units	% of total land	No of stand required	Area included in project (ha)
Totals	34 638	100.0%	25 824	2 908.2
Residential	34 638	48.2%	24 879	1 400.3
Single Res: Low Inc	14 628	17.6%	14 628	512.0
Single Res: Med Inc	6 804	14.0%	6 804	408.2
Single Res: High Inc	2 341	6.8%	2 341	198.9

Land uses	No of units	% of total land	No of stand required	Area included in project (ha)
Medium Dens: Low Inc	5 201	4.5%	650	130.0
Medium Dens: Med Inc	1 950	2.2%	163	65.0
Medium Dens: High Inc	1 277	1.8%	170	51.1
High Dens: Low Inc	720	0.3%	45	9.0
High Dens: Med Inc	780	0.4%	26	10.4
High Dens: High Inc	936	0.5%	52	15.6
Backyard dwellings	0	0.0%	0	0.0
Business		2.7%	139	77.2
3rd Order commercial		0.5%	70	14.0
2nd Order Commercial		0.7%	42	21.0
1st Order Commercial		1.4%	16	40.0
Market/trading area		0.0%	0	0.0
Garages & filling stations		0.1%	11	2.2
Industrial & commercial		4.8%	305	140.5
Light industrial		2.4%	235	70.5
Heavy industrial		1.2%	35	35.0
Storage and warehouses		1.2%	35	35.0
Public spaces: recreation		16.2%	478	472.5
Parks: public		0.2%	11	5.5
Parks: private		2.0%	58	58.0
Sports fields		14.1%	409	409.0
Stadiums		0.0%	0	0.0
Community facilities: municipal		1.7%	42	48.5
Municipal office		0.0%	1	0.3
Community hall		0.0%	4	1.2
Library		0.0%	2	0.3
Primary health clinic		0.0%	2	0.6
Fire station & Ambulance		0.0%	1	0.8
Solid waste/Mini dump/depot		0.0%	1	0.3
Cemeteries		1.4%	21	42.0
Crematorium		0.1%	7	2.1
Service utilities		0.0%	0	0.0
Taxi ranks		0.0%	3	0.9
Community facilities: other		5.2%	253	150.9
Post office		0.0%	5	0.8

Land uses	No of units	% of total land	No of stand required	Area included in project (ha)
Lower Court		0.0%	1	0.2
Post collection point		0.0%	0	0.0
Police station		0.0%	1	0.5
Hospital		0.0%	0	0.0
Community health centre		0.1%	11	2.2
Hospice		0.0%	2	0.4
Old age home		0.1%	2	2.0
Children's homes		0.0%	0	0.0
Thusong centre		0.0%	0	0.0
Place of worship		0.8%	117	23.4
Crèche		0.3%	41	8.2
Grade R / Nursery		0.2%	23	6.9
Primary school		1.8%	16	51.2
Secondary school		1.4%	9	40.5
After school centre		0.2%	23	4.6
Tertiary/Skills training centre		0.3%	2	10.0
Roads totals		21.3%	0	618.4

b. Summary of general elements

Table 4-28 and Table 4-29 show the context and main elements that define the expected capital and operating expenditure level. Table 4-28 (annual increment) and Table 4-29 (cumulative totals) show the results.

Table 4-28: Summary of totals per annum (annual increments)

	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Service population increments	8 799	8 542	8 239	7 890	7 495	7 054	6 567	6 033	5 454	4 828
Housing population increments	13 412	13 155	12 852	12 503	12 108	11 666	11 179	10 646	10 067	9 441
Total area (ha)	302	297	290	284	272	263	247	240	228	212
Average stand size m2	1 019	1 016	1 016	1 019	1 011	1 012	995	1 013	1 016	1 008
Population density (p/ha):	29.1	28.7	28.4	27.8	27.5	26.8	26.6	25.2	23.9	22.8
Household density (hh/ha):	12.9	13.1	13.1	13.1	13.2	13.1	13.4	13.1	13.0	13.4
Residential Cus	3 904	3 893	3 816	3 713	3 582	3 451	3 312	3 142	2 970	2 846
Other CUs:	119	130	124	132	120	117	108	104	105	95
Total customer units	4 023	4 023	3 940	3 845	3 702	3 568	3 420	3 246	3 075	2 941
Total no of stands	2 965	2 926	2 857	2 791	2 693	2 597	2 485	2 367	2 245	2 104
Roads area (ha)	58.5	57.5	56.2	54.9	51.9	50.0	47.9	46.0	43.5	40.4
Roads as % of total area	19.3%	19.4%	19.4%	19.3%	19.1%	19.0%	19.4%	19.2%	19.1%	19.1%

Table 4-29: Summary of totals per annum (Cumulative)

	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Service population increments	8 799	17 341	25 580	33 470	40 965	48 019	54 586	60 619	66 073	70 902
Housing population increments	13 412	26 566	39 418	51 921	64 028	75 695	86 874	97 520	107 587	117 028
Total area (ha)	302	599	890	1 174	1 446	1 709	1 956	2 196	2 424	2 636
Average stand size m2	1 019	2 035	3 051	4 069	5 080	6 092	7 087	8 100	9 117	10 124
Population density (p/ha):	29.1	28.9	28.8	28.5	28.3	28.1	27.9	27.6	27.3	26.9
Household density (hh/ha):	12.9	13.0	13.1	13.1	13.1	13.1	13.1	13.1	13.1	13.1
Residential Cus	3 904	7 796	11 612	15 325	18 907	22 357	25 669	28 811	31 780	34 626
Other CUs:	119	249	373	505	625	742	850	954	1 059	1 154
Total customer units	4 023	8 045	11 985	15 830	19 532	23 099	26 519	29 765	32 839	35 780
Total no of stands	2 965	5 891	8 748	11 539	14 232	16 829	19 314	21 681	23 926	26 030
Roads area (ha)	58.5	116.0	172.2	227.1	279.0	329.0	377.0	422.9	466.4	506.9
Roads as % of total area	19.3%	19.4%	19.4%	19.3%	19.3%	19.3%	19.3%	19.3%	19.2%	19.2%

c. Summary of capital expenditure per service

Table 4-30 and Table 4-31 show the required capital expenditure incrementally per annum (refer to Table 4-16) and cumulative per annum (refer to Table 4-17) to accommodate the forecasted demand.

Table 4-30: Incremental capital expenditure: All services (R'000)

Year	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Growth investments	364 053	366 189	358 101	352 442	337 567	324 462	310 711	295 480	281 397	268 334
Access backlogs	130 553	130 553	130 553	130 553	130 553	130 553	130 553	130 553	130 553	130 553
Renewals	195 195	204 251	213 340	222 216	230 983	239 367	247 409	255 126	262 459	269 465
Renewal backlog	64 325	64 325	64 325	64 325	64 325	64 325	64 325	64 325	64 325	64 325
Total (R'000)	754 126	765 318	766 319	769 536	763 429	758 707	752 999	745 484	738 734	732 677
Water										
Growth investments	49 316	49 695	48 750	48 106	45 806	44 274	42 121	40 189	38 375	36 789
Access backlogs	12 094	12 094	12 094	12 094	12 094	12 094	12 094	12 094	12 094	12 094
Renewals	17 864	18 521	19 182	19 831	20 471	21 081	21 670	22 231	22 766	23 276
Renewal backlog	3 616	3 616	3 616	3 616	3 616	3 616	3 616	3 616	3 616	3 616
Total	82 890	83 926	83 643	83 647	81 987	81 065	79 501	78 130	76 850	75 775
Sanitation										
Growth investments	129 516	128 179	125 378	122 470	117 776	114 039	108 862	103 726	98 162	92 729
Access backlogs	40 034	40 034	40 034	40 034	40 034	40 034	40 034	40 034	40 034	40 034
Renewals	50 676	55 255	59 787	64 220	68 550	72 714	76 746	80 595	84 262	87 733
Renewal backlog	15 685	15 685	15 685	15 685	15 685	15 685	15 685	15 685	15 685	15 685
Total	235 912	239 154	240 884	242 410	242 045	242 473	241 327	240 041	238 144	236 181
Electricity										

Year	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Growth investments	96 490	97 937	95 681	94 264	90 489	86 549	82 803	78 970	75 191	71 857
Access backlogs	22 816	22 816	22 816	22 816	22 816	22 816	22 816	22 816	22 816	22 816
Renewals	57 932	59 903	61 904	63 858	65 784	67 632	69 400	71 092	72 705	74 241
Renewal backlog	45 024	45 024	45 024	45 024	45 024	45 024	45 024	45 024	45 024	45 024
Total	222 262	225 680	225 425	225 962	224 112	222 021	220 043	217 902	215 735	213 937
Roads & Stormwater										
Growth investments	83 748	85 046	83 332	81 661	78 314	75 262	72 319	68 405	64 944	62 968
Access backlogs	55 208	55 208	55 208	55 208	55 208	55 208	55 208	55 208	55 208	55 208
Renewals	68 449	69 985	71 544	73 072	74 569	76 005	77 386	78 712	79 966	81 157
Renewal backlog	0	0	0	0	0	0	0	0	0	0
Total	207 405	210 239	210 084	209 942	208 092	206 476	204 913	202 325	200 118	199 334
Refuse removal										
Growth investments	4 983	5 332	4 960	5 940	5 184	4 338	4 606	4 189	4 725	3 991
Access backlogs	401	401	401	401	401	401	401	401	401	401
Renewals	274	587	923	1 235	1 608	1 934	2 207	2 497	2 761	3 058
Renewal backlog	0	0	0	0	0	0	0	0	0	0
Total	5 658	6 319	6 283	7 575	7 193	6 673	7 214	7 087	7 887	7 449

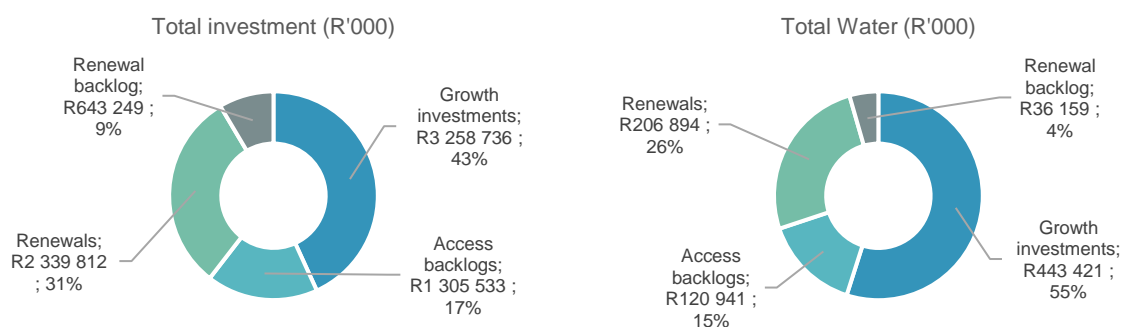
Table 4-31: Cumulative capital expenditure: All services (R'000) (Cumulative)

Year	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Growth investments	364 053	730 242	1 088 343	1 440 785	1 778 352	2 102 814	2 413 525	2 709 005	2 990 402	3 258 736
Access backlogs	130 553	261 107	391 660	522 213	652 766	783 320	913 873	1 044 426	1 174 980	1 305 533
Renewals	195 195	399 446	612 786	835 002	1 065 985	1 305 352	1 552 762	1 807 888	2 070 347	2 339 812
Renewal backlog	64 325	128 650	192 975	257 299	321 624	385 949	450 274	514 599	578 924	643 249
Total (R'000)	754 126	1 519 445	2 285 763	3 055 300	3 818 728	4 577 436	5 330 434	6 075 918	6 814 653	7 547 330
Water										
Growth investments	49 316	99 011	147 761	195 868	241 673	285 948	328 068	368 257	406 632	443 421
Access backlogs	12 094	24 188	36 282	48 376	60 471	72 565	84 659	96 753	108 847	120 941
Renewals	17 864	36 385	55 568	75 399	95 870	116 951	138 621	160 852	183 617	206 894
Renewal backlog	3 616	7 232	10 848	14 464	18 079	21 695	25 311	28 927	32 543	36 159
Total	82 890	166 816	250 459	334 106	416 093	497 158	576 659	654 789	731 639	807 415
Sanitation										
Growth investments	129 516	257 695	383 073	505 543	623 319	737 358	846 220	949 946	1 048 108	1 140 838
Access backlogs	40 034	80 069	120 103	160 138	200 172	240 206	280 241	320 275	360 309	400 344
Renewals	50 676	105 932	165 719	229 939	298 489	371 204	447 950	528 545	612 807	700 540
Renewal backlog	15 685	31 370	47 055	62 739	78 424	94 109	109 794	125 479	141 164	156 849

Year	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Total	235 912	475 065	715 950	958 360	1 200 404	1 442 877	1 684 204	1 924 245	2 162 389	2 398 570
Electricity										
Growth investments	96 490	194 427	290 108	384 373	474 861	561 410	644 214	723 184	798 375	870 232
Access backlogs	22 816	45 631	68 447	91 263	114 078	136 894	159 710	182 525	205 341	228 157
Renewals	57 932	117 835	179 739	243 597	309 381	377 013	446 413	517 505	590 209	664 450
Renewal backlog	45 024	90 048	135 072	180 096	225 121	270 145	315 169	360 193	405 217	450 241
Total	222 262	447 942	673 367	899 329	1 123 441	1 345 462	1 565 506	1 783 407	1 999 142	2 213 080
Roads & Stormwater										
Growth investments	83 748	168 794	252 125	333 787	412 101	487 363	559 681	628 086	693 030	755 999
Access backlogs	55 208	110 417	165 625	220 833	276 042	331 250	386 458	441 667	496 875	552 083
Renewals	68 449	138 434	209 978	283 050	357 619	433 625	511 010	589 722	669 688	750 845
Renewal backlog	0	0	0	0	0	0	0	0	0	0
Total	207 405	417 644	627 728	837 670	1 045 762	1 252 237	1 457 150	1 659 475	1 859 593	2 058 927
Refuse removal										
Growth investments	4 983	10 315	15 274	21 214	26 398	30 736	35 342	39 531	44 257	48 248
Access backlogs	401	801	1 202	1 603	2 004	2 404	2 805	3 206	3 607	4 007
Renewals	274	861	1 783	3 018	4 626	6 560	8 768	11 265	14 026	17 084
Renewal backlog	0	0	0	0	0	0	0	0	0	0
Total	5 658	11 977	18 260	25 835	33 028	39 701	46 915	54 002	61 889	69 339

The figures below show the contribution or demand of each expenditure component to total expenditure.

Figure 4-2: Contribution of each investment demand component to each of the infrastructure asset groups





d. Summary of operating expenditure

One key element often overlooked in capital investment planning is the operating consequences of capital investment. The next two tables show the forecasted operating and maintenance cost associated with the projected capital expenditure. It is an incremental cost and does not reflect the revenue side and cost recovery strategies the Municipality may apply.

Figure 4-3: Incremental operating & maintenance expenditure: All services per annum (R'000)

Year	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Growth investments	19 439	19 681	19 236	18 966	18 173	17 412	16 672	15 866	15 130	14 449
Access backlogs	6 253	6 253	6 253	6 253	6 253	6 253	6 253	6 253	6 253	6 253
Total (R'000)	25 692	25 934	25 489	25 219	24 426	23 665	22 925	22 119	21 383	20 702
Water										
Growth investments	631	637	625	618	587	568	540	515	493	472
Access backlogs	150	150	150	150	150	150	150	150	150	150
Total	782	787	775	768	738	718	690	666	643	623
Sanitation										
Growth investments	3 813	3 788	3 705	3 624	3 483	3 369	3 216	3 063	2 904	2 748
Access backlogs	1 113	1 113	1 113	1 113	1 113	1 113	1 113	1 113	1 113	1 113
Total	4 926	4 901	4 819	4 738	4 596	4 483	4 329	4 176	4 018	3 862
Electricity										

Year	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Growth investments	10 474	10 661	10 413	10 282	9 862	9 422	9 007	8 594	8 199	7 828
Access backlogs	2 173	2 173	2 173	2 173	2 173	2 173	2 173	2 173	2 173	2 173
Total	12 647	12 834	12 586	12 455	12 035	11 595	11 180	10 767	10 372	10 001
Roads & Stormwater										
Growth investments	4 331	4 392	4 304	4 216	4 044	3 888	3 735	3 534	3 354	3 248
Access backlogs	2 801	2 801	2 801	2 801	2 801	2 801	2 801	2 801	2 801	2 801
Total	7 132	7 193	7 105	7 017	6 845	6 689	6 536	6 335	6 156	6 050
Refuse removal										
Growth investments	189	203	188	226	197	165	175	159	180	152
Access backlogs	15	15	15	15	15	15	15	15	15	15
Total	205	218	204	241	212	180	190	174	195	167

Figure 4-4: Cumulative operating & maintenance expenditure: All services per annum (R'000) (Cumulative)

Year	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Growth investments	19 439	39 120	58 356	77 321	95 495	112 907	129 579	145 445	160 575	175 024
Access backlogs	6 253	12 506	18 759	25 012	31 265	37 518	43 771	50 024	56 277	62 530
Total (R'000)	25 692	51 626	77 115	102 333	126 760	150 425	173 350	195 469	216 852	237 555
Water										
Growth investments	631	1 268	1 893	2 511	3 098	3 666	4 206	4 721	5 214	5 687
Access backlogs	150	301	451	601	752	902	1 052	1 203	1 353	1 503
Total	782	1 569	2 344	3 113	3 850	4 569	5 259	5 924	6 567	7 190
Sanitation										
Growth investments	3 813	7 601	11 307	14 931	18 414	21 783	25 000	28 063	30 967	33 716
Access backlogs	1 113	2 226	3 340	4 453	5 566	6 679	7 793	8 906	10 019	11 132
Total	4 926	9 828	14 646	19 384	23 980	28 463	32 792	36 969	40 986	44 848
Electricity										
Growth investments	10 474	21 135	31 548	41 830	51 692	61 114	70 120	78 714	86 913	94 742
Access backlogs	2 173	4 346	6 519	8 692	10 866	13 039	15 212	17 385	19 558	21 731
Total	12 647	25 481	38 067	50 522	62 557	74 152	85 332	96 099	106 471	116 473
Roads & Stormwater										
Growth investments	4 331	8 724	13 027	17 243	21 287	25 175	28 910	32 444	35 799	39 047
Access backlogs	2 801	5 602	8 403	11 204	14 006	16 807	19 608	22 409	25 210	28 011
Total	7 132	14 326	21 431	28 447	35 293	41 982	48 518	54 853	61 009	67 058
Refuse removal										
Growth investments	189	392	580	806	1 003	1 168	1 343	1 502	1 682	1 833
Access backlogs	15	30	46	61	76	91	107	122	137	152

Year	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Total	205	422	626	867	1 079	1 259	1 450	1 624	1 819	1 986

e. Summary of consumption and use

Service delivery is about consumption and use. The next two tables show the expected demand for water and electricity. The values are net and exclude the impact of losses in water and electricity. These numbers can be used to assess the impact of future demand on the existing capacities of bulk facilities.

Table 4-32: Incremental consumption and usage

Year	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Water (Ml/day)										
Non-revenue water %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Growth investments	2.0	2.0	2.0	2.0	1.9	1.8	1.7	1.6	1.6	1.5
Access backlogs	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Total	2.2	2.3	2.2	2.3	2.1	2.1	1.9	1.9	1.9	1.8
Sanitation (Ml/day)										
Growth investments	1.3	1.4	1.3	1.4	1.3	1.2	1.2	1.1	1.1	1.0
Access backlogs	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Total	1.5	1.6	1.5	1.6	1.5	1.4	1.3	1.3	1.3	1.2
Electricity (MWh/day)										
Losses	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Growth investments	229.3	253.3	250.9	249.0	233.0	216.8	217.0	202.3	186.8	203.5
Access backlogs	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7
Total	235.0	259.0	256.6	254.8	238.8	222.5	222.8	208.0	192.5	209.2
Roads & Stormwater (km/a)										
Growth investments	38.2	38.4	37.6	36.7	35.3	34.0	32.6	30.9	29.3	28.1
Access backlogs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total										
Refuse removal (tons/day)										
Growth investments	104.8	105.1	105.7	108.1	103.0	99.6	82.5	94.5	80.4	91.8
Access backlogs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	104.8	105.1	105.7	108.1	103.0	99.6	82.5	94.5	80.4	91.8
Refuse removal (m3/day)										
Growth investments	210.2	211.0	212.2	216.8	206.6	199.9	165.7	189.5	161.5	184.1
Access backlogs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	210.2	211.0	212.2	216.8	206.6	199.9	165.7	189.5	161.5	184.1

Table 4-33: Cumulative consumption and usage

Year	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Water (Ml/day)										
Non-revenue water %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Growth investments	2.0	4.0	5.9	7.9	9.8	11.6	13.3	14.9	16.5	18.0
Access backlogs	0.3	0.5	0.8	1.1	1.4	1.6	1.9	2.2	2.4	2.7
Total	2.2	4.5	6.7	9.0	11.1	13.2	15.2	17.1	18.9	20.7
Sanitation (Ml/day)										
Growth investments	1.3	2.7	4.1	5.4	6.7	8.0	9.1	10.2	11.3	12.4
Access backlogs	0.2	0.4	0.6	0.8	0.9	1.1	1.3	1.5	1.7	1.9
Total	1.5	3.1	4.6	6.2	7.7	9.1	10.4	11.7	13.0	14.2
Electricity (MWh/day)										
Losses	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Growth investments	229.3	482.6	733.5	982.5	1 215.6	1 432.3	1 649.3	1 851.6	2 038.4	2 241.9
Access backlogs	5.7	11.5	17.2	22.9	28.7	34.4	40.1	45.9	51.6	57.3
Total	235.0	494.1	750.7	1 005.5	1 244.2	1 466.7	1 689.5	1 897.5	2 090.0	2 299.2
Roads & Stormwater (km/a)						0.0%	0.0%	0.0%	0.0%	0.0%
Growth investments	38.2	76.6	114.1	150.9	186.2	220.2	252.8	283.7	313.0	341.2
Access backlogs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	38.2	76.6	114.1	150.9	186.2	220.2	252.8	283.7	313.0	341.2
Refuse removal (tons/day)										
Growth investments	104.8	209.9	315.6	423.7	526.7	626.2	708.8	803.3	883.7	975.5
Access backlogs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	104.8	209.9	315.6	423.7	526.7	626.2	708.8	803.3	883.7	975.5
Refuse removal (m3/day)										
Growth investments	210.2	421.2	633.4	850.2	1 056.8	1 256.7	1 422.4	1 611.9	1 773.4	1 957.6
Access backlogs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	210.2	421.2	633.4	850.2	1 056.8	1 256.7	1 422.4	1 611.9	1 773.4	1 957.6

4.8 Issues to be Considered

This section highlights some of the findings of the demand quantification process.

The demand quantification was done against uncertainty and doubtful data critical to the process.

4.8.1 The customer base

Conflicting sources necessitated an estimate of demographic trends used for modelling purposes. In addition, the data reported by the Council to StatsSA in the previous three Non-financial Censuses do not reconcile with other sources. Consequently, there seems to be an underestimate of households requiring and receiving services from the municipality. The backlogs in both instances are about three to four years' growth and cannot be regarded as substantial over the short term, but it requires that the Council can add at least 2 600 serviced stands annually. The challenge is to sustain delivery at least the level of natural growth to prevent an increase in water and sanitation backlogs.

In developing service delivery strategies, it is essential to distinguish between customers (entities with a legal or contractual claim on the Council to deliver services to them) and entities that do not require services from the Council. The difference between Eskom and the Council electricity supply areas is an example. Unfortunately, the project scope does not allow for an in-depth customer base assessment.

The availability and quality of data in the municipality is a challenge and may directly impact the ability of the Council to quantify, measure and manage change and development.

The number of households is usually the point of departure since it represents most customers. In this, households constitute an estimated 97% of the customer base. A detailed assessment regarding estimating the customer base was given in Section 4.3 of this report.

The estimated number of residential customers is 111 492 households, excluding backyard dwellers and farm dwellings. This aligns broadly with the substantially lower numbers reported by the Council to StatsSA for the Non-financial Census for municipalities.

4.8.2 Service access and service delivery

a. Service access backlogs

Backlogs in water and sanitation are substantial. The estimated water backlog is about 11 663 units, representing 10.2% of customers as part of the effective demand. The corresponding figures for sanitation are 10 848 units which are 9.7% of net demand.

The situation with electricity is more challenging to assess, resulting from the dual responsibility of the Council and Eskom in the municipality. For demand quantification purposes, the emphasis is on the responsibilities of the Council. However, according to the Community Survey 2106, the minimal electricity backlog amounted to 18 769 units or 12.5% of the total demand.

b. Growth demand

There seems to be a clear preference for higher or full levels of services. The focus on full services for customers who cannot afford these services leads to increased operating shortfalls and cash flow deficits over the long term. In addition, during prolonged economic downturns, poverty increases, and the Council faces increased structural impediments where more customers have access to services they cannot afford.

The choice of service levels in the past, complicated by increased poverty, contributed to a situation where the Council faces structural constraints because many households have service levels they cannot afford. Choosing appropriate service levels for future service delivery is an essential component that needs attention as part of a long-term infrastructure provision and service delivery policy.

c. Asset renewal and asset backlogs

The total capital replacement cost (CRC) per service household is higher than expected (R161 842 per unit compared to about R131 000 per unit based on the unit rates used for assessment purposes). This difference reflects the extent of the estimated asset renewal requirements over the next ten years. It is impossible to clarify this matter within this project's scope, but it should be noted as a factor impacting the long-term investment requirements.

4.8.3 Population growth as the basis for demand

Population growth for the total area is relatively high (about 1.44% per annum) but may decline in the next decade. Future growth demand is the biggest pressure currently on service delivery.

The prevailing low-density and single-house development will most probably continue. Notwithstanding calls for densification, land availability, national housing policies, and beneficiary preferences perpetuate single-residential development. Choices on preferred levels of services can have a significant impact on capex and opex. However, cost recovery regimes will significantly impact the Council's long-term financial health and sustainability.

4.8.4 Notable elements of future demand

a. Land required

Over the next ten years, the Council will require 532ha to accommodate growth and development. Residential demand will be an estimated 240ha, with about 23.5% (125ha) required for low-income housing

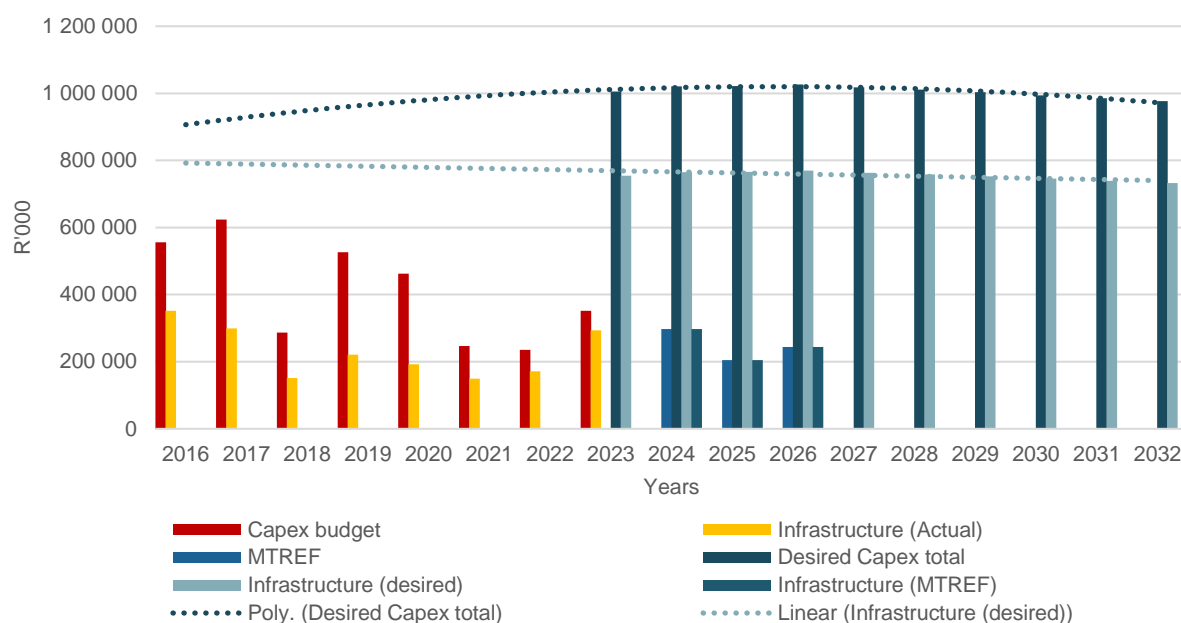
Table 4-34: Summary of land use demand

Land uses	No of units	Total area of uses	% of total land	No of stand required
Residential	34 638	1 400	48.2%	24 879
Single Res: Low Inc	14 628	512	17.6%	14 628
Single Res: Med Inc	6 804	408	14.0%	6 804
Single Res: High Inc	2 341	199	6.8%	2 341
Medium Dens: Low Inc	5 201	130	4.5%	650
Medium Dens: Med Inc	1 950	65	2.2%	163
Medium Dens: High Inc	1 277	51	1.8%	170
High Dens: Low Inc	720	9	0.3%	45
High Dens: Med Inc	780	10	0.4%	26
High Dens: High Inc	936	16	0.5%	52
Backyard dwellings	0	0	0.0%	0
Business	0	80	2.7%	139
Industrial & commercial	0	141	4.8%	305
Public spaces: recreation	0	476	16.2%	478
Community facilities: municipal	0	51	1.7%	42
Community facilities: other	0	162	5.2%	253
Roads totals	0	618	21.3%	0
Totals	34 638	2 109	100.0%	25 824

b. Capital expenditure

The capital requirements to address growth, access backlogs and asset renewal will average more than R750 million per annum. The Council will require about R325 million per annum to accommodate new growth and a further R130 million per annum to address service backlogs. The capex for backlogs is based on a 10-year program. The challenge lies with asset renewal and renewal backlogs. Based on the current replacement cost (CRC), renewal backlogs will require a further R298 million per annum and asset renewal a further R64 million per annum.

The capex budget for the past seven years averaged R203.6 million per annum. The planned expenditure for the MTREF years averaged R179.4 million per annum. The figure below shows the anticipated capex with historical patterns and trends.

Figure 4-5: Capex relationships


The desired level of capital expenditure must be viewed against the Council's funding capacity. Adjustments in these gaps should be addressed by reassessing the Council's service delivery policies, strategies, and service levels provided.

The Council was spending R372 per capita on infrastructure in 2021, which is substantially below the modelled outcome of R1 637. This level of expenditure will continue in the next three MTREF years. The national average capex is about R741 per capita per annum and R511 in Gauteng.

The table below shows the outcomes of the demand quantification for the municipality in the national and provincial average context. The following should be considered:

- Unit costs are affected by the level of service mix. The national figure is a mix of areas with very low levels of services, for example, rural areas and areas with very high levels of services, such as higher-income areas. The service mix depends on the municipality's service delivery policies.

The unit rates for the modelled outcomes are affected by access and renewal backlog eradication targets. For example, if one accelerates backlog eradication, it will imply higher front-end capex. This will affect comparisons such as those in the table below.

Table 4-35: Benchmarking modelled outcomes (2021-based figures)

Base year position (FY19/20)	National Average	Gauteng	Mogale City LM (GT481)	Modelled outcomes
Population	59 622 350	16 061 655	460 710	460 710
Households	16 613 347	5 092 671	148 722	111 492
Total capital expenditure (R'000)	68 808 464	15 301 497	235 569	1 005 502
Total capex on infrastructure (R'000)	44 204 406	8 203 897	171 185	754 126
Per capita capex (infrastructure)	741	511	372	1 637
Per household capex (infrastructure)	2 661	1 611	1 151	6 764
Infrastructure capex as % of total	64.2%	53.6%	72.7%	75.0%
Benchmarked against Mogale City budget				
Per capita capex on infrastructure	1.45	1.00	0.73	3.20
Per household capex on infrastructure	1.65	1.00	0.71	4.20

Base year position (FY19/20)	National Average	Gauteng	Mogale City LM (GT481)	Modelled outcomes
Benchmarked against national averages				
Per capita capex	1.00	0.69	0.50	2.21
Per household capex	1.00	0.61	0.43	2.54

c. The operating impact

The operating impact of the investment demand will accumulate to an additional R175 million per annum at the end of 2032. About R175 million of the impact will come from growth and the rest from providing service access to existing households. The following must be considered:

- The Council have no control over growth. The inability to continuously address growth will result in accumulating backlogs that become more challenging to address in future.
- Expected future growth also represents predominantly poor people who may be unable to pay for services, implying that the subsidy demand will increase.

4.9 The way forward

Any strategy based on the current policy and service delivery regime may not be attainable or sustainable. Financial outcomes result from political decision-making, underlying systems, structures and resources. Even if the demand quantification is correct regarding the order of magnitude of the outcomes, the assessment points to increased financial difficulties. Unsustainable investment demand underlies an inappropriate service delivery environment. However, many of the current issues are also associated with structural problems that resulted from a long history of investment in unaffordable service levels, and the negative impact thereof will continue to reflect in the Council's operations. Therefore, it is suggested that:

1. The Council must better understand the extent of its customer base and the extent of infrastructure and service delivery. Uncertainties regarding the factual situation in the current will constrain the process of finding a solution based on reality. It remains true that if you cannot count it, you can not measure it; if you cannot measure, you cannot manage. The solution does not lie in commissioning more planning studies on spatial development, backlogs, the customer base or services but in instituting development data systems that continuously feed into and support planning and decision-making in the Council. Solutions lie in implementing, maintaining and managing appropriate systems, structures and resources (human and financial). The data challenges apply to a spatial database and asset management information system as the backbone to support the financial system in the Council. A key focus should be system integration.
2. A fully-fledged infrastructure investment framework (IIF) be done to consider the impact of different service delivery and policy scenarios and the long-term financial consequences. The outcome should be a baseline of minimum delivery and financial requirements to sustain and improve service delivery over the long term. The outcomes of such a study should be underpinned by a long-term project prioritisation and management system drawing inputs from a spatial development database linked to the Council's financial system.

The SDF has no apparent link to the Council's future institutional and financial sustainability. It is suggested that the focus should be on developing metrics to measure progress with development and, specifically, an implementation programme linked to a general recovery and spatial improvement programme. In addition, the SDF should focus on solving local land development issues and must be a bold and direct policy statement on the Council's role in local development and what support it will render to residents and developers within the confines of its resource base.



Capital Demand: Integrated Infrastructure Investment Framework

5 Integrated Infrastructure Investment Framework

5.1 Capital Investment Framework

The Integrated Infrastructure Investment Framework (IIIF) also referred to as the Capital Investment Framework (CIF), outlines the demand identified for capital projects within the Mogale City Local Municipality's jurisdiction. It represents all capital projects identified across various sectors by various departments on one standardised platform. The municipality has recognised the following realities:

- Capital investment projects not only originate and/or are implemented by the local municipality;
- The Integrated Urban Development Framework (IUDF) calls for integrated planning and implementation.

Based on the above-mentioned realities, Mogale City Local Municipality aims to identify the total investment demand within the municipality's jurisdiction through this section of the Capital Expenditure Framework.

The institutional process that can deliver an Integrated Infrastructure Investment Framework requires project specific information standard to consolidate and compare the capital expenditure demand as identified by various bodies of government within the municipal jurisdiction. Each project should be adjoined with a set of minimum information to enable uniform appraisal through prioritisation. This is important for a number of reasons:

- A centralised record of all capital needs can be backed up regularly assuring a measure of redundancy and independence on the knowledge of individuals within the various technical departments;
- The centralised data can be called upon by those that are involved in the appraisal of the relative importance of the respective projects and the subsequent budgeting and tracking of those projects;
- It provides a collaborative space for departments to keep record of their needs and to lobby for an appropriate and responsive portion of the annual budget allocation;
- It also provides a platform where project commitments can be communicated to the municipality, and;
- It enables in year monitoring of capital project roll-out.

In the context of capital projects, it is worth noting that there are effectively two statuses of capital projects. The first is planned capital expenditure and the second is committed capital expenditure. The former refers to all capital demand required to service the municipality. These are often referred to as "plans", "intentions", "opportunities" or "wish lists". The latter refers to projects that were prioritised in terms of budget and were allocated funds to implement. The fundamental difference between planned capital expenditure and committed capital expenditure is the intent of the municipality, or responsible role player, to realise a project. Where planned capital expenditure refers to what needs to be done, committed capital expenditure refers to what shall be done.

This working paper will unpack the wish list of projects and will be contextualised in the context of the salient issues in the municipality as part of a rapid assessment.

5.1.1 Rapid Assessment Findings

The purpose of undertaking a rapid assessment of Mogale City is to understand the underlying salient issues present within the municipality, towards understanding the context of capital demand and investment requirements. It should be noted that the findings serve as input to other deliverables as part of the Capital Expenditure Framework. Moreover, the findings highlight how the municipality is planning to respond to some key salient issues through capital investment.

The following data sources were used to inform the rapid assessment:

- Published news articles ranging from 2022 – 2023;
- Integrated Development Plan 2022-23 of the 2021/22- 2025/26
- Draft Integrated Development Plan 2023-24 of the 2021/22- 2025/26
- Local Economic Development Plan, 2010

- Mogale City Spatial Development Framework, 2011
- Comprehensive Rural Development Strategy and Implementation Plan for Mogale City
- Service Delivery and Budget Implementation Plan, 2022/23
- Mogale City State of the Environment Report - Sept 2011

Based on the collective issues, it is evident that the most salient issues relate to governance & financial management, infrastructure engineering followed by demographic change/people development, economic positioning, spatial restructuring & environmental sustainability. The rapid assessment ranks all the salient issues discussed based on the relevant DDM theme and the severity of each issue. It is important to note that the content included results from a rapid desktop qualitative assessment and was based on the frequency of salient issues mentioned within the context of the documents reviewed. Findings in this review will be related further in this document, as the different sections of analysis are unpacked.

The municipality faces diverse challenges in various areas, including demographic change, economic positioning, spatial restructuring, environmental management, infrastructure engineering, integrated services, and governance and financial management. These challenges encompass issues such as poverty, social vulnerability, low education levels, slow economic growth, high unemployment, pollution, inadequate infrastructure, healthcare access, and governance concerns. To overcome these challenges, the municipality needs focused attention and concerted efforts to create job opportunities, improve education, stimulate economic growth, address environmental issues, enhance infrastructure quality, provide integrated services, and strengthen governance and financial management. By addressing these issues, the municipality can foster an inclusive, sustainable, and prosperous community for its residents.

5.2 Planned Capital Expenditure: Local Government

5.2.1 Data source

The base accumulation of the Mogale City Local Municipality's planned capital expenditure was derived from the municipality's asset management plans. Below is the list of plans as well as the additional data collected.

The data sources include:

- Energy Services Project Register
- Integrated Transport Plan (2019 -2024)
- Mogale City Local Municipality Spatial Development Framework (2022 – 2027)
- Schedule 2A Proposed Capital Project List
- The 2019 Capital Expenditure Project List is derived from the following:
 - Municipality's IDP Departmental needs-Proposed budget (2019/20)
 - Water and Sanitation: Completion of Revised Water Services Development Plan
 - Approximate Multi-Year Sectoral Financial Needs (2007)
 - Krugersdorp CBD Precinct Plans (2017)
 - Public Works, Roads and Transport Project List (2019)
 - Economic Development Services Project List (2019)

The planned capital expenditure list was prepared, inclusive of the project name, description, and location as well as the project financial information. Data was verified with respective departments and all dated projects were added to the project list as if not yet implemented and captured as capital needs within the first financial year 2032/2024. The current capital expenditure project pipeline of the municipality includes the capital expenditure for the financial year 2023/2024, up to the financial year 2032/2033.

5.2.2 2023/24 to 2032/33 Total Planned Capital Expenditure per Year

The municipal capital expenditure process is based on a three-year budget cycle as per the Medium-Term Expenditure Framework (MTREF). This approach often has a negative unintended consequence in that it limits municipalities to plan for the same short-term horizon. However, the introduction of the CEF has brought about a comprehensive perspective on capital expenditure over 10 years. In the long term, this will result in a better understanding of capital expenditure.

Nevertheless, continuous efforts must be made such as fostering institutional support of long-term planning, concerning sector plans, before a mature 10-year project pipeline should be formed. This is inclusive of municipal IDPs that have a five-year plan. The revision of longer-term planning will foster an understanding of the developmental direction that the municipality is undertaking. It is also important to note that the further one plans into the future, the more difficult it becomes to express planned capital expenditure. It is for that reason that the planned capital expenditure decreases as the years increase as displayed in Figure 5-1.

Figure 5-1: 2023/24 - 2032/33 Total Planned Capital Expenditure per Year

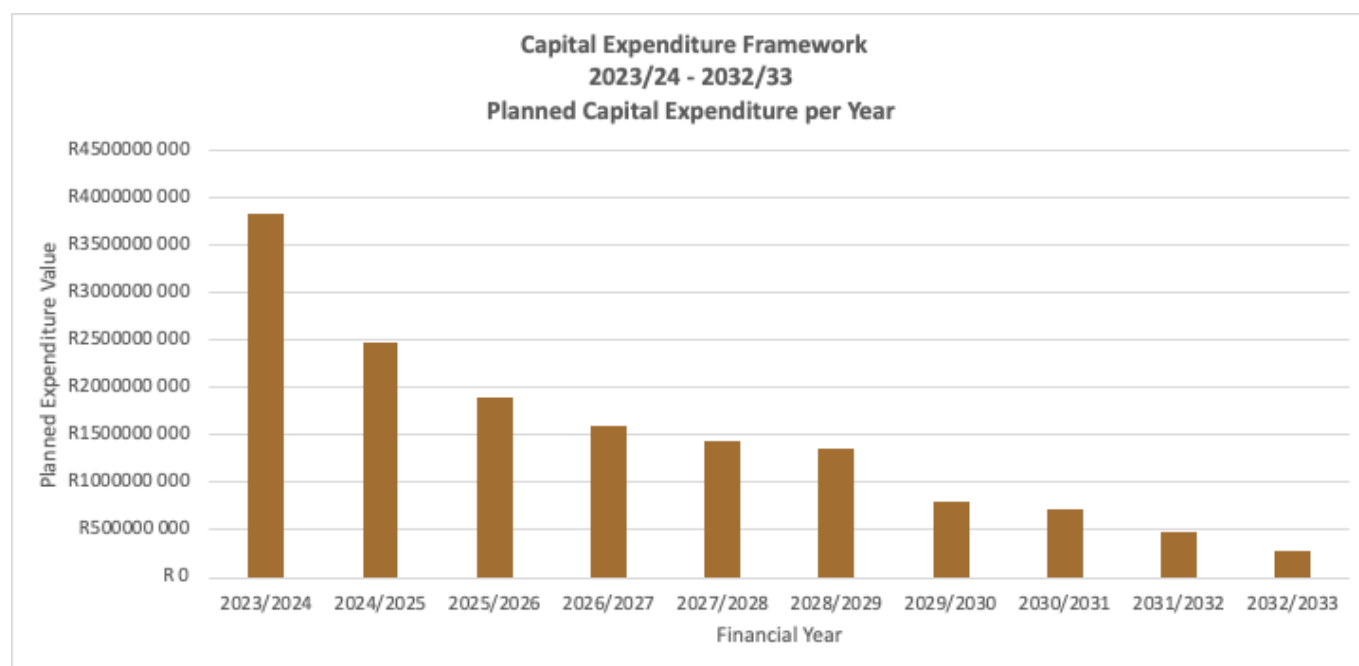


Table 5-1: 2023/24 - 2032/33 Total Planned Capital Expenditure per Year

Year	Total Capital Demand	Total Capital Demand %
2023/2024	R3 823 121 742	26%
2024/2025	R2 480 450 076	17%
2025/2026	R1 902 985 006	13%
2026/2027	R1 587 099 447	11%
2027/2028	R1 443 331 499	10%
2028/2029	R1 360 638 109	9%
2029/2030	R79 436 314	5%
2030/2031	R71 130 650	5%
2031/2032	R48 587 390	3%

Year	Total Capital Demand	Total Capital Demand %
2032/2033	R283 907 137	2%
Total	R14 873 150 372	100%

Municipal planned capital expenditure provides a roadmap of needed spending not limited to the three-year budget MTREF, which extends to the foreseeable future (in this instance, a 10-year horizon).

Table 5-1 indicates that the planned capital expenditure for Mogale City Local Municipality is significantly more within the first three years, with the highest planned capital expenditure in the 2023/24 financial year. From the 2026/2027 financial year, there is then a gradual decrease in the planned capital expenditure which continues to decrease to a low of 2% of the total planned capital budget at the end of the 10-year horizon. The drastic drop in the total capital budget in the outer years infers that most of the planned capital expenditure captured was for immediate implementation (within the MTREF) suggesting that departments only have a better understanding and planning for projects that are occurring in the immediate future with less planning of planned capital expenditure over the long-term planning period. This presents a risk to the municipality in that they may face further deteriorating infrastructure, inadequate capacity, and a backlog of maintenance and upgrade.

5.2.3 2023/24 – 2032/33 Total Planned Capital Expenditure per Unit and Department

This section of the report investigates the overall planned capital expenditure per unit. By analysing each unit's planned capital expenditure, insight into the areas where the municipality intends to allocate its resources will be gained.

Figure 5-2 and Table 5-2 indicate Mogale City's total planned capital expenditure breakdown over the 10-year horizon per unit. Based on the total planned capital expenditure, half of the city's planned capital expenditure stems from Infrastructure Development Services, at 53% of the total planned capital expenditure. This is inclusive of Building Facilities Management Facilities, Energy Services, Roads and Transport Services and Water Services. Infrastructure development is crucial for the overall growth and well-being of a municipality. By allocating capital expenditure to the infrastructure development planning unit, the municipality aims to address the existing infrastructure needs such as road networks, public transportation, water supply, sanitation, and power supply. This supports the Rapid Assessment finding that highlights challenges of poor quality infrastructure, water outages, inadequate road infrastructure that results in traffic congestion and the weakness in the electrical infrastructure.

Figure 5-2: 2023/24 - 2032/33 Total Planned Capital Expenditure per Unit

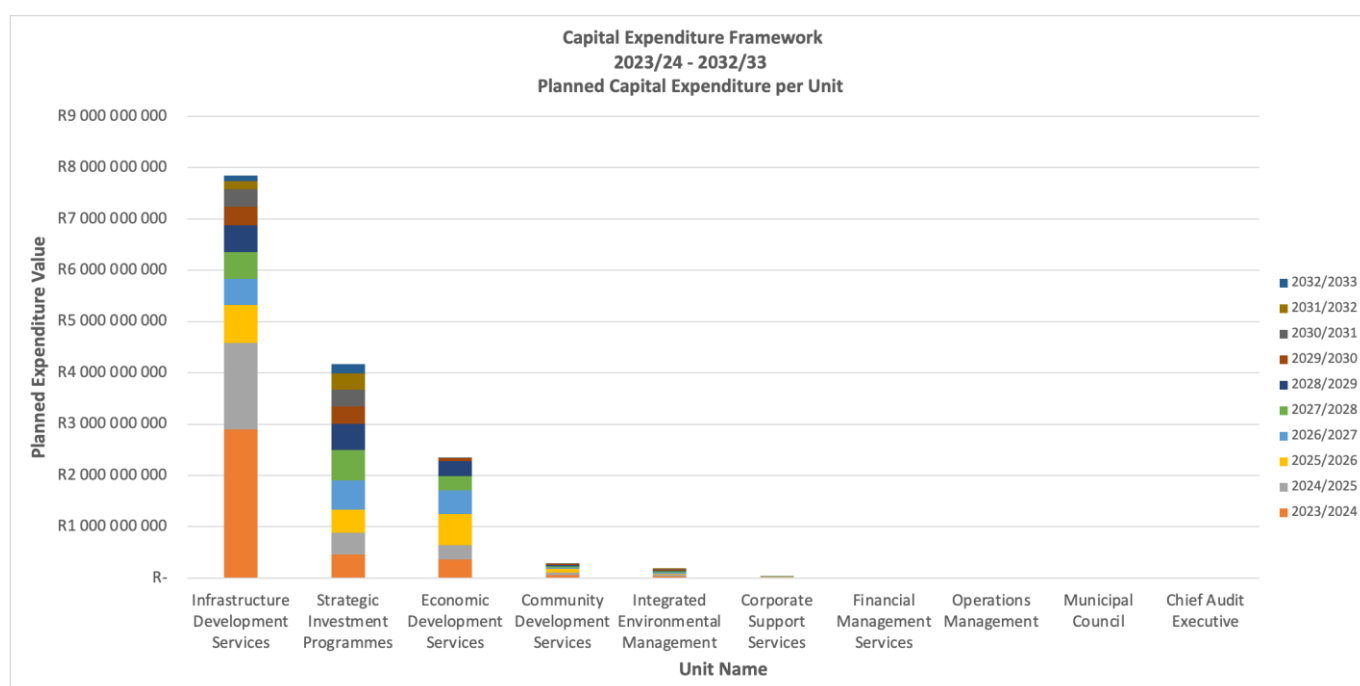


Table 5-2: 2023/24 - 2032/33 Total Planned Capital Expenditure per Unit

Year	Infrastructure Development Services	Strategic Investment Programmes	Economic Development Services	Community Development Services	Integrated Environmental Management
2023/2024	R2 896 199 134	R462 387 728	R363 845 000	R62 299 504	R35 955 376
2024/2025	R1 684 111 671	R417 385 865	R278 454 660	R46 742 504	R34 705 376
2025/2026	R742 983 659	R449 085 842	R609 923 125	R75 983 604	R15 777 776
2026/2027	R512 479 503	R576 942 985	R453 977 531	R22 742 504	R20 777 776
2027/2028	R517 415 403	R595 114 408	R287 281 408	R22 742 504	R20 777 776
2028/2029	R525 365 310	R510 027 880	R287 600 478	R20 755 554	R16 888 887
2029/2030	R362 799 916	R335 167 566	R54 935 502	R20 755 554	R20 777 776
2030/2031	R343 620 763	R323 764 280	R7 387 277	R20 755 554	R15 777 776
2031/2032	R154 000 000	R323 764 280	R0	R0	R8 111 110
2032/2033	R103 000 000	R180 907 137	R0	R0	R0
Total	R7 841 975 360	R4 174 547 972	R2 343 404 981	R292 777 282	R189 549 629
Total %	53%	28%	16%	2%	1%

Table 5-3: 2023/24 - 2032/33 Total Planned Capital Expenditure per Unit (continued)

Year	Corporate Support Services	Financial Management Services	Operations Management	Municipal Council	Chief Audit Executive
2023/2024	R0	R2 037 000	R303 000	R95 000	R0
2024/2025	R19 050 000	R0	R0	R0	R0
2025/2026	R9 231 000	R0	R0	R0	R0
2026/2027	R179 148	R0	R0	R0	R0
2027/2028	R0	R0	R0	R0	R0
2028/2029	R0	R0	R0	R0	R0
2029/2030	R0	R0	R0	R0	R0
2030/2031	R0	R0	R0	R0	R0
2031/2032	R0	R0	R0	R0	R0
2032/2033	R0	R0	R0	R0	R0
Total	R28 460 148	R2 037 000	R303 000	R95 000	R0
Total %	0,19%	0,01%	0,002%	0,001%	0%

Figure 5-3 displays the planned capital expenditure in the Infrastructure Services unit over a 10-year horizon. The figure further displays the planned capital expenditure per department. The figure suggests that within the Infrastructure Services unit, a significant portion of the planned capital expenditure is allocated to the Engineering Services Department (47%) followed by Water Services Department (30%) and Roads and Transport Services Department (22%), with the least planned capital expenditure over the years allocated to Buildings and Facilities Management (2%) and Fleet and workshop Management (0,02%). The distribution of capital expenditure between the three departments suggests that while the unit focuses on the delivery of service infrastructure, there is a poor focus on infrastructure and facilities management resulting in the deterioration of associated infrastructure. A focus in the engineering services department signifies an emphasis on infrastructure development, urban planning, and economic growth. This also indicates that the municipality recognises the importance of investing in projects that support community needs and promote sustainable development. To ensure the sustainable provision of basic services, a greater focus is needed on the maintenance of infrastructure.

Figure 5-3: 2023/24 - 2032/33 Total Planned Capital Expenditure: Infrastructure Development Services

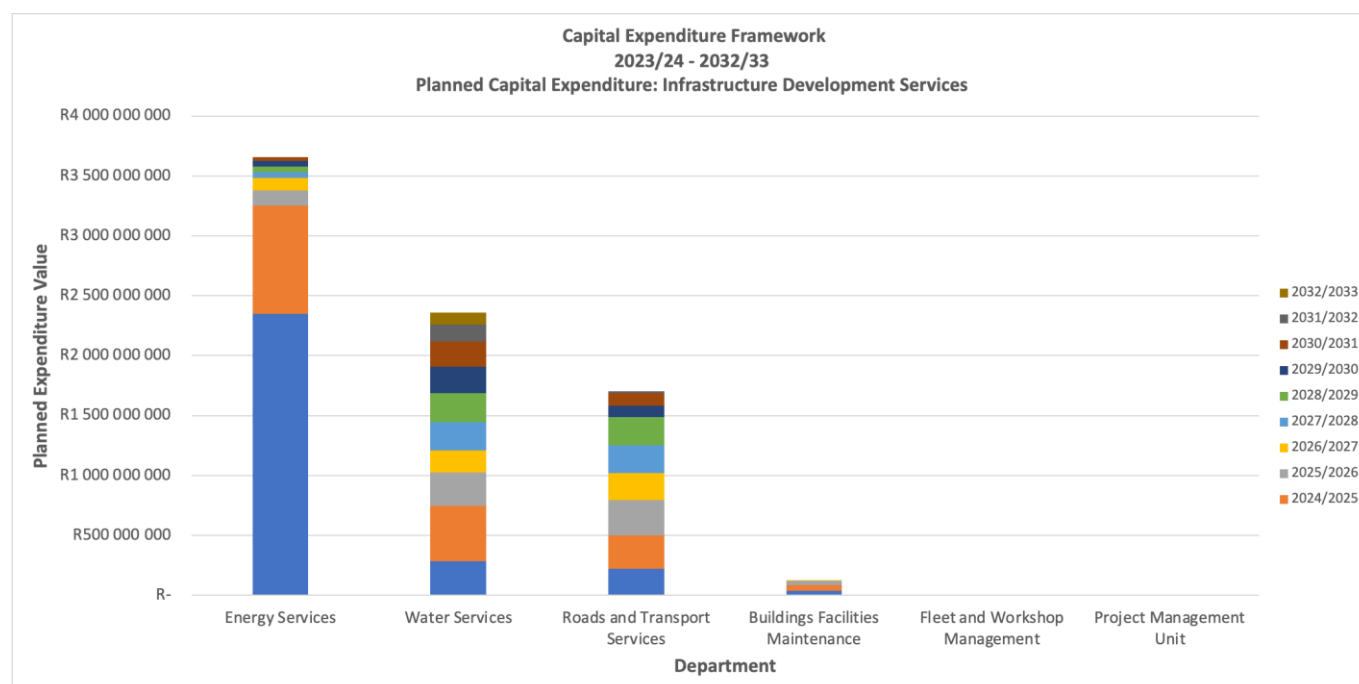
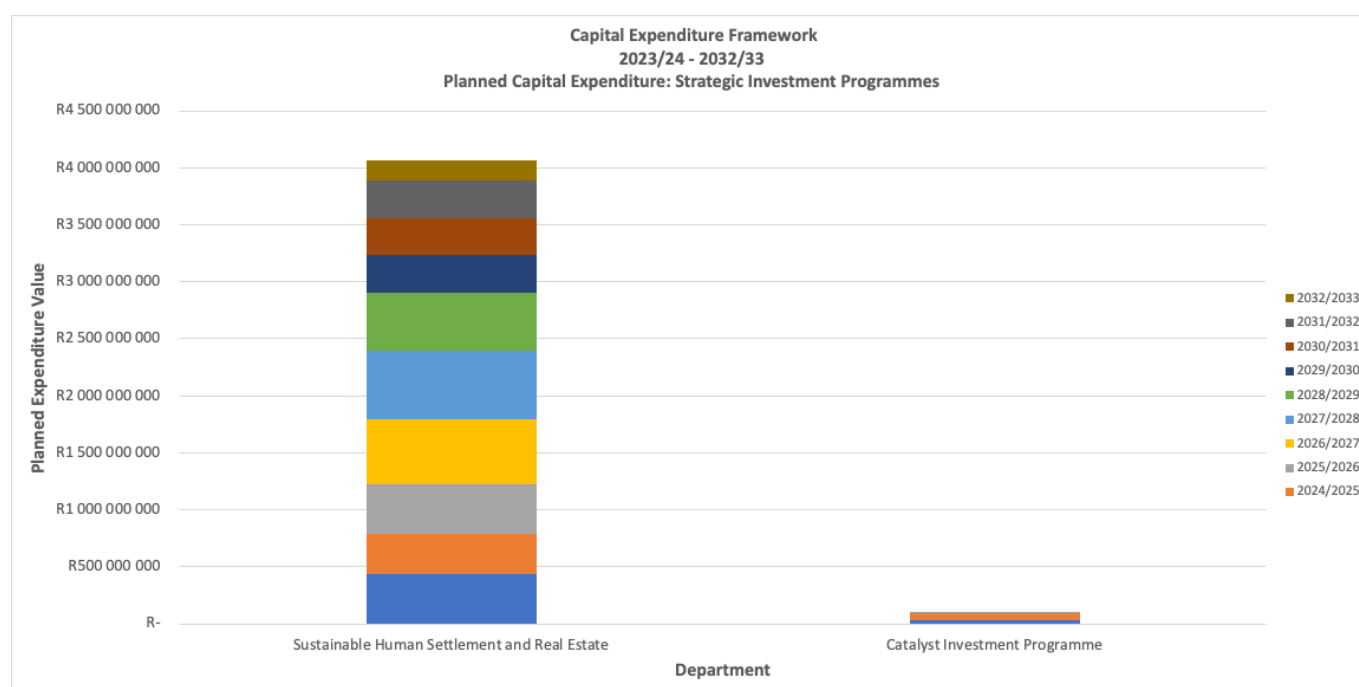


Figure 5-4 shows the planned capital expenditure in the Strategic Investment Programmes Unit over a 10-year horizon. The Integrated Services theme in the Rapid Assessment several critical issues that need urgent attention and proactive measures within the Municipality. The poor access to healthcare, characterized by substandard quality and limited accessibility, undermines the well-being of residents, and exacerbates health disparities. Inadequate housing provisions contribute to living conditions that hinder residents' overall quality of life. Additionally, the education system faces challenges related to low literacy and numeracy levels, poor quality of education, and limited access to educational opportunities. By allocating capital expenditure to this department, the municipality can invest in the construction, renovation, or expansion of affordable housing units. This helps address the housing needs of the community, particularly for low-income or vulnerable populations and promotes access to decent and sustainable housing.

Figure 5-4: 2023/24 - 2032/33 Total Planned Capital Expenditure: Strategic Investment Programmes



Data indicated in Figure 5-5 consists of projects that consist of strategies to attract investment, foster economic growth, and create employment opportunities. Capital expenditure is allocated to projects that promote economic development, such as business parks, industrial zones, innovation hubs, and entrepreneurship support programs. The municipality aims to create an environment conducive to business growth and diversify the local economy.

Figure 5-5: 2023/24 - 2032/33 Total Planned Capital Expenditure: Economic Development Services

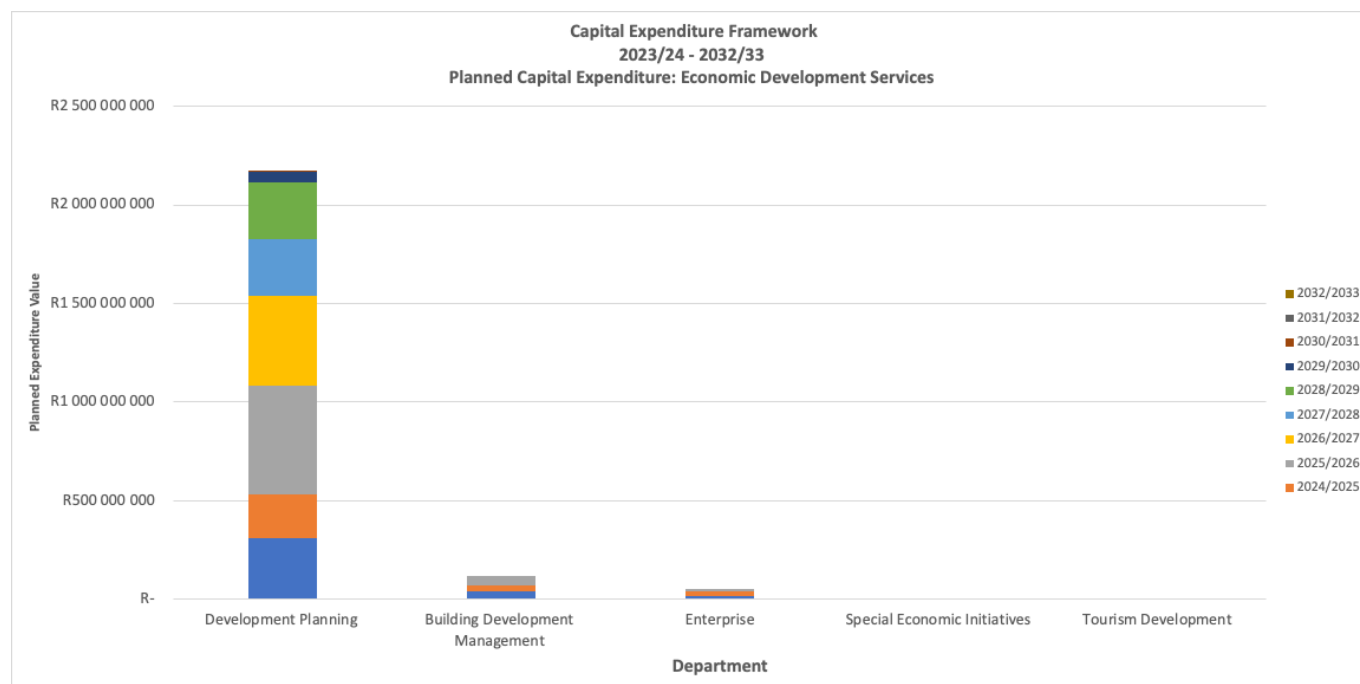
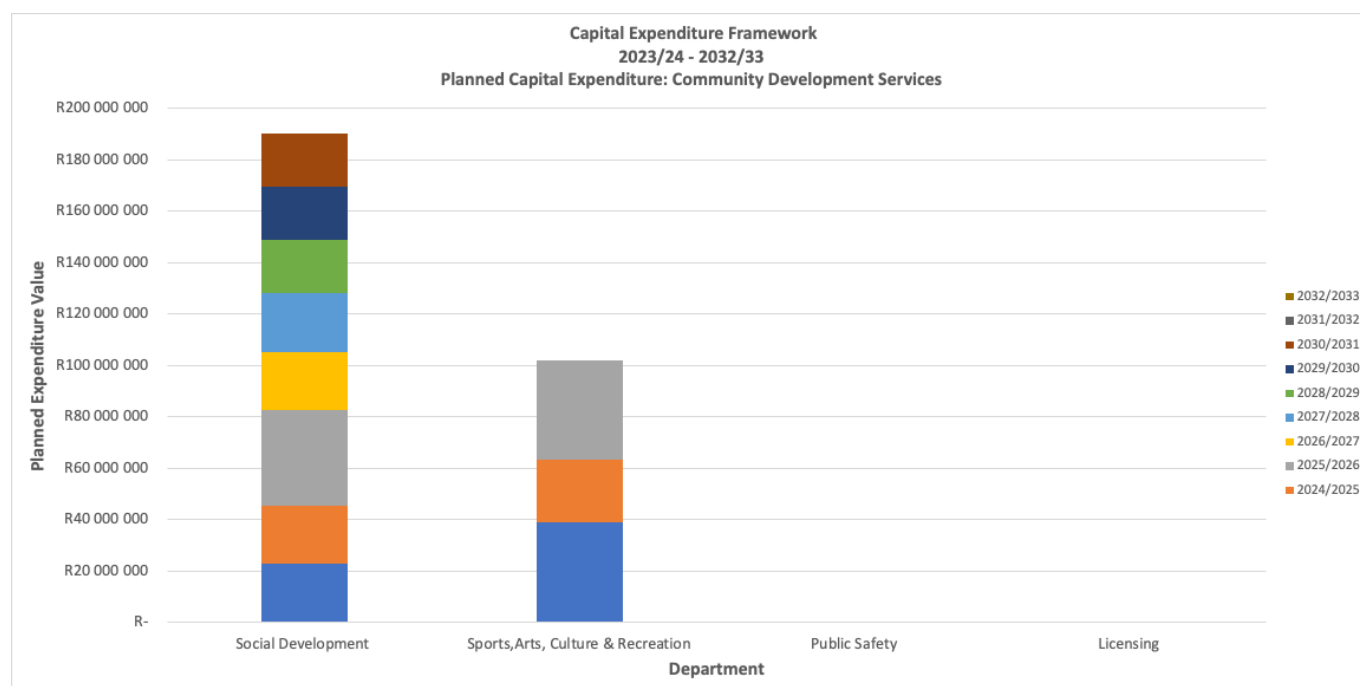


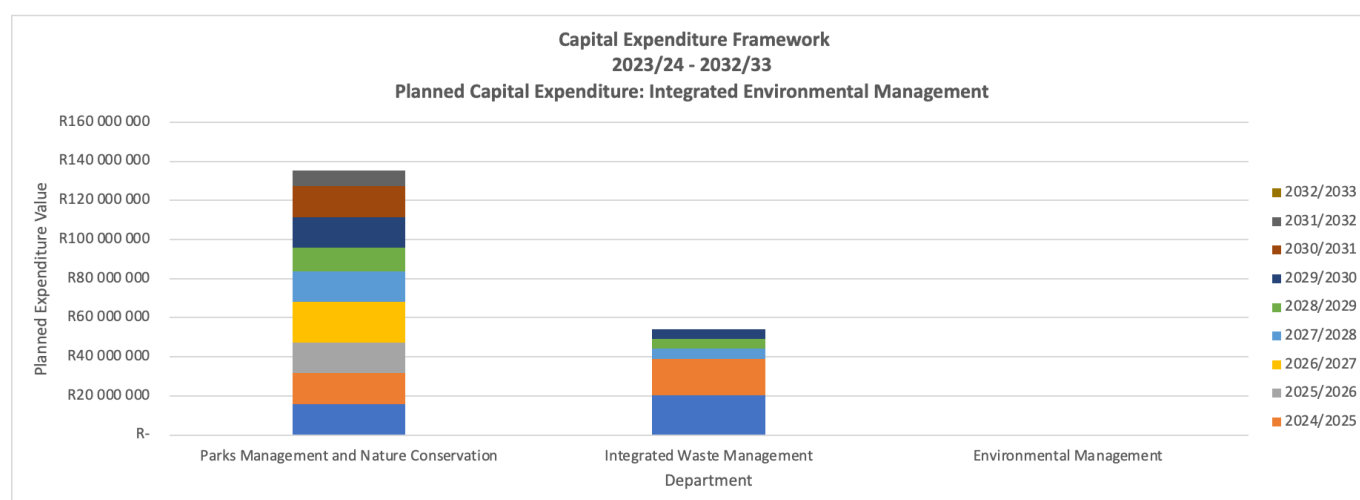
Figure 5-6 shows the planned capital expenditure in the Community Services unit over a 10-year horizon. The figure further displays the capital expenditure per department. The figure suggests that a large proportion of the planned capital expenditure within the Community Development Services unit lies with the Social Development department followed Sports, Arts, Culture and Recreation department. This is inclusive of projects that will allow the municipality to focus on initiatives related to social well-being, community engagement, and the promotion of sports, arts, and cultural activities. The municipality aims to enhance the well-being, inclusivity, and quality of life of its residents while also creating economic opportunities through tourism and cultural initiatives.

Figure 5-6: 2023/24 - 2032/33 Total Planned Capital Expenditure: Community Development Services



Park infrastructure development, biodiversity conservation, ecotourism, park maintenance, environmental education, and collaborative partnerships. These investments contribute to the preservation of natural areas, the enhancement of recreational opportunities, the promotion of environmental awareness, and the overall well-being of residents and visitors. significant attractions for tourists, contributing to the local economy.

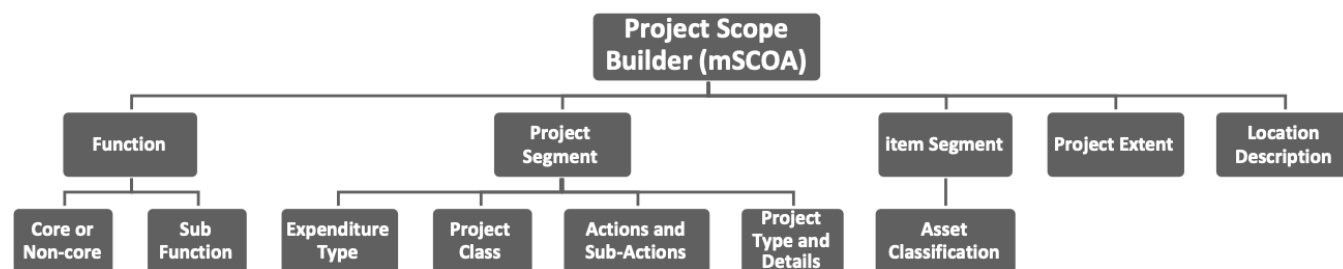
Figure 5-7: 2023/24 - 2032/33 Total Planned Capital Expenditure: Integrated Environmental Management



5.2.4 Planned Capital Expenditure per Nature of Investment

National Treasury has implemented Integrated Financial Management and Internal Control System processes for local government. Key to this is the implementation of the Regulation of a Standard Chart of Accounts, commonly referred to as the Municipal Standard Chart of Accounts (mSCOA). mSCOA makes provision for a uniform and standardised financial transaction classification framework as per the Municipal Regulations and Standard Chart of Accounts as gazetted on 22 April 2014 (Gazette No 37577). Figure 5-8 shows the Municipal Chart of Accounts regulated segment classifications.

Figure 5-8: mSCOA Segment Classification



Typically, within the Project Class, projects are identified as “Infrastructure” and can be further classified as “engineering-type” services as a secondary project class. These are inclusive of Electricity, Water and Sanitation as well as Roads and Storm-water type services. They display some or all the following characteristics:

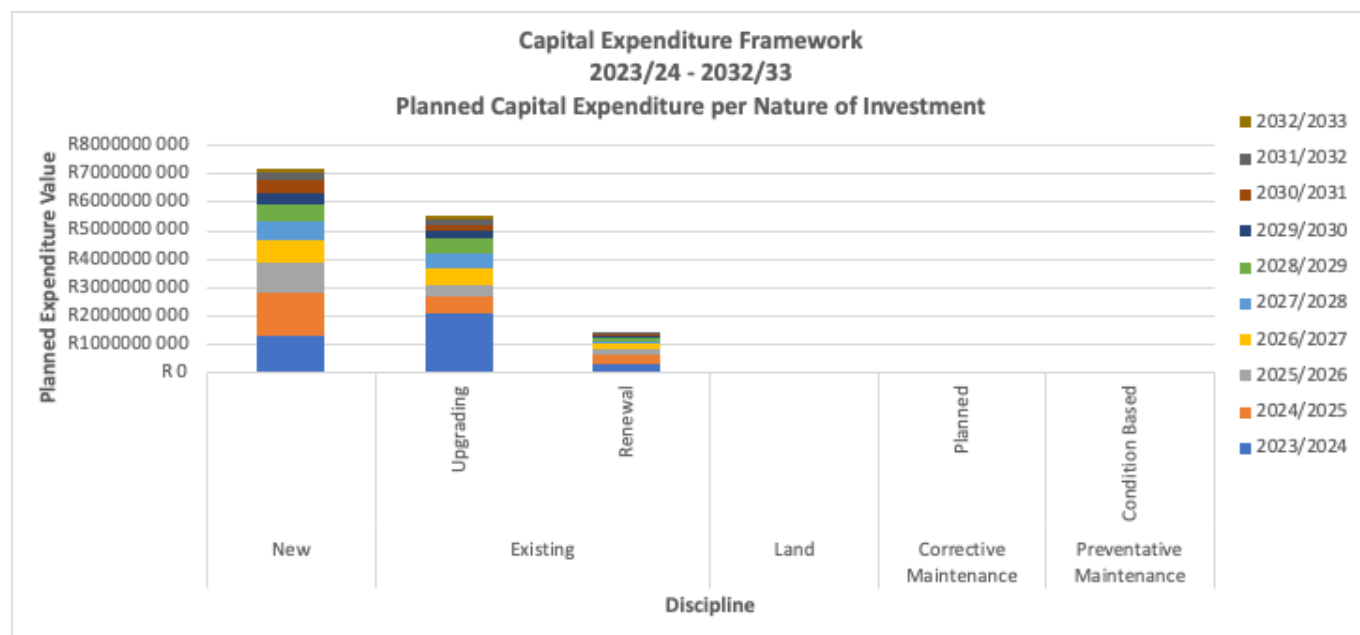
- Part of a system/ Network;
- Specific in nature and do not have alternative uses;
- Immovable, and;
- Subject to constraints at disposal.

Projects that fall under the “non-infrastructure” category are projects of a capital nature, identified by management. For example, the procurement of a new bus fleet for use as urban transport. Housing and Human Settlements also fall within the “non-infrastructure” category.

The project Action and Sub-Action component of the Project Segment within mSCOA is an umbrella term that includes a “New” or “Existing” project. Sub-actions for an “Existing” project include “Upgrade” or “Renewal”. For ease of reference, the category descriptions are as follows:

- New: Capital projects to provide new assets to meet the current and future growth demands;
- Existing: Capital projects to provide an upgrade or renewal to an asset to meet the current and future demands;
- Existing – Upgrade: Upgrade projects are generated according to the requirement for the replacement of a part of an asset component to increase the current capacity of the asset, and;
- Existing – Renewal: Replacing of existing infrastructure that has reached a Remaining Useful Life (RUL) of zero, while providing the same capacity and service.

Figure 5-9 Table 5-4 the planned capital expenditure expressed per Nature of Investment. Many assets, in terms of planned capital expenditure, are related to new assets at 51%, followed by upgrading and renewal of existing assets at 39% and 10% respectively of the planned capital expenditure during the analysis period. Typically, new assets should only amount to between 10% to 20% of a municipality’s capital expenditure demand. The longer-term emphasis on new assets demand, with several years encroaching just over the R1 bn mark – and at about 51% of the total planned capital expenditure – highlights the underlying dilemma regarding maintenance and upgrading backlogs. It could be an indication of the municipality’s proactive approach to infrastructure development, capacity expansion, economic growth, innovation, and long-term planning.

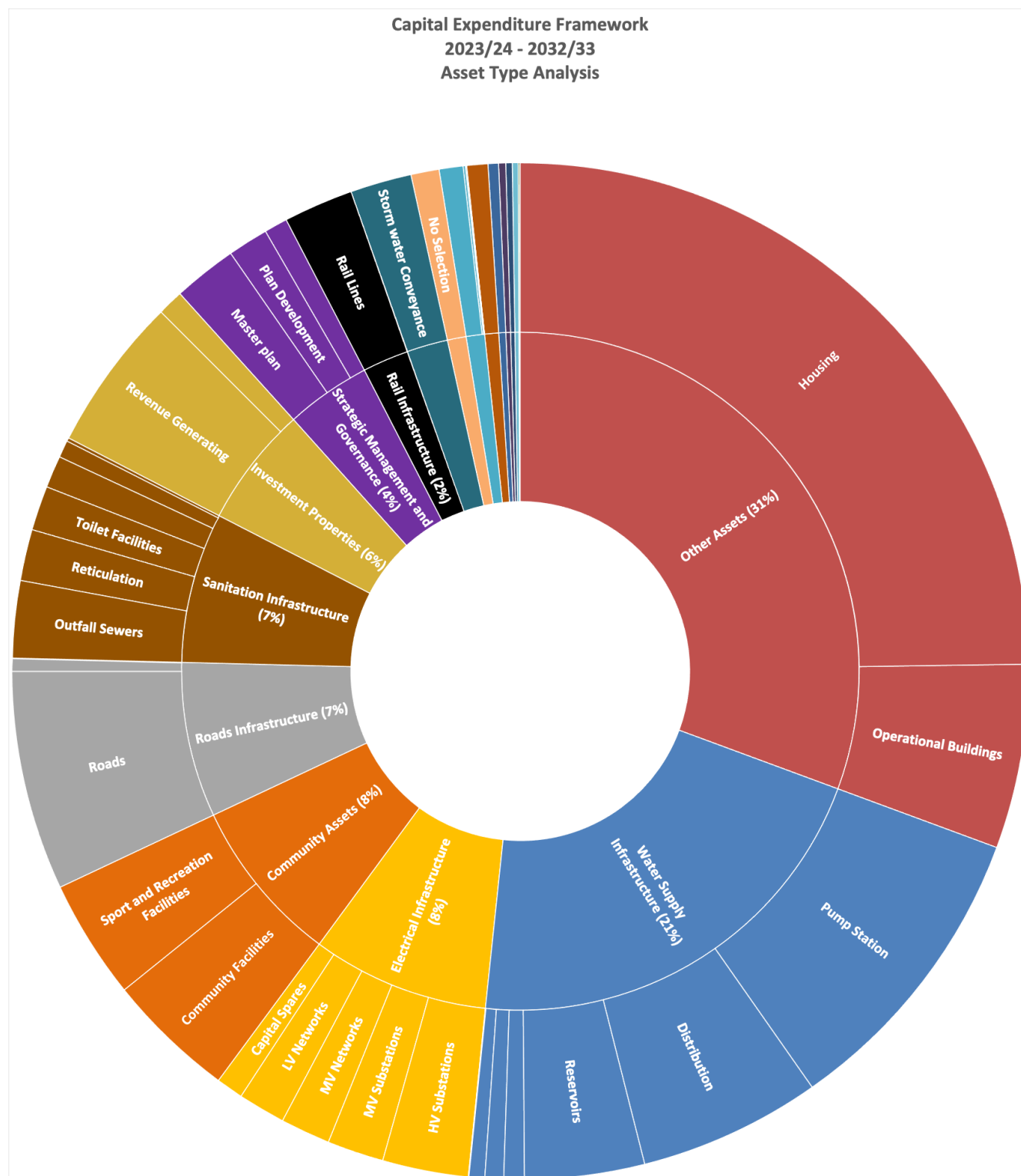
Figure 5-9: 2023/24 – 2032/33 Total Planned Capital Expenditure per Nature of Investment

Table 5-4: 2023/24 – 2032/33 Total Planned Capital Expenditure per Nature of Investment

Year	New	Existing		Land	Corrective Maintenance	Preventative Maintenance
		Upgrading	Renewal			
2023/2024	R1 312 002 481	R2 098 032 041	R316 124 983	R500 000	R0	R0
2024/2025	R1 489 816 092	R560 419 078	R312 583 333	R1 200 000	R0	R0
2025/2026	R1 090 421 727	R452 234 637	R237 432 333	R0	R0	R0
2026/2027	R792 670 460	R540 864 899	R137 483 333	R0	R0	R0
2027/2028	R662 534 448	R532 070 849	R116 983 333	R0	R0	R0
2028/2029	R579 792 436	R522 683 041	R116 983 333	R0	R0	R0
2029/2030	R428 905 432	R283 547 549	R78 983 333	R0	R0	R0
2030/2031	R416 630 921	R241 341 396	R50 333 333	R0	R0	R0
2031/2032	R292 621 423	R170 253 967	R20 000 000	R0	R0	R0
2032/2033	R133 764 280	R147 142 857	R0	R0	R0	R0
Total	R7 199 159 701	R5 548 590 313	R1 386 907 314	R1 700 000	R0	R0
Total %	51%	39%	10%	0%	0%	0%

5.2.5 Planned Capital Expenditure per mSCOA Asset Type and Sub Type

The discipline-based analysis is a method of illustrating the types of assets to be developed or planned for. This enables a deduction on the planning intention of the municipality over the ten years. Please note that this is only considering sector plans and not necessarily the IDP needs of future years. Asset types in this instance have been compiled, based on the mSCOA project segment category per project.

Figure 5-10: 2023/24 – 2032/33 Total Planned Capital Expenditure per Asset Type



The planned capital expenditure demand by mSCOA asset and asset sub-type classification is shown in Figure 5-10. Other Assets (31%) comprising Operational Buildings and Housing Subtype Assets make up most of the planned capital expenditure needs of the municipality followed by Water Supply Infrastructure (21%), Community Assets (8%), Electrical Infrastructure (8%), Roads Infrastructure (7%) and finally Sanitation Infrastructure asset at 6%.

Figure 5-10 also depicts the planned capital expenditure per mSCOA asset sub-types summarised into the largest demand for infrastructure types. The following can therefore be noted:

- Under the Other branch, the dominant asset subtype is Housing (81%) and Operational Building (19%). Mogale City IDP, the provision of sustainable human settlements remains one of the biggest challenges of government.
- Under the Water Supply Infrastructure Asset Type, the dominant asset subtype is Pump stations at 46% of the planned capital expenditure per asset type. Mogale City is grappling with significant water supply challenges, as highlighted in various articles and the Draft Climate Change Framework 2014. These challenges encompass interruptions in water supply, revenue collection issues, and the subsequent implications of inadequate access to clean water.
- Under the Electrical Infrastructure, the dominant asset subtype is HV Substations (32%) and MV Substations (21%) of the planned capital expenditure per asset type. The Mogale City Rapid Assessment (2023) highlights that load shedding and the need to minimize power usage in Mogale City have exposed weaknesses in the electrical infrastructure. Frequent and prolonged power outages disrupt daily activities, impact businesses, and inconvenience residents, highlighting the urgent need for improvements. Insufficient capacity and outdated infrastructure strain the system, leading to power shortages and limitations on electricity access, emphasizing the necessity to enhance the electrical infrastructure to meet growing demands.
- Under Community assets, the dominant asset subtypes are Community Facilities (52%) and Sport and Recreation Facilities (48%) strategies aim to strengthen the urban open space system, which encompasses both natural and man-made open spaces in the urban environment. This includes parks, town squares, sports fields, and other recreational areas. The development of a planned and interconnected open space network is intended to enhance the visual appeal, variety, and recreational opportunities within Mogale City Local Municipality. The urban open space system also serves practical purposes such as flood attenuation, stormwater management, and urban agriculture.
- Under the Roads Infrastructure, the dominant asset subtype is Roads 94% of the planned capital expenditure per asset type. According to the Mogale City Local Municipality Local Integrated Transport Plan (2019 – 2024), while, the majority of the paved roads within the municipality range from fair to good, gravel road conditions are considered to be in a poor (74%) to very poor condition (20%).

5.2.6 2023/24 to 2032/33 Total Planned Capital Expenditure per Functional Areas

Throughout the compilation of the CEF, a lot of emphasis has been placed on the rationale, methodology, formulation, and evaluation of Functional Areas. Understanding that it is an evidence-based spatial view frame that can be used to forecast population growth and land budget trends, it is useful to evaluate the Functional Areas in terms of the planned capital expenditure response by the municipality. As such, the analysis includes a breakdown of the planned capital expenditure per spatial targeted category and is based on the spatially referenced information captured for projects.

Projects classified as “City wide” refer to investment that benefits more than one service area. Whereas projects classified as “Administrative HQ” refer to those (operational and capital) that are geared towards the effective running and management of the municipality throughout the demarcated area. Furthermore, “Administrative HQ” indicates expenditure focussed on daily operations and administration as opposed to future investments. Projects identified as “Not Mapped” include those without a spatial location, therefore, requiring investigation and the addition of spatial information to ensure all planned capital projects have a location, to enable better spatial targeting toward future investments within the municipality. Figure 5-11 implies that 84% of the municipality’s planned capital expenditure is spatially mapped.

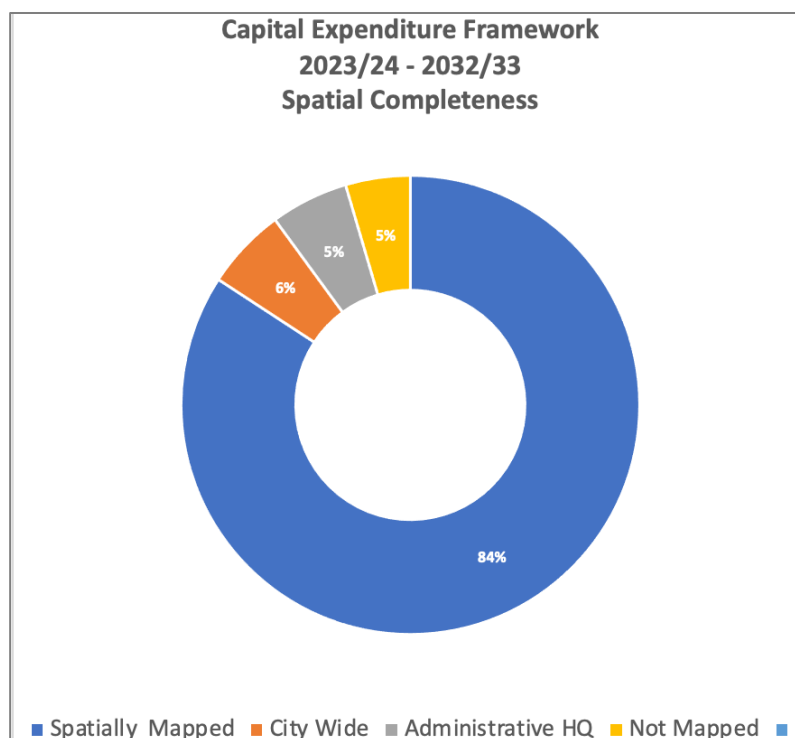
Figure 5-11: 2023/24 - 2032/33 Spatial Completeness


Table 5-5 and Figure 5-12 illustrate the location of the planned capital expenditure in relation to spatially targeted areas. Viewing the planned capital expenditure demand by Functional Areas shows that the municipality exhibits a degree of spatial targeting. Spatially targeted areas with a larger capital expenditure demand include the “Urban Concentration” followed by the “Urban Restructuring” and the “Rural Agricultural” functional Areas. These are areas that require restructuring due to factors like outdated infrastructure or urban decay.

The functional areas with the least capital expenditure demand include “Conservation Tourism” and “Urban Expansion”.

Further analysis of the different spatially targeted areas indicates the dominant asset types within these areas:

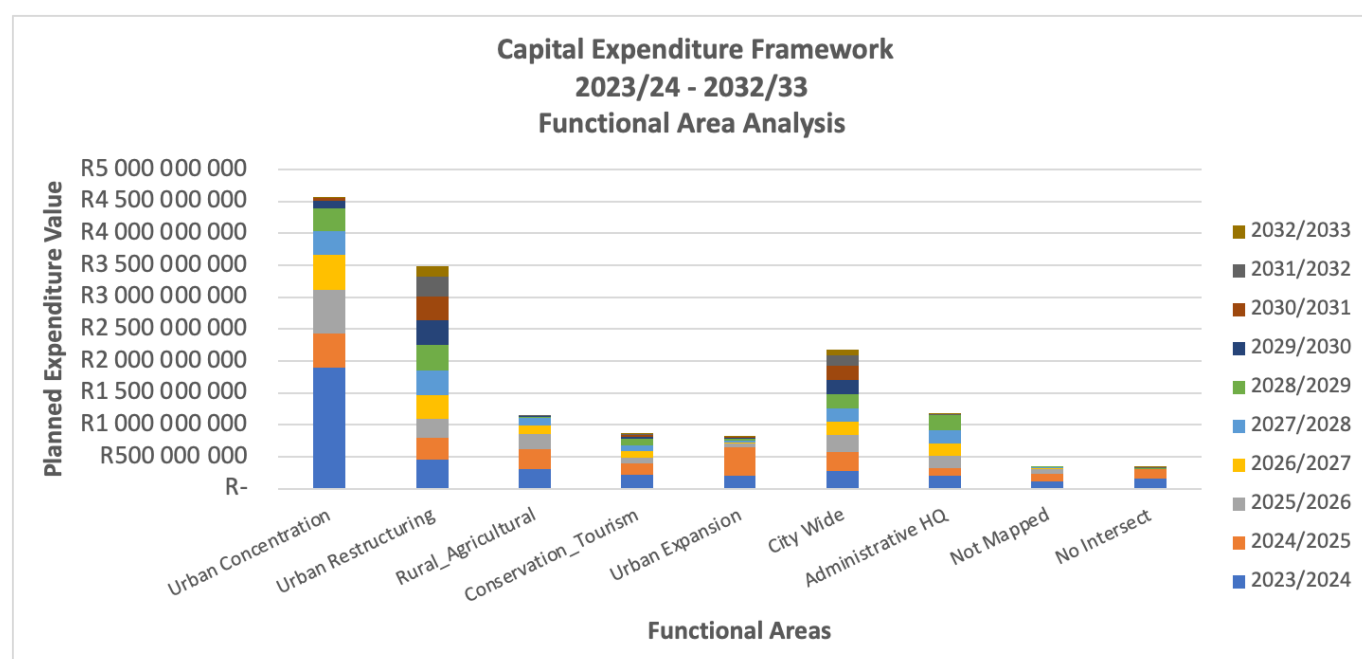
- The dominant asset type within the “Administrative HQ” are Strategic Management and Governance related to master planning and policy review projects.
- The dominant asset type within the “City Wide” is Water Supply Infrastructure
- In “Urban Expansion” and “Urban Concentration” the dominant asset type is Water Supply Infrastructure.
- The dominant asset type within the “Rural Agricultural” and “Urban Restructuring” functional areas is Other which comprises of Operational Buildings and Housing asset subtype.

Table 5-5: 2023/24 - 2032/33 Total Planned Capital Expenditure per FAs

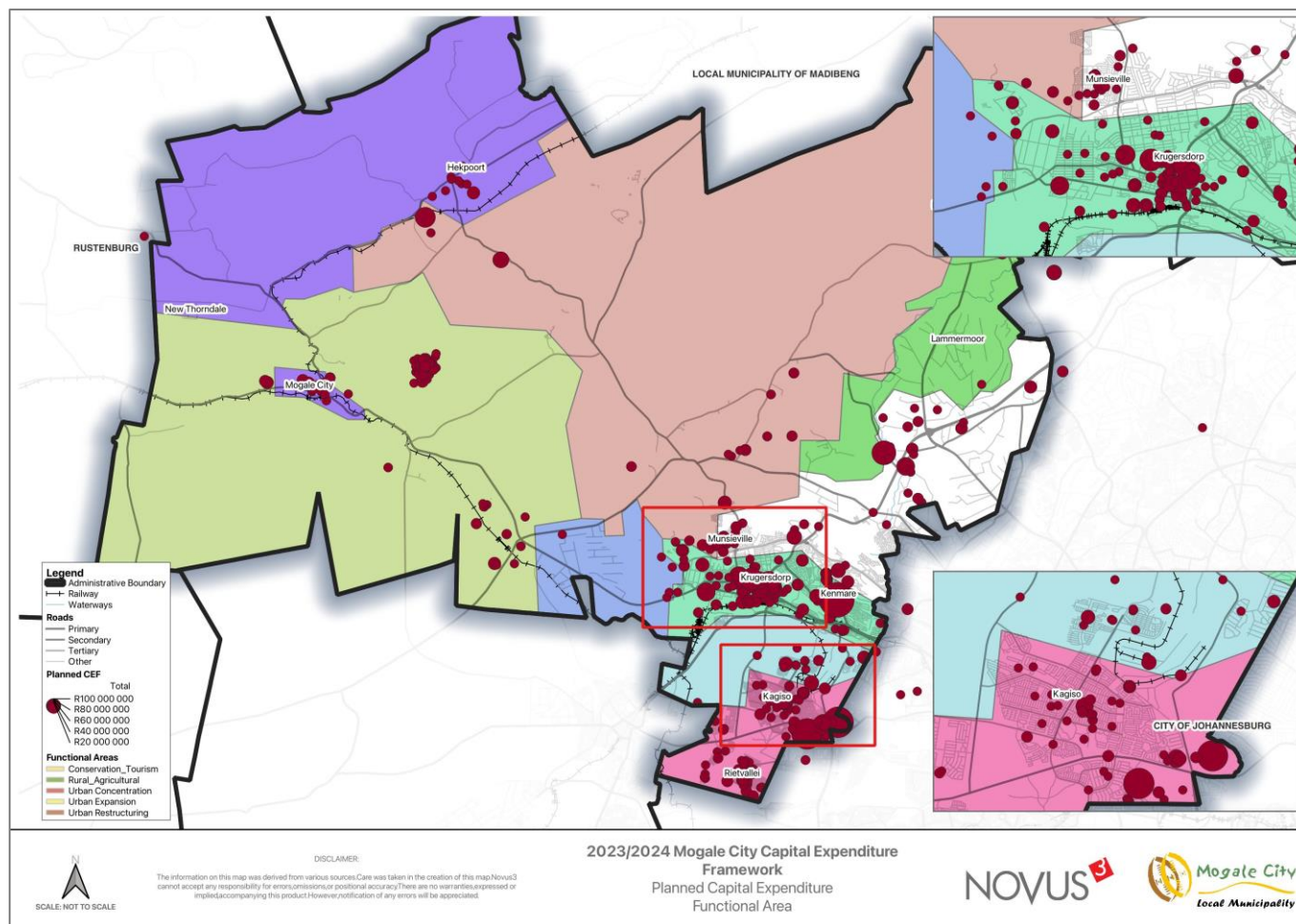
Year	Urban Concentration	Urban Restructuring	Rural Agricultural	Conservation Tourism	Urban Expansion
2023/2024	R1 899 323 576	R459 652 639	R299 165 717	R213 418 171	R201 259 391
2024/2025	R525 440 554	R340 784 779	R311 729 441	R176 317 360	R440 599 502
2025/2026	R682 053 570	R289 415 522	R245 099 277	R95 538 084	R60 240 453
2026/2027	R550 835 671	R379 689 190	R124 692 143	R96 088 888	R24 420 629
2027/2028	R372 104 875	R377 904 696	R124 520 010	R98 661 673	R26 798 090
2028/2029	R355 917 698	R402 719 940	R18 004 911	R99 618 885	R26 798 090
2029/2030	R114 900 855	R387 949 644	R11 514 397	R32 679 521	R13 332 633
2030/2031	R53 237 719	R370 603 076	R111 111	R33 734 847	R10 332 633
2031/2032	R5 496 176	R309 587 301	R111 111	R4 539 682	R7 854 856
2032/2033	R3 496 176	R164 285 714	R0	R4 428 571	R4 410 412
Total	R4 562 806 869	R3 482 592 503	R2 180 585 125	R1 163 006 110	R1 134 948 119
Total %	31%	23%	15%	8%	8%

Table 5-6: 2023/24 - 2032/33 Total Planned Capital Expenditure per FAs continued

Year	Urban Concentration	Urban Restructuring	Rural Agricultural	Conservation Tourism
2023/2024	R279 472 625	R196 791 557	R110 886 075	R163 151 992
2024/2025	R298 662 500	R125 682 173	R118 393 744	R142 840 022
2025/2026	R263 250 000	R190 258 309	R76 789 769	R340 022
2026/2027	R208 500 000	R189 532 903	R13 000 000	R340 022
2027/2028	R209 200 000	R216 515 869	R13 000 000	R4 626 286
2028/2029	R212 000 000	R227 952 299	R13 000 000	R4 626 286
2029/2030	R224 500 000	R5 273 000	R0	R4 286 264
2030/2031	R235 000 000	R4 000 000	R0	R4 286 264
2031/2032	R150 000 000	R4 000 000	R0	R4 286 264
2032/2033	R100 000 000	R3 000 000	R0	R4 286 264
Total	R855 025 684	R816 046 690	R345 069 588	R333 069 685
Total %	6%	5%	2%	2%

Figure 5-12: 2023/24 - 2032/33 Total Planned Capital Expenditure per FAs


Map 5-1: 2023/24 - 2032/33 Total Planned Capital Expenditure per FAs



5.2.7 2023/24 to 2032/33 Total Planned Capital Expenditure per Wards

This section seeks to identify the degree of spatial targeting achieved by the municipality within each electoral ward. It is indicative of planned capital expenditure intent within specified wards. The planned capital expenditure throughout the 10-year horizon within the populated wards illustrates a targeted distribution of planned capital expenditure towards specific wards.

It is important to note that a large proportion of the planned capital expenditure per ward which includes projects classified as “City Wide” and “Administrative Head Quarters” has been omitted in Figure 5 16 as the large volume of projects and therefore budget obscures the effect of spatial targeting.

Projects classified as “City wide” refer to investment that benefits more than one service area. Whereas projects classified as “Administrative HQ” refer to those (operational and capital) that are geared towards the effective running and management of the municipality throughout the demarcated area. Furthermore, “Administrative HQ” indicates expenditure focussed on daily operations and administration as opposed to future investments.

Projects identified as “Not Mapped” include those without a spatial location, therefore, requiring investigation and the addition of spatial information to ensure all planned capital projects have a location, to enable better spatial targeting toward future investments within the municipality. Finally, projects identified as “No Intersect” refer to those that fall outside of the municipal boundaries. In this case, project locations require revisiting as they may be cross-border locations.

Figure 5-13: 2023/24 - 2032/33 Total Planned Capital Expenditure per Wards

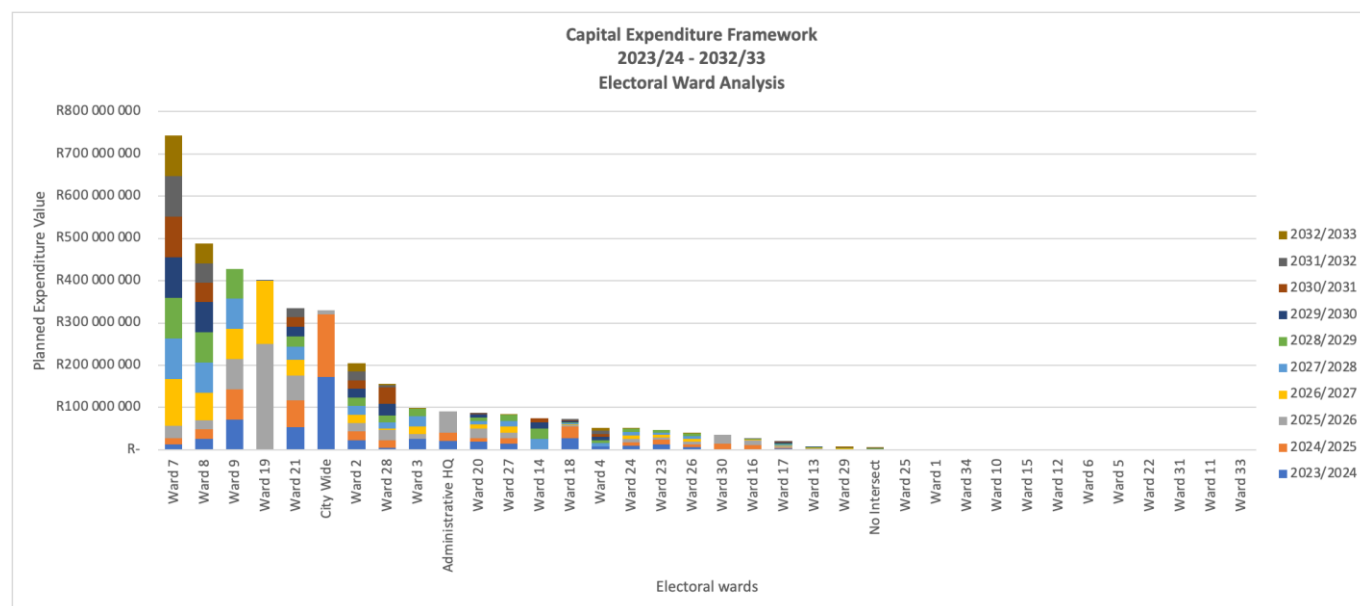


Figure 5-13 and Map 5-2 illustrate the planned capital expenditure per ward. The figures suggest that a majority of the planned capital expenditure falls within wards 7, 8 and 9. The wards lie within Kagiso, Rietvallei which are informal areas within the mining belt. Areas to the south of Krugersdorp, are predominantly previously disadvantaged settlements with significantly limited access to Municipal services and facilities compared to Krugersdorp. These areas are also physically separated from the Krugersdorp urban areas by an extensive mining belt that runs in an east-west direction through the area

facilities compared to Krugersdorp This, therefore, suggests that larger planned capital expenditure is seen within or near areas of higher density and wards with the least capital expenditure demand are those further away from the larger urban centres and with lower population densities. This is expected as areas with higher population densities require larger bulk infrastructure to service the existing and growing populations.

Map 5-2: 2023/24 - 2032/33 Total Planned Capital Expenditure per Wards

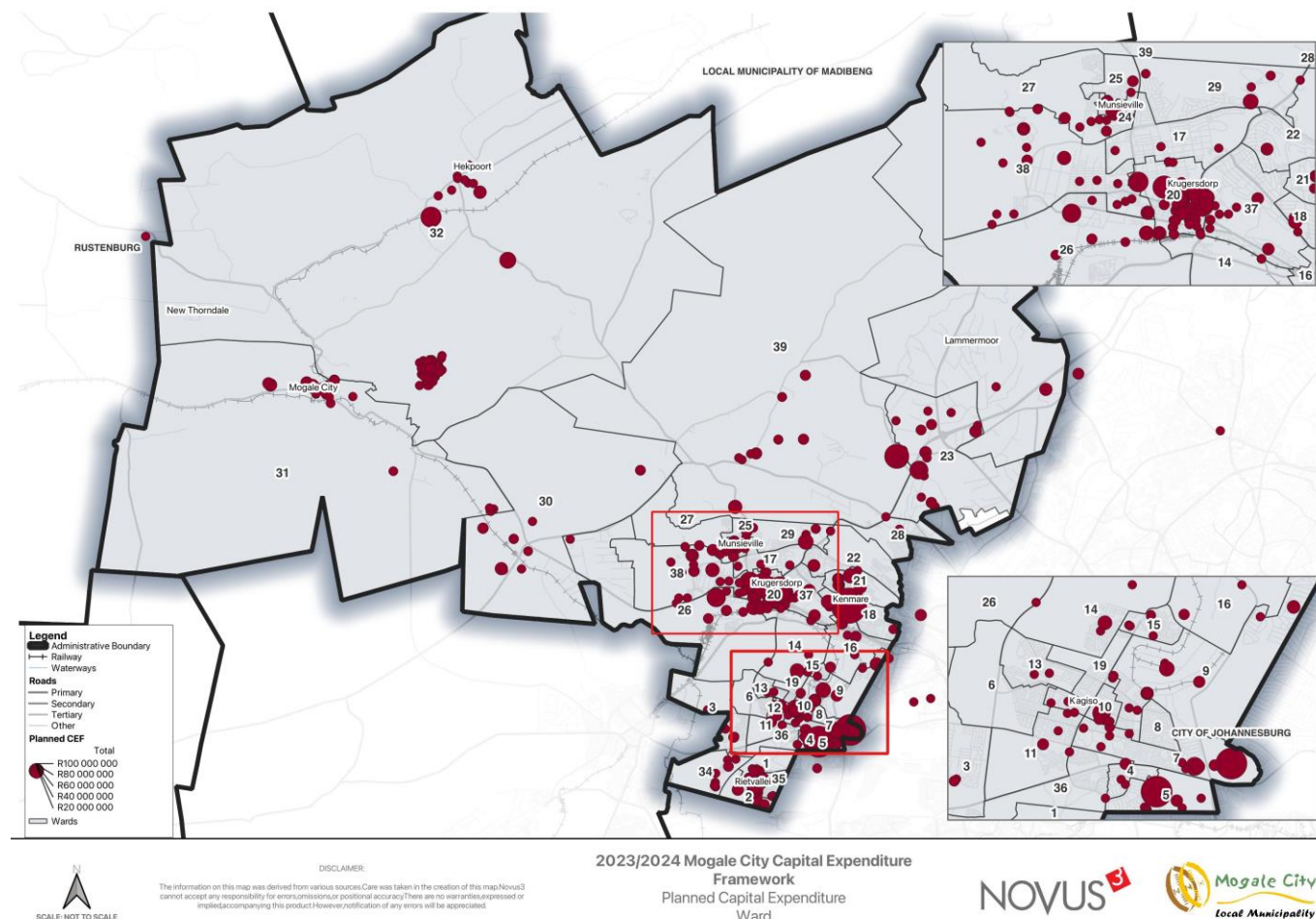


Table 5-7: 2023/24 - 2032/33 Total Planned Capital Expenditure per Wards

Wards	2023/2024	2024/2025	2025/2026	2026/2027	2027/2028	2028/2029
Ward 7	R12 000 000	R15 000 000	R30 000 000	R110 975 772	R95 975 772	R95 975 772
Ward 8	R25 500 000	R23 750 000	R20 000 000	R66 226 544	R71 226 544	R71 226 544
Ward 9	R71 408 658	R71 408 658	R71 408 658	R71 408 658	R71 408 658	R71 408 658
Ward 19	R66 258	R66 258	R249 597 800	R149 766 995	R20 789	R20 789
Ward 21	R53 305 026	R63 285 026	R58 285 026	R38 285 026	R31 285 026	R23 285 026
City Wide	R171 915 000	R147 961 538	R10 000 000	R0	R0	R0
Ward 2	R23 104 201	R19 924 446	R19 924 446	R19 924 446	R20 411 068	R20 411 068
Ward 28	R4 128 585	R19 128 585	R22 878 585	R4 128 585	R13 795 466	R17 395 466
Ward 3	R26 122 751	R28 254	R10 866 707	R17 913 489	R23 876 885	R17 915 140
Admin HQ	R20 200 000	R20 000 000	R50 949 000	R0	R0	R0
Ward 20	R18 582 135	R8 582 135	R23 614 030	R8 601 272	R8 582 135	R8 582 135
Ward 27	R13 720 240	R13 720 240	R13 720 240	R13 720 240	R13 721 114	R13 721 114
Ward 14	R0	R0	R0	R0	R25 000 000	R25 000 000

Wards	2023/2024	2024/2025	2025/2026	2026/2027	2027/2028	2028/2029
Ward 18	R27 602 899	R27 512 899	R2 583 650	R2 527 968	R2 444 444	R2 444 444
Ward 4	R7 629 782	R590	R70 137	R115 354	R7 541 594	R7 503 340
Ward 24	R9 307 692	R8 755 232	R7 834 465	R7 834 465	R7 841 466	R7 841 466
Ward 23	R12 163 310	R11 715 770	R5 636 536	R5 636 536	R5 636 536	R5 636 536
Ward 26	R6 507 815	R6 507 815	R6 507 815	R6 507 815	R6 511 611	R6 511 611
Ward 30	R0	R15 000 000	R20 000 000	R0	R0	R0
Ward 16	R861 603	R10 861 603	R10 861 603	R861 603	R861 603	R861 603
Ward 17	R2 463 182	R2 463 182	R2 473 433	R2 469 333	R2 463 182	R2 463 182
Ward 13	R1 029 729	R1 029 729	R1 000 011	R1 000 011	R1 000 011	R1 000 011
Ward 29	R699 929	R699 929	R699 929	R699 929	R710 883	R710 883
No Intersect	R64 424	R64 424	R38 655	R675 678	R672 020	R672 020
Ward 25	R50 940	R50 940	R50 940	R50 940	R50 940	R50 940
Ward 1	R23 894	R2 735	R2 735	R2 735	R29 819	R29 819
Ward 34	R1 387	R1 387	R109 593	R66 311	R1 391	R1 391
Ward 10	R0	R0	R101 558	R60 935	R0	R0
Ward 15	R16 739	R16 739	R16 739	R16 739	R16 739	R16 739
Ward 12	R10 304	R10 304	R27 398	R20 560	R10 304	R10 304
Ward 6	R0	R0	R0	R10 922	R10 922	R10 922
Ward 5	R7 137	R7 137	R7 137	R11 579	R11 579	R11 579
Ward 22	R10 993	R10 993	R8 682	R5 209	R0	R0
Ward 31	R5 839	R5 839	R5 839	R5 839	R5 839	R5 839
Ward 11	R0	R0	R0	R0	R0	R0
Ward 33	R0	R0	R0	R0	R0	R0

Table 5-8: 2023/24 - 2032/33 Total Planned Capital Expenditure per Wards continued

Wards	2029/2030	2030/2031	2031/2032	2032/2033	Total	%
Ward 7	R95 975 772	R95 975 772	R95 975 772	R95 975 772	R743 830 405	19%
Ward 8	R71 226 544	R46 226 544	R46 226 544	R46 226 544	R487 835 810	13%
Ward 9	R0	R0	R0	R0	R428 451 945	11%
Ward 19	R20 789	R0	R0	R0	R399 559 677	10%
Ward 21	R23 285 026	R23 285 026	R19 951 693	R0	R334 251 899	9%
City Wide	R0	R0	R0	R0	R329 876 538	9%
Ward 2	R20 408 735	R20 408 735	R20 408 735	R20 408 735	R205 334 615	5%
Ward 28	R27 877 992	R38 377 992	R4 266 881	R4 266 881	R156 245 016	4%
Ward 3	R29 904	R29 904	R29 904	R29 904	R96 842 840	2%
Admin HQ	R0	R0	R0	R0	R91 149 000	2%
Ward 20	R8 582 135	R1 156 782	R12 338	R0	R86 295 097	2%
Ward 27	R874	R874	R874	R874	R82 326 683	2%
Ward 14	R15 000 000	R10 000 000	R0	R0	R75 000 000	2%
Ward 18	R2 444 444	R2 444 444	R2 444 444	R0	R72 449 636	2%
Ward 4	R7 387 986	R7 387 986	R7 387 986	R7 387 986	R52 412 739	1%
Ward 24	R7 001	R7 001	R7 001	R7 001	R49 442 791	1%
Ward 23	R0	R0	R0	R0	R46 425 223	1%
Ward 26	R29 484	R29 484	R29 484	R29 484	R39 172 420	1%
Ward 30	R0	R0	R0	R0	R35 000 000	1%
Ward 16	R861 603	R111 603	R111 603	R0	R26 254 430	1%
Ward 17	R2 463 182	R2 463 182	R18 738	R0	R19 740 595	1%
Ward 13	R1 000 011	R11	R11	R11	R7 059 548	0,2%
Ward 29	R699 843	R699 843	R10 954	R10 954	R5 643 073	0,1%
No Intersect	R650 832	R650 832	R650 832	R650 832	R4 790 551	0,1%
Ward 25	R0	R0	R0	R0	R305 642	0,01%
Ward 1	R29 819	R29 819	R29 819	R29 819	R211 012	0,01%
Ward 34	R5	R5	R5	R5	R181 479	0,005%
Ward 10	R0	R0	R0	R0	R162 493	0,004%
Ward 15	R16 739	R16 739	R16 739	R0	R150 655	0,004%
Ward 12	R9 829	R9 829	R9 829	R9 829	R128 488	0,003%
Ward 6	R10 922	R10 922	R10 922	R10 922	R76 457	0,002%
Ward 5	R4 442	R4 442	R4 442	R4 442	R73 918	0,002%
Ward 22	R0	R0	R0	R0	R35 878	0,001%

Wards	2029/2030	2030/2031	2031/2032	2032/2033	Total	%
Ward 31	R0	R0	R0	R0	R35 034	0,001%
Ward 11	R0	R0	R0	R0	R0	0%
Ward 33	R0	R0	R0	R0	R0	0%



Long Term Financial Model

6 Long Term Financial Model

6.1 Contextualisation

The purpose of this section is to provide the results obtained from the preparation of the independent financial assessment and the long-term financial model so as to inform the CEF.

The objective of a Long-Term Financial Strategy is to recommend strategies and policies that will maximise the probability of the municipality's financial sustainability into the future. Based on the municipality's historic performance and the environment in which it operates, future cash flows and affordable capital expenditure is forecast utilising a long-term financial model.

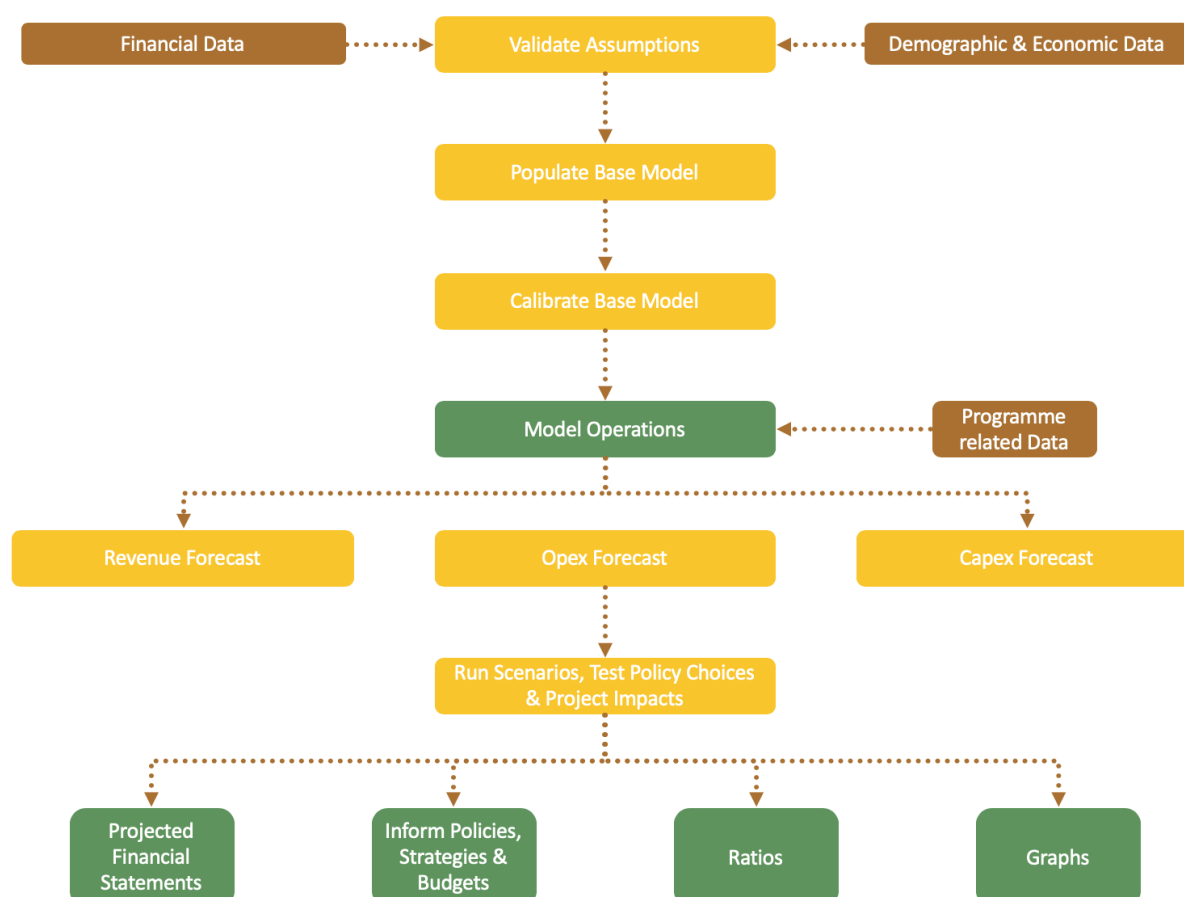
The main outcome of the Long-Term Financial Strategy, for the purposes of this report, is to determine the affordable future capital expenditure and proposed capital funding mix (affordability envelope) of the municipality over the next 10-years.

The forecast 10-year affordability envelope and proposed capital funding mix is presented in Chapter 7.

6.2 Financial model high-level outline

The long-term financial model used for this section has been populated with the latest information of Mogale City Local Municipality and is utilised in presenting a base case financial forecast. Figure 6-1 illustrates the outline of the model.

Figure 6-1: Long Term Financial Model



6.2.1 Financial model detailed elements

The Long-term financial model requires input of reliable data and reasonable assumptions. The data and key assumptions utilised in the model are mainly informed by an independent financial assessment, which entails:

- A historic demographic-, economic- and household infrastructure perspective, which was based on the latest available information as published by S&P Global Market Intelligence;
- A historic financial analysis updated with the information captured in the municipality's audited annual financial statements for the financial year ended 30 June 2022;
- The 2023/24 to 2025/26 tabled budget and associated worksheets data, and;
- Information gathered from market research, other strategic documents of the municipality (including the IDP, master plans etc), from experience gained in the sector and other relevant sources.

The outcomes of the independent financial assessment and the key assumptions made, are discussed in section 6.3. section 6.4 provides an overview of a selection of forecast outcomes from the long-term financial model which are considered in the long-term financial strategy of Mogale City Local Municipality. These forecasts also inform, and form part of the affordability envelope presented in Chapter 7.

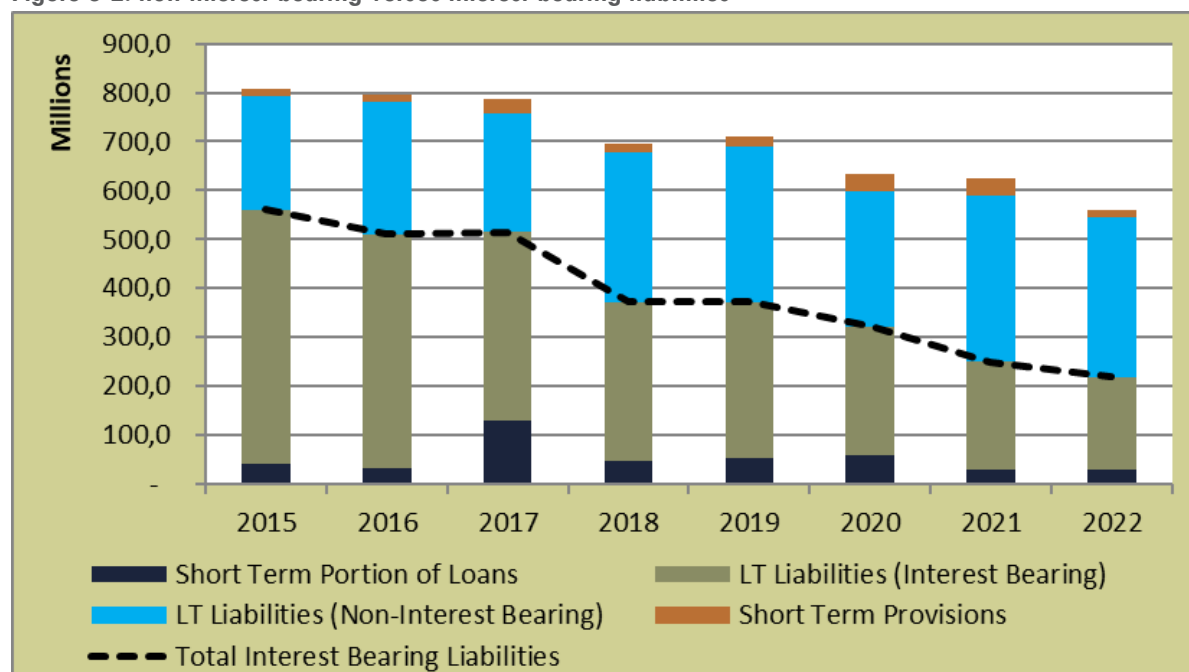
6.3 Historical financial perspective

6.3.1 Financial position

Mogale City's balance sheet reflected a total asset position of R7.29 billion as at FYE2022. This represents an increase of 10.6% since FYE2015, at which point it totalled R5.98 billion.

Mogale City's gearing ratio has consistently declined over the past 8 years, reaching a low of just 7% at the current year end. This, along with a positive debt cover ratio (cash generated from operations/debt service) of 1.95, would indicate that scope exists to accelerate funding from external borrowings. The qualified audit opinion issued by the Auditor General regarding the most recent financials, may prove a hindrance. Total interest-bearing liabilities reduced further during the year, totalling R219.2 million as at FYE2022, following R250.2 million at the prior year end.

Figure 6-2: non-interest-bearing versus interest-bearing liabilities



a. Current liabilities

Current liabilities amounted to R1.34 billion as at FYE2022, a significant increase from R1.26 billion at the prior year end. This movement was mainly due to an increase of R261.5 million in creditors and despite substantial decreases in unspent conditional grants and short-term provisions.

Creditors remain the predominant contributor to current liabilities (91%) and totalled a substantial R1.34 billion as at FYE2022, a significant increase of 24.1% from FYE2021.

Figure 6-3: Current liabilities total

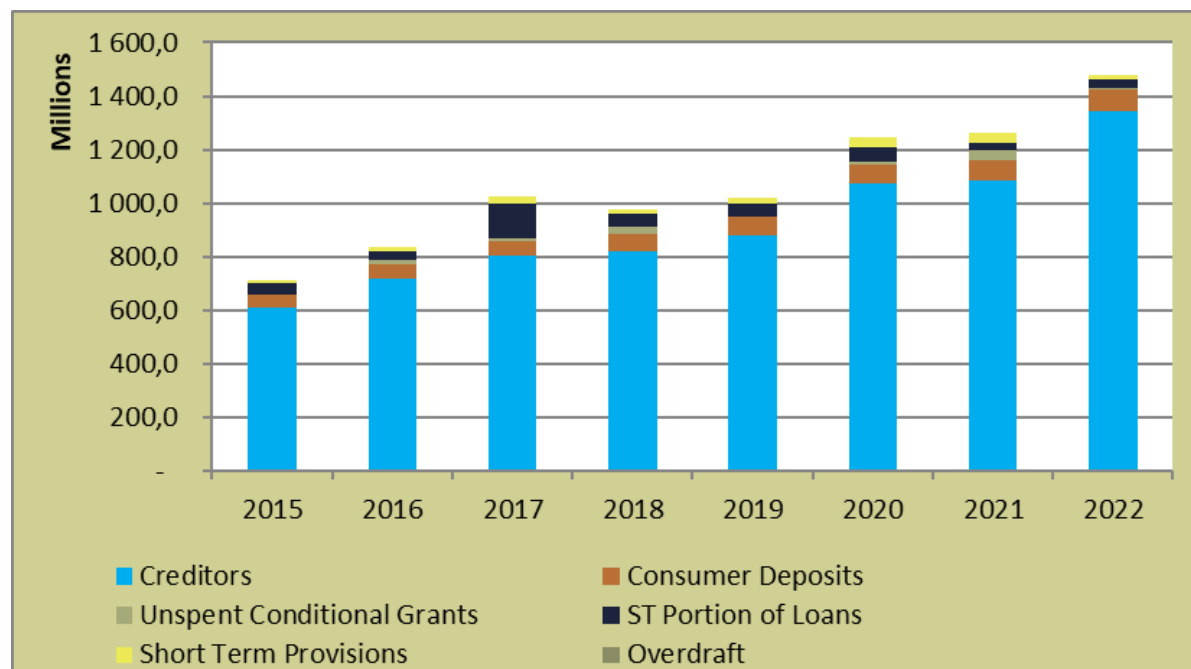
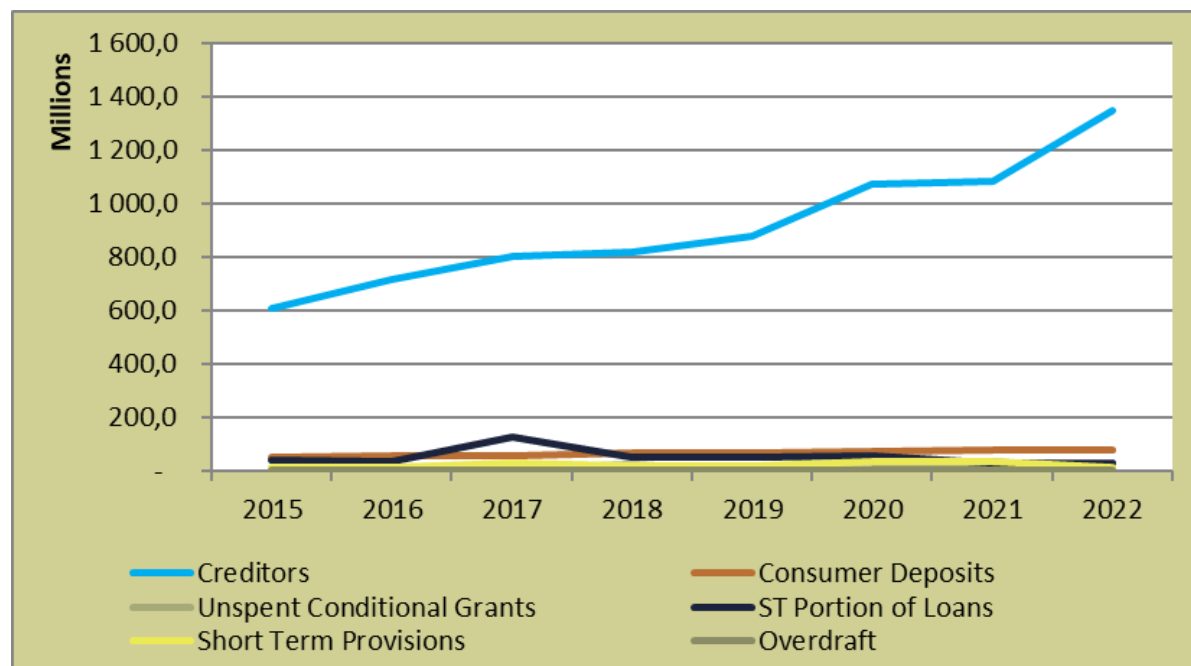


Figure 6-4: Current liabilities by item



b. Current assets

Current assets increased by a significant 21.6% to R911.3 million as at FYE2022. This figure has increased by 94.3% since FYE2018. The current year increase was driven by a substantial increase in cash and cash equivalents,

attributable to improved cash generation during the year. It must be noted that the improvement in cash generation must be considered against the increase in the creditors balance. In light of the significant increases in creditors, which suggests weak working capital management, the cash generation of the municipality appears to be weak and unsustainable.

Net consumer debtors increased by 27.7% to R378.4 million as at FYE2022. Total current assets are represented by consumer debtors (42%), other debtors (43%) and cash and cash equivalents (15%).

Figure 6-5: Current assets total

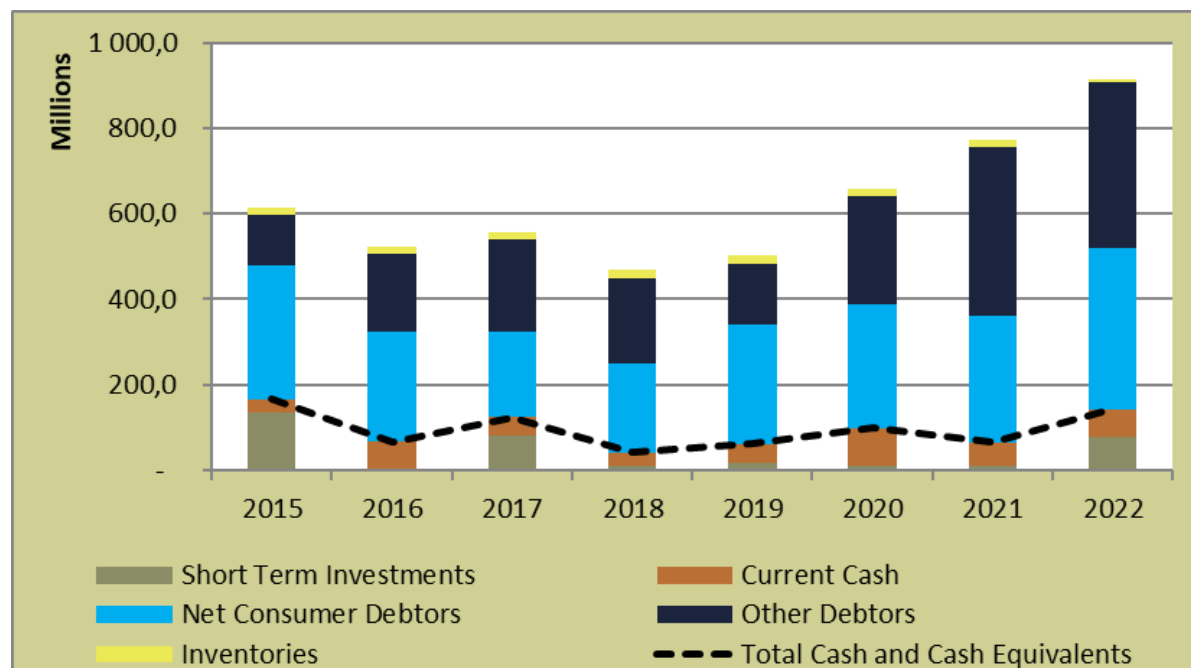
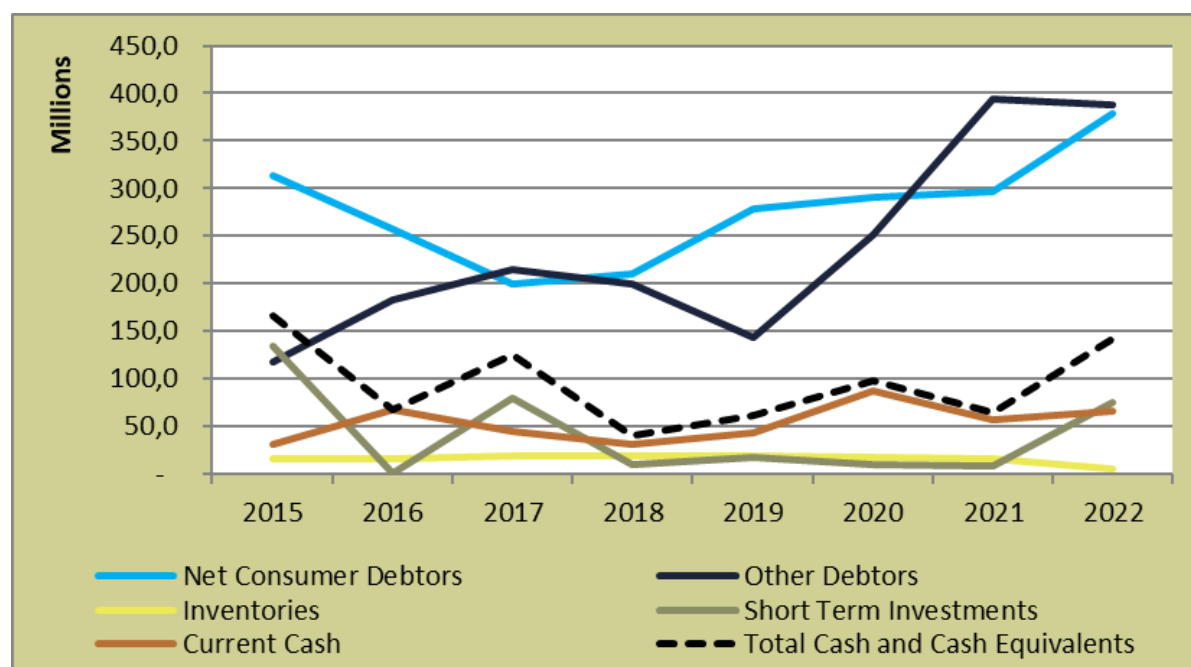


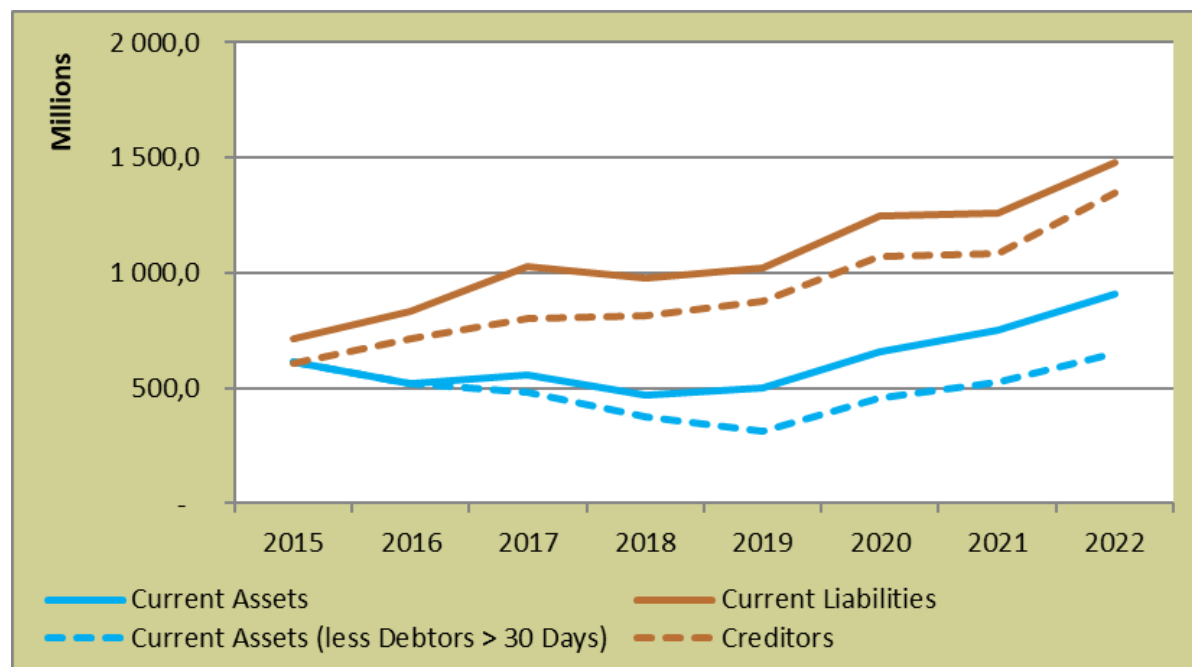
Figure 6-6: Current assets by item



c. Liquidity ratio

Mogale City's liquidity position remains weak, with a liquidity ratio of 0.62:1 as at FYE2022. It is mildly positive to note that the liquidity position is trending in the right direction, with marginal improvements noted in each year since FYE2018. The ratio, however, weakens further to 0.44:1 when debtors older than 30 days are excluded. Healthy liquidity levels are critical for long-term sustainability and the improvement of this ratio must be prioritised. Improving the ratio to 1:1 is a good starting point, once this has been achieved a target ratio of 2:1 is considered healthy.

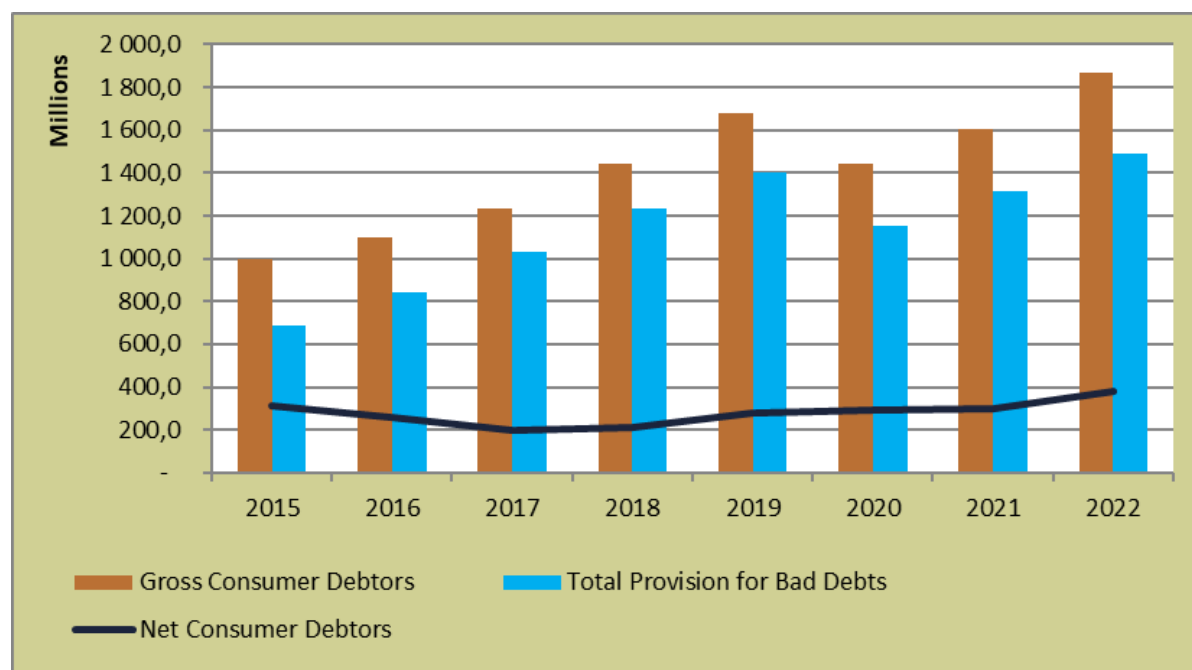
Figure 6-7: Current assets versus current liabilities



d. Net consumer debtors

Net Consumer Debtors reflected an increasing trend since FYE2017, reaching a review period high of R378.4 million as at FYE2022. Gross Consumer Debtors reflected an increasing trend between 2015 and 2019, before reducing to R1.44 billion as at FYE2020. It has since increased to R1.86 billion as at FYE2022. The provision for doubtful debts increased by R176.8 million to a total of R1.48 billion as at FYE2022.

Figure 6-8: Customer debtors

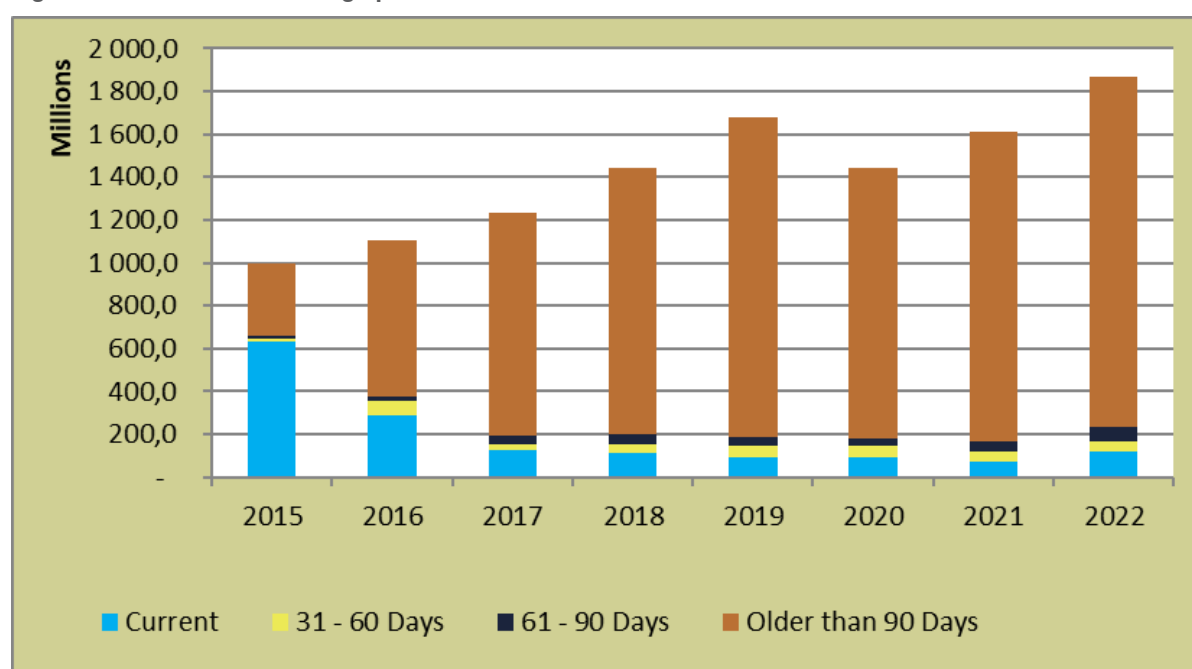


e. Debtors age profile

Analysis of the Debtors Age Profile reveals that debtors older than 90 days remain the largest pool of debtors, representing 87.4% of consumer debtors as at FYE2022. The provision for doubtful debt is insufficient to cover debtors older than 90 days, indicating a risk of future impairment and write off. Current debtors constitute just 6.4% of consumer debtors.

The collection rate deteriorated during the year, reducing to 87% as at FYE2022. This is low relative to the National Treasury norm of 95% and priority must be given to improving collection procedures. Effective and efficient collection procedures and the implementation thereof are essential for long-term financial sustainability. A collection rate of a minimum of 95% is considered healthy and, in the case of Mogale City, achievable, considering the review period average of 92%.

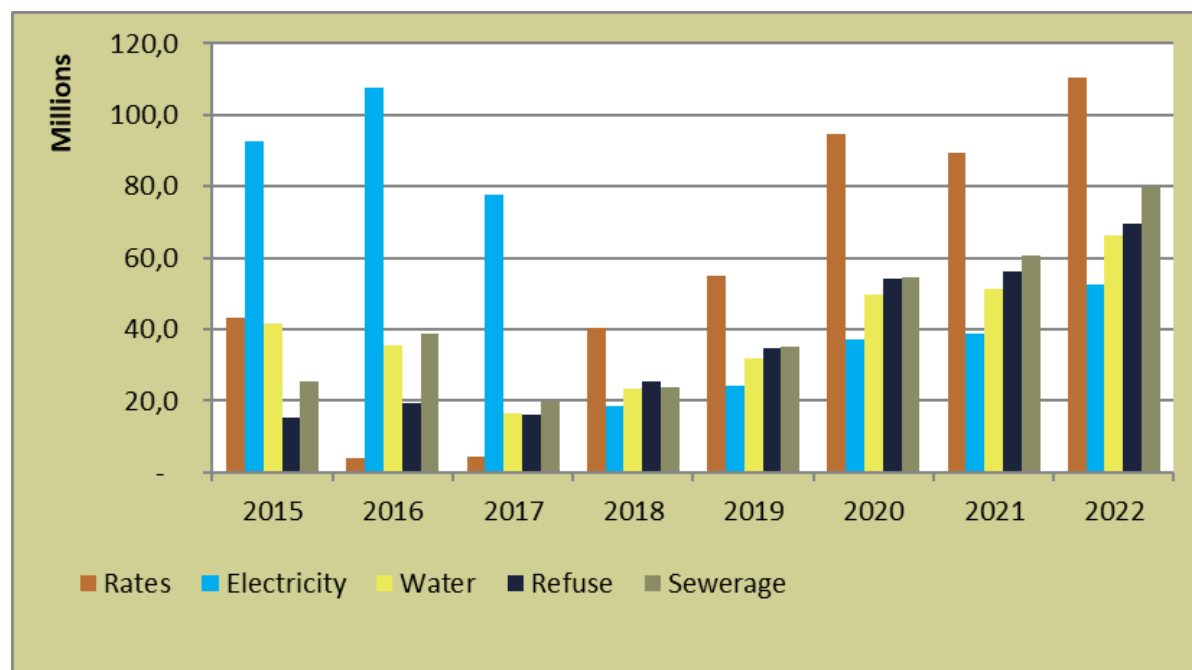
Figure 6-9: Customer debtor age profile



f. Consumer debtors by type

Property rates debtors remain the largest pool of consumer debtors, accounting for 29.2% of net consumer debtors. Property rates debtors increased by R21.1 million to a total of R110.5 million as at FYE2022. Sewerage debtors (21.0%), refuse debtors (18.4%) and water debtors (17.5%) also contribute significantly. Interestingly, electricity debtors contribute least to net consumer debtors, with a total of just R52.4 million as at FYE2022. As illustrated in Figure 6-11, there has been a notable shift in this regard since 2018.

Figure 6-10: Customer debtors by type

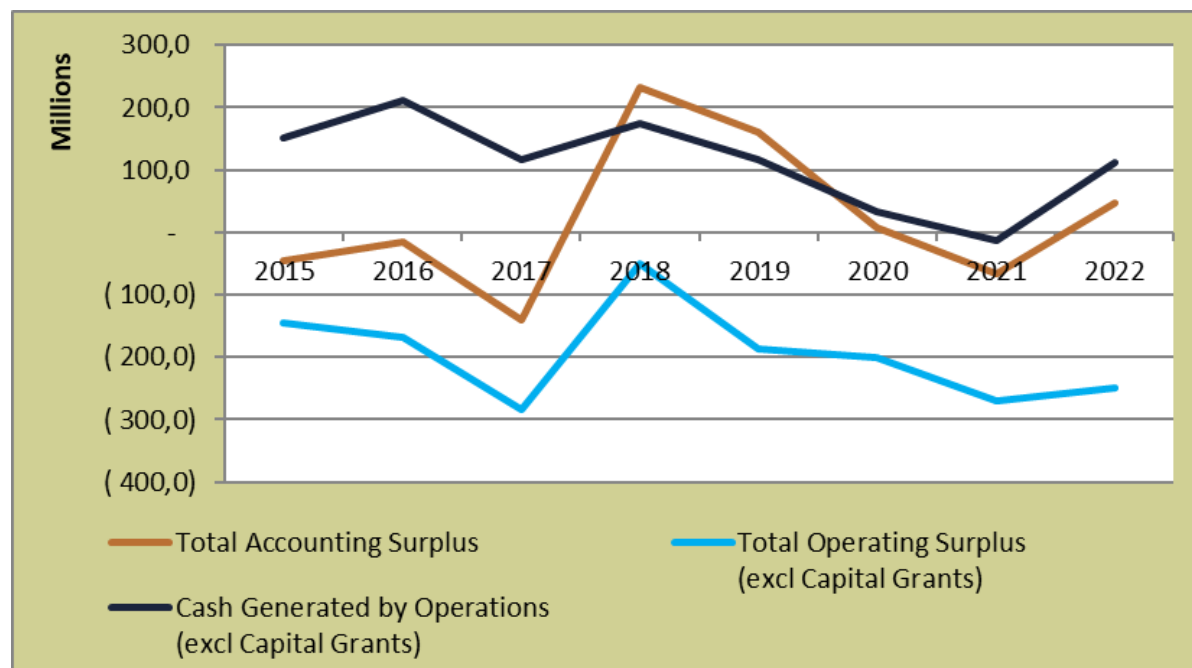


6.3.2 Financial performance

During FY2022, Mogale City posted an accounting surplus of R46.2 million, compared to the deficit of R65.2 million posted in the prior year. Upon the exclusion of capital grants, the municipality posted an improved operating deficit of R249.2 million, compared to R269.2 million posted in the prior year. Operating deficits have been posted throughout the review period. This suggests that the movement into an accounting surplus is largely attributable to an increase of R91.4 million in capital grants received, rather than significant improvements in financial performance.

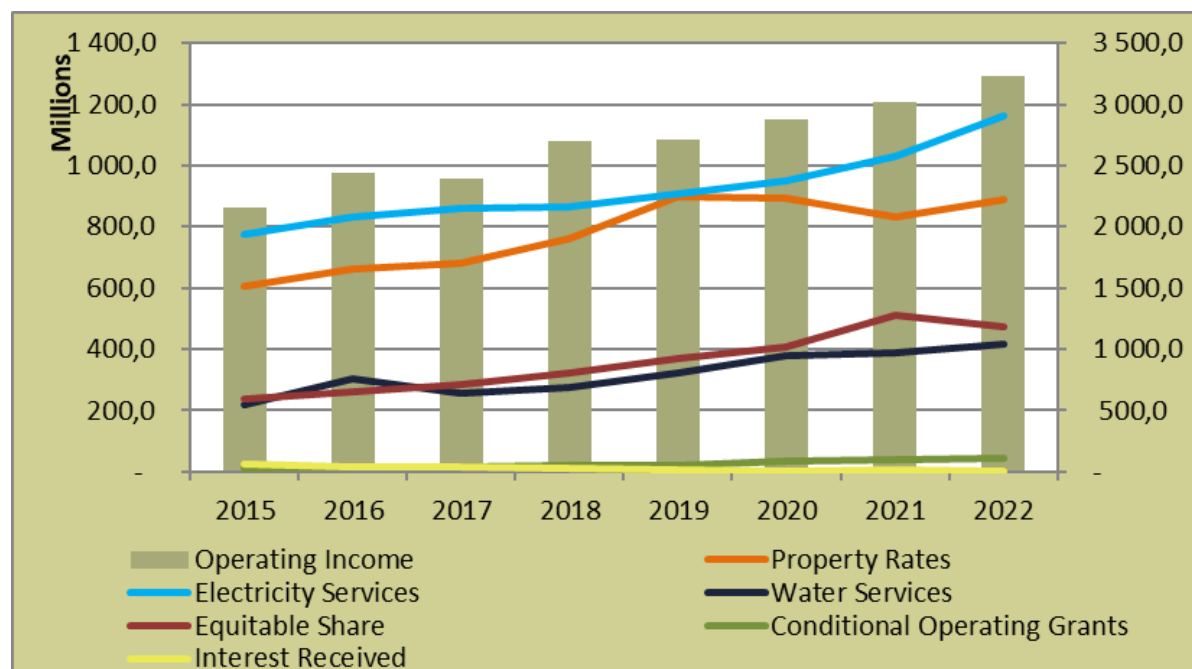
Cash generated from operations (exclusive of capital grants) increased significantly to a total of R112.1 million in FY2022, following cash utilised from operations of R12.2 million in the prior year. As alluded to previously, this improvement must be considered against the increase in creditors. The non-payment of creditors is not a sustainable practice, as payment will be due at some point and the risk of additional finance charges is increased significantly.

Figure 6-11: Analysis of surpluses and deficits

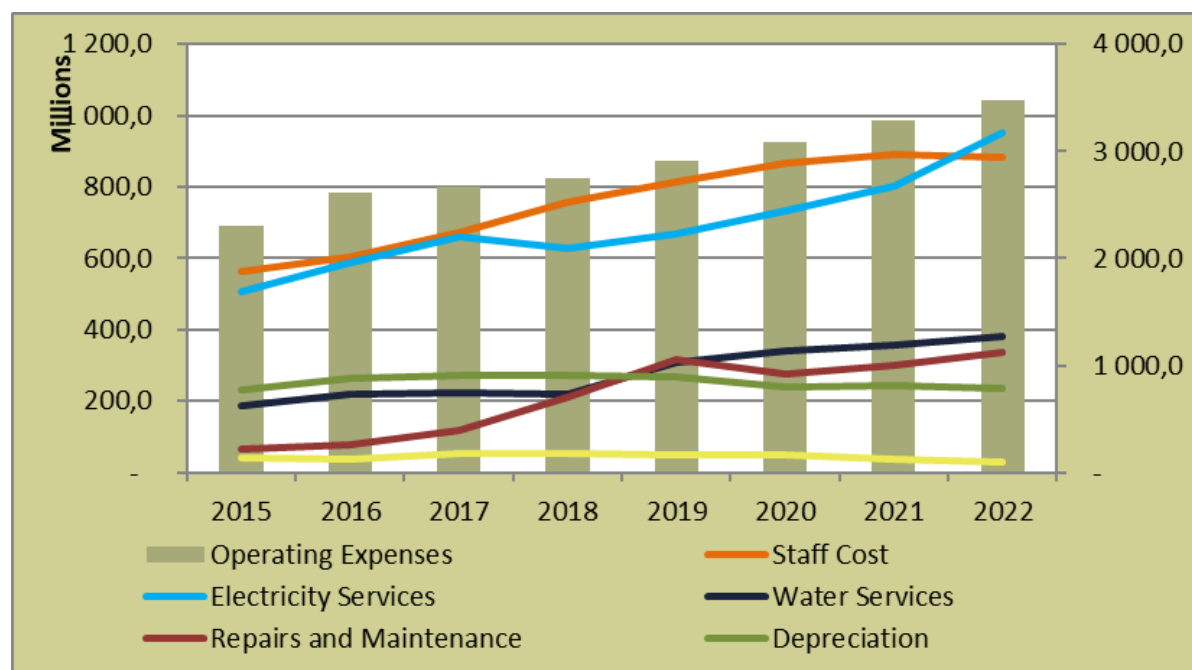


Electricity Services remains the predominant income contributor, representing 36% of total operating income, followed by property rates income that represents 28%. Equitable share and water services income are also important drivers of operating income, with a combined contribution of 28%.

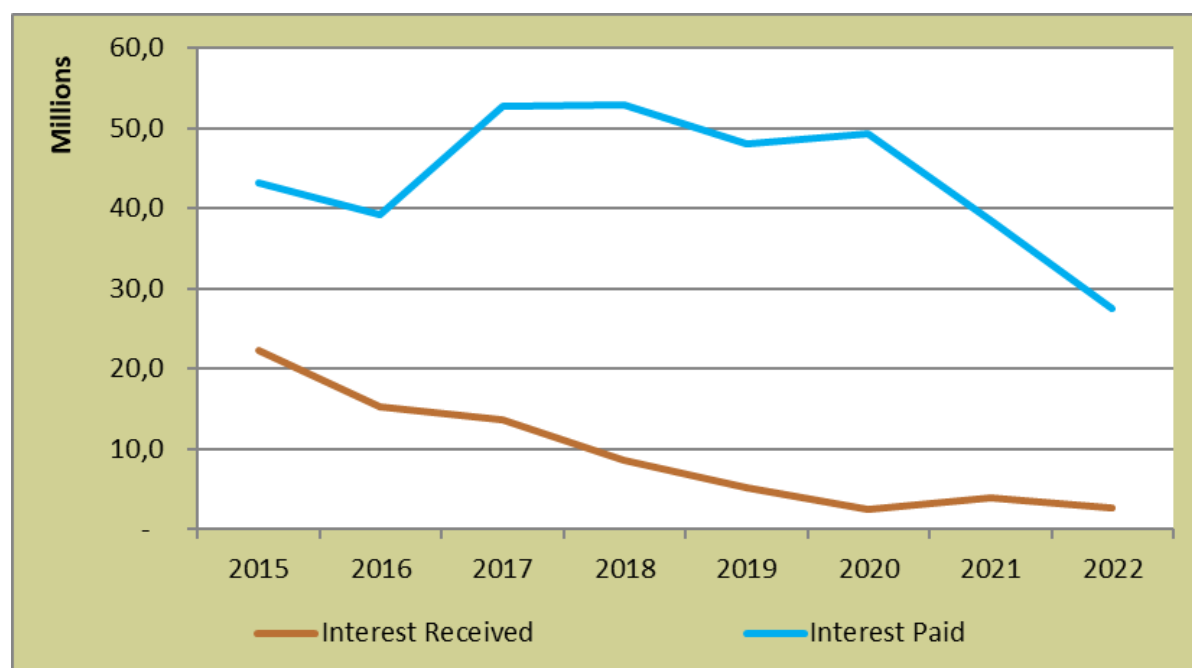
Figure 6-12: Operating income by source



Staff cost (including remuneration to councillors) constituted 23% of total operating expenditure in FY2022, a decrease from 26% in the prior year. This remains below the National Treasury maximum norm of 40%. Electricity bulk purchases increased substantially by R148.2 million during FY2022, to a total of R952.2 million. This renders electricity bulk purchases the main driver of total operating expenditure.

Figure 6-13: Operating expenditure by item


Interest paid on external borrowings exceeded interest received from external investments throughout the assessment period. Interest paid on external borrowings has declined significantly since FY2020. This, coupled with the debt service to total expense ratio of just 2%, confirms the conservative nature of Mogale City's debt profile.

Figure 6-14: Interest received versus interest paid

Table 6-1: Operating income by source

Source	2015	2016	2017	2018	2019	2020	2021	2022
Property Rates	603,2	662,6	679,2	760,7	898,7	895,0	832,6	888,3
Electricity Services	775,1	834,6	862,2	863,8	909,3	951,3	1 029,0	1 163,8
Water Services	216,6	302,2	258,3	273,7	322,7	379,5	388,6	414,3
Equitable Share	238,6	259,2	285,5	323,9	369,8	408,1	511,6	471,8
Conditional Operating Grants	12,1	13,6	13,4	18,6	20,1	35,8	40,2	44,0
Interest Received	22,3	15,3	13,6	8,5	5,1	2,5	3,9	2,6

Source	2015	2016	2017	2018	2019	2020	2021	2022
Operating Income	2 159,9	2 445,0	2 389,3	2 699,1	2 717,4	2 882,8	3 021,7	3 226,4

Table 6-2: Operating expenditure by item

Item	2015	2016	2017	2018	2019	2020	2021	2022
Staff Cost	561,8	605,9	672,0	759,4	814,1	867,0	891,7	884,4
Electricity Services	508,5	586,2	660,8	629,1	667,5	734,2	804,3	952,5
Water Services	188,3	220,4	223,4	220,9	306,9	339,7	356,5	382,6
Repairs and Maintenance	66,6	77,6	119,4	212,3	315,1	274,1	301,6	338,4
Depreciation	229,6	262,6	273,8	270,5	268,2	241,6	245,6	235,0
Interest Expense	43,1	39,2	52,7	53,0	48,0	49,4	38,5	27,5
Operating Expenses	2 304,7	2 612,9	2 673,1	2 749,8	2 904,3	3 083,3	3 290,9	3 475,6

6.3.3 Cash flow

Mogale City LM generated R112.1 million in cash from operations during FY2022. The generation of cash should significantly strengthen the liquidity position of the municipality. Weak working capital management and non-payment of creditors are, however, impacting negatively on the liquidity situation.

The capital investment programme amounted to R2.54 billion over the 8-year review period. This has primarily been funded by capital grants (68%) and cash reserves (21%). The utilisation of own cash resources to fund capex has declined in recent years. No borrowing has been undertaken since FY2016.

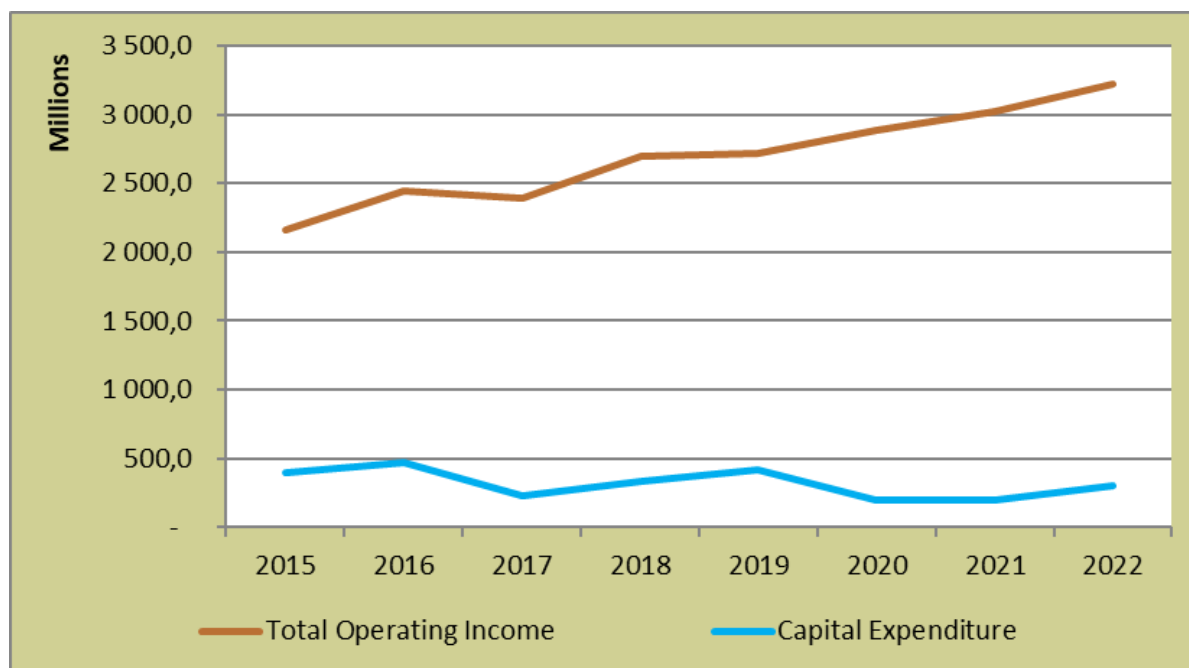
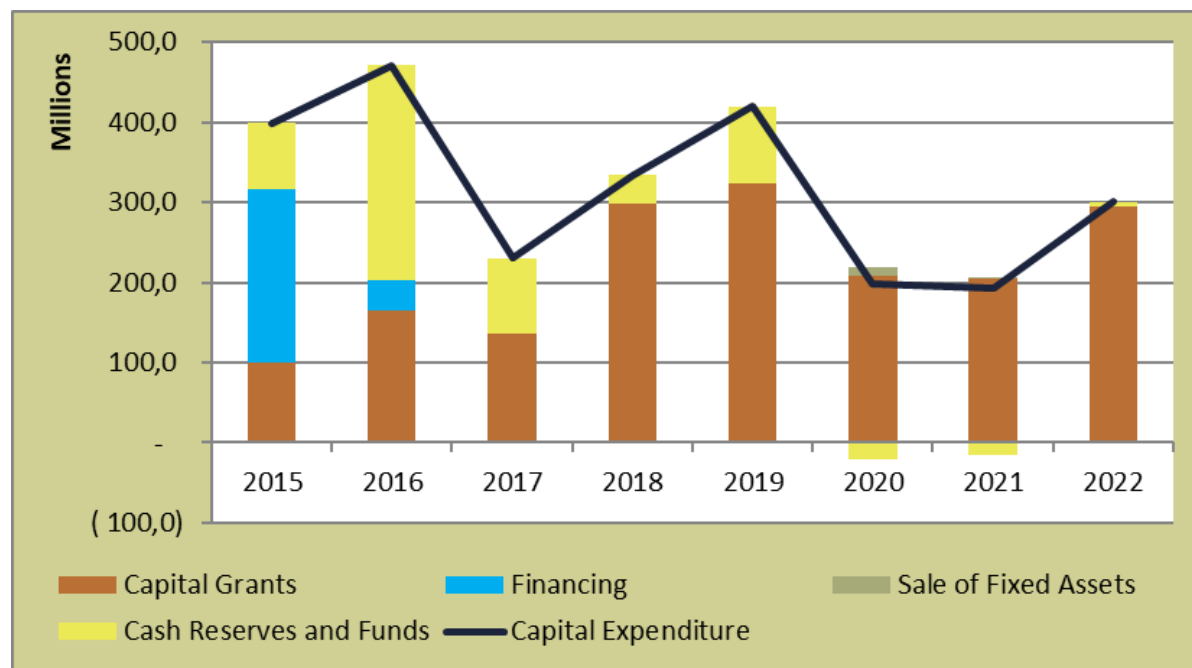
Figure 6-15: Total operating income versus capital expenditure


Figure 6-16: Capital funding mix



Cash and cash equivalents increased significantly during FY2022, to a total of R141.8 million as at FYE2022. Unencumbered cash is insufficient to cover the minimum liquidity requirements which include unspent conditional grants of R6.9 million, short-term provisions of R14.8 million and 1-month's operational expenditure as a working capital provision of R246.0 million, for a total of R267.7 million. Mogale City LM posted a cash shortfall of R126.4 million as at FYE2022, continuing the trend of shortfalls noted throughout the review period. There is currently no provision for a cash backed CRR.

Figure 6-17: Cash and investments

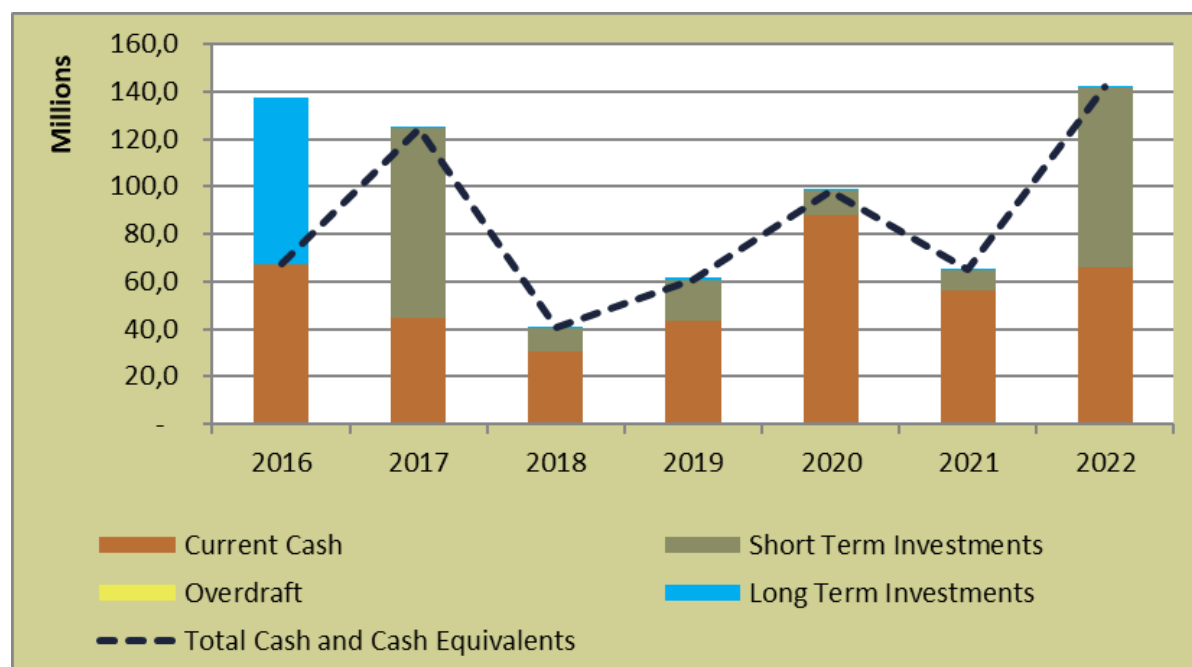
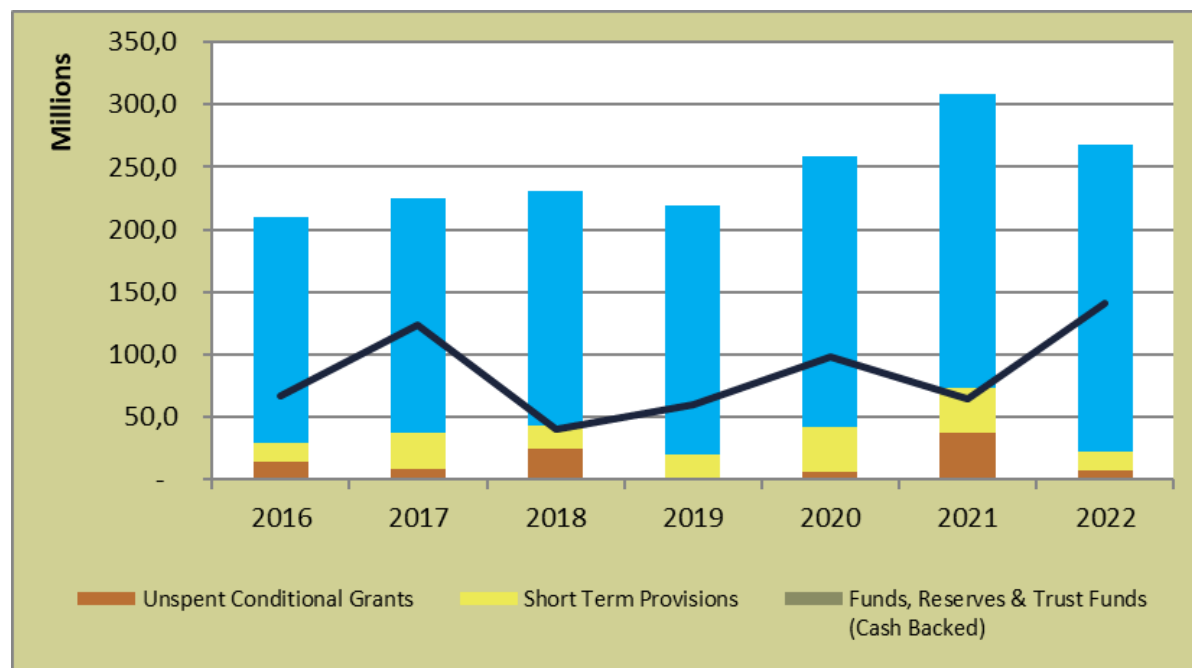


Figure 6-18: Minimum liquidity requirements



The cash coverage ratio (including working capital) remained below 1, at 0.5 at FYE2022. This represents the highest ratio achieved since 2018.

Table 6-3: Minimum liquidity requirements

Items	2015	2016	2017	2018	2019	2020	2021	2022
Unspent Conditional Grants	-	14,1	8,9	24,3	0,1	6,5	37,4	6,9
Short Term Provisions	14,1	15,3	28,3	18,5	19,5	35,9	35,6	14,8
"Funds, Reserves & Trust Funds (Cash Backed)"	-	-	-	-	-	-	-	-
Total	14,1	29,3	37,1	42,9	19,6	42,3	73,0	21,7
Unencumbered Cash	165,4	66,8	123,9	39,9	60,2	97,8	64,4	141,3
Cash Coverage Ratio (excl Working Capital)"	11,7	2,3	3,3	0,9	3,1	2,3	0,9	6,5
"Working Capital Provision (1 Month's Opex)	153,9	180,3	187,3	188,0	199,1	216,4	235,9	246,0
Cash Coverage Ratio (incl Working Capital)"	1,0	0,3	0,6	0,2	0,3	0,4	0,2	0,5
Minimum Liquidity Required	168,0	209,7	224,4	230,9	218,7	258,8	308,9	267,7
Cash Surplus/(Shortfall)	(2,6)	(142,9)	(100,4)	(191,0)	(158,5)	(160,9)	(244,5)	(126,4)

6.3.4 Key findings

The following key findings are in relation to the historic financial analysis for the period 2015-2022:

- Mogale City Local Municipality generated cash from its operations to the value of R112.1 million in FY2022, but this is considered weak and unsustainable in light of the poor working capital management and increases in creditors;
- Creditors balances increased by R261.5 million in the last financial year;
- Financial performance improved moderately during FY2022, with a R20 million reduction in the operating deficit to R249.2 million;
- Collection rates are too low at 87% in FY2022, and revenue collection needs to be prioritised to support longer term financial sustainability;
- Liquidity remains an issue, with a weak liquidity ratio of 0.62:1 as at FYE2022;
- Gearing and debt service levels are low. It provides Mogale City Local Municipality with the opportunity to take up additional borrowing in future years, with the goal of preserving its own cash resources and accelerating its capital investment programme in productive assets;
- Obtaining competitive rates when approaching the external market may prove challenging in light of the qualified audit outcome received by Mogale City in FY2022. A clean audit outcome must be an absolute priority for the municipality.

6.3.5 Outcome of the independent financial assessment

Financial performance improved during FY2022, this is evident in the movement from an accounting deficit to a surplus of R46.2 million, with cash generated from operations of R112.1 million (excluding capital grants).

It must, however, be noted that the improvement in cash generation coincided with an increase of R261.5 million in the creditors balance, suggesting that poor working capital management is the main source of cash generation, which is weak and unsustainable. The liquidity position remains weak, evidenced by a liquidity ratio of 0.62:1.

The collection rate declined to 87% during FY2022, a significant decrease from 92% achieved in the prior year. This may be attributable to harsh economic conditions providing affordability challenges to the households in Mogale City LM. A collection rate in excess of 93% is critical for long-term financial sustainability.

Capital investment increased during FY2022, to a total of R300.5 million, an increase of 56.2% from the prior year. This was predominantly funded through capital grants (98%), with the remaining 2% funded from own cash. The capital budget implementation indicator came in at 83%, well below the NT norm of 95%. The total capital outlay over the past 8-years amounted to R2.54 billion.

A lack of new external borrowings since FY2016 has resulted in a low level of gearing of 7%. This, coupled with the healthy debt service cover ratio of 1.95 in FY2022, provides scope to accelerate the external borrowing programme. This will enable the municipality's cash resources to be preserved, whilst enabling the affordable acceleration of the capital investment programme.

- **Strengths**
 - Improvement in financial performance;
 - Low level of gearing and debt service requirements, providing scope for acceleration of borrowings.
- **Weaknesses**
 - Weak working capital management and unsustainable cash generation;
 - The collection ratio of 87% remained below the minimum acceptable benchmark of 95%;
 - Unhealthy liquidity ratio remained low at 0.62:1, with a cash shortfall of R126.4 million on its minimum liquidity requirements;
 - Significant increase in creditors balance of R261.5 million in FY2022;
 - Qualified audit outcome.

6.4 Outcome of the long-term financial model forecast

The forecast outcomes from the long-term financial model form the basis of formulating the long-term financial strategy of Mogale City Local Municipality. These forecasts also inform, and form part of the affordability envelope presented in Chapter 7.

6.4.1 Municipal revenue risk indicators

The latest S&P Global Market Intelligence Update of the Mogale City LM economy reveals that the average economic growth rate of 1.6% p.a. since 2013 is the highest of the municipalities in the West Rand District. The Tress Index of 51.79 is comparable to that of Rand West City LM (51.01) and is indicative of a reasonably concentrated economy. The lower the degree of economic diversification, the higher the risk associated with potentially harmful economic events. The combination of these 2 factors results in an Economic Risk component of the MRRI of "Medium to High".

Figure 6-19: MRRI: Economic risk

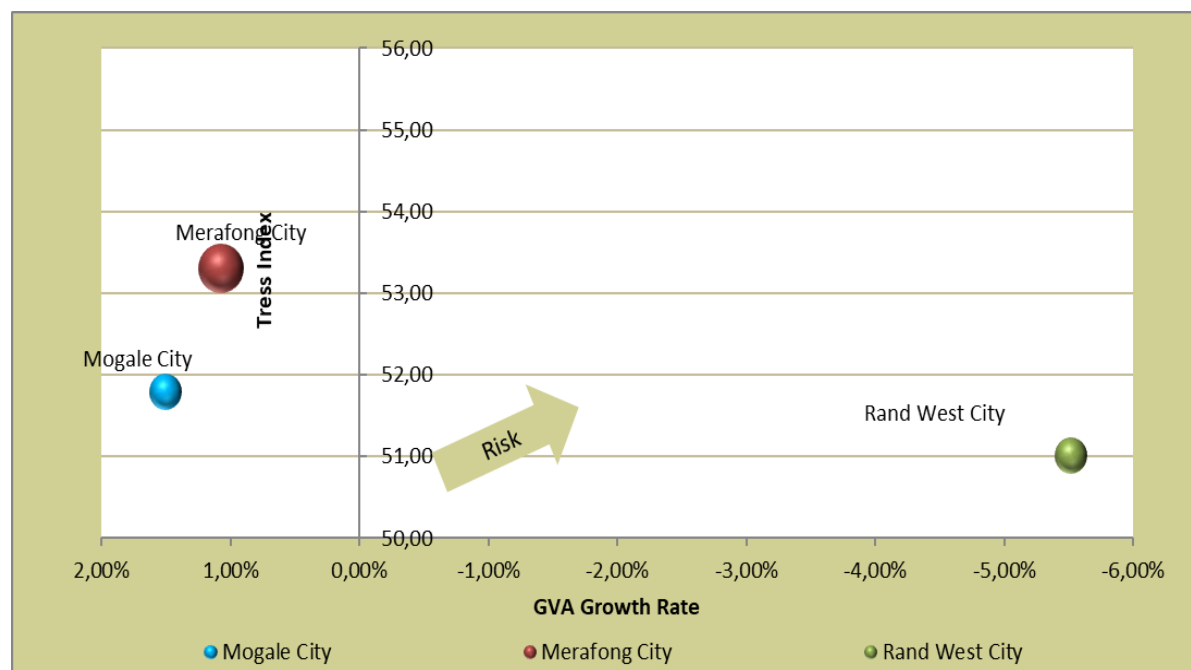
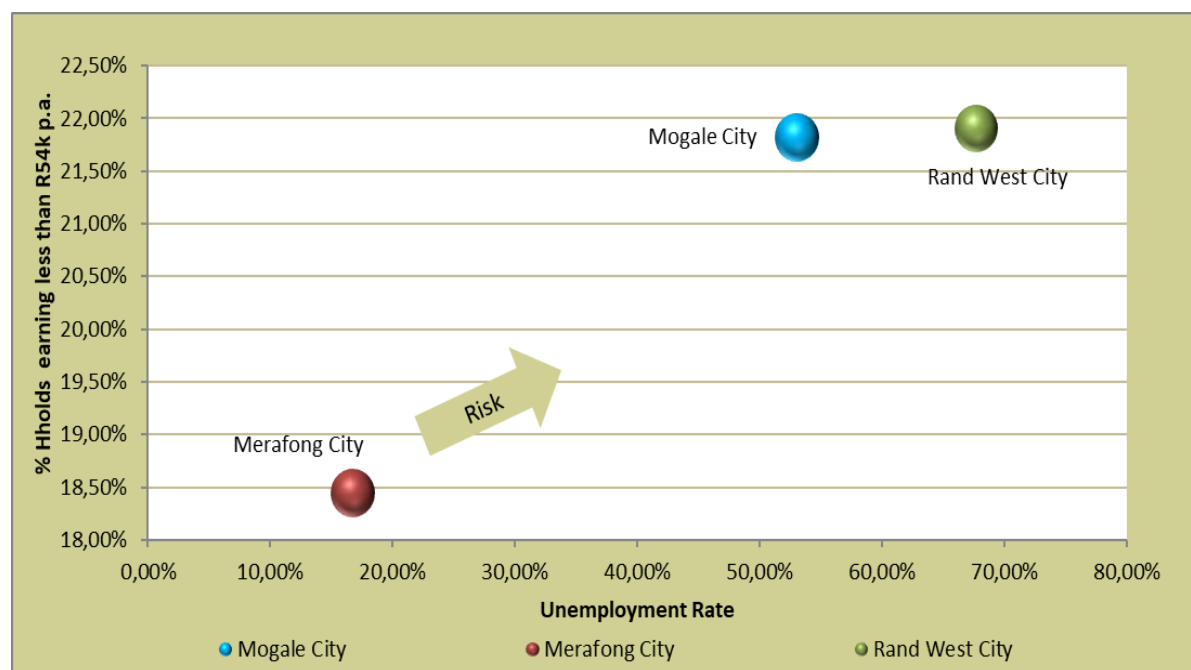


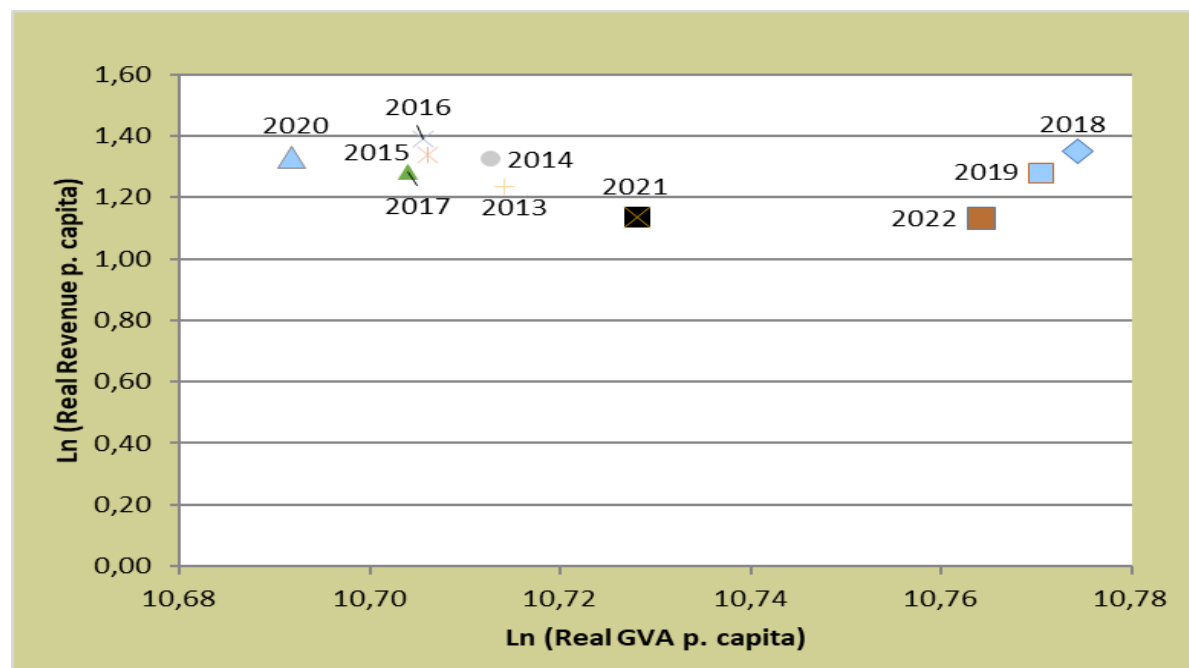
Figure 6-20 indicates the non-payment risk by plotting the percentage of households earning less than R54 000 per annum and the unemployment rate. The high unemployment rate of 53.0% provides a serious threat and the reasonably high percentage of indigent households reliant on support (21.8%), resulted in a “High” rating in the Household Ability to Pay component of the MRRI.

Figure 6-20: MRRI: Household ability to pay risk



As a result of the combined impact of the 2 MRRI components, the overall MRRI rating is “High”. This indicates that there is a high risk that the municipality will not be able to generate the forecast cash revenue expected in future.

Figure 6-21: : Historic real GVA per capita versus real revenue per capita

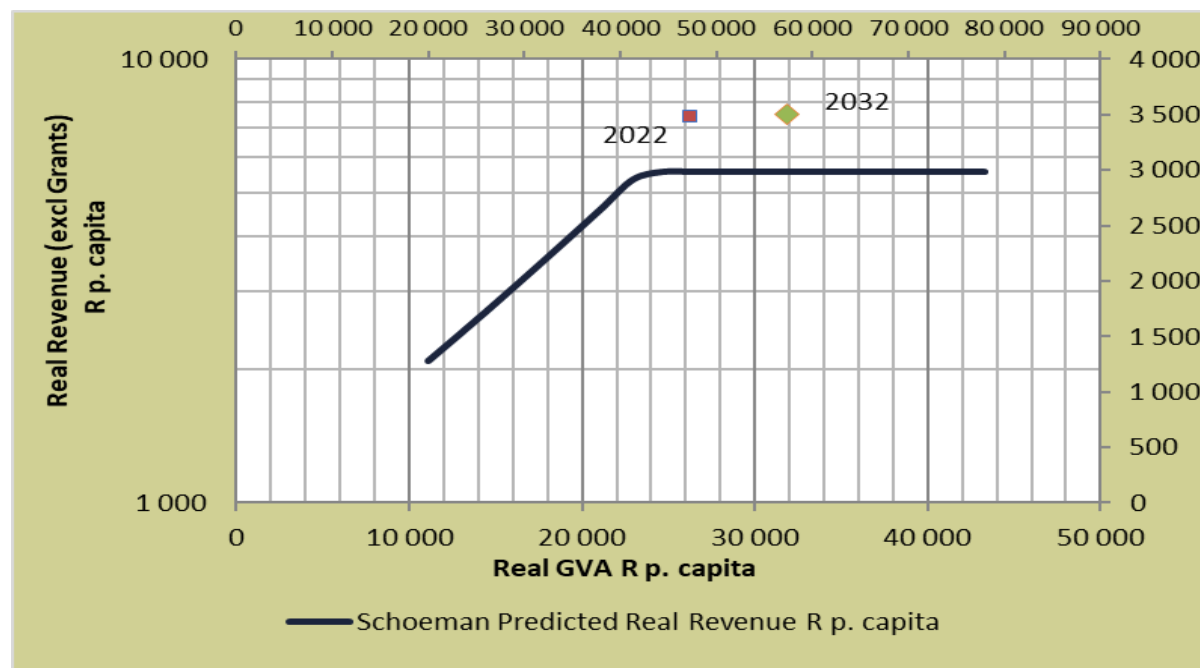


Noteworthy is the increase in real revenue per capita from 2013-2016, which has since declined. Real GVA per capita remained largely constant between 2013 and 2017, before increasing in 2018. A significant decline is noted in 2020, presumably due to the economic impact of Covid-19. It has since recovered to pre-pandemic levels. The significant decline in Real Revenue per capita is notable. The positive impact of economic growth would suggest an increase is possible, however, for this to occur, tariffs would need to be adjusted upwards. This is limited by households' ability to pay (MRRI). It is thus critical for tariffs to reflect the true cost of supply.

6.4.2 Municipal revenues and expenditure

In 2022, the Real Revenue per capita of R3 479 p.a. exceeded the expected amount as researched by Schoeman. The expectation is therefore that the Real Revenue per capita will return closer to its natural position by the end of the forecast period.

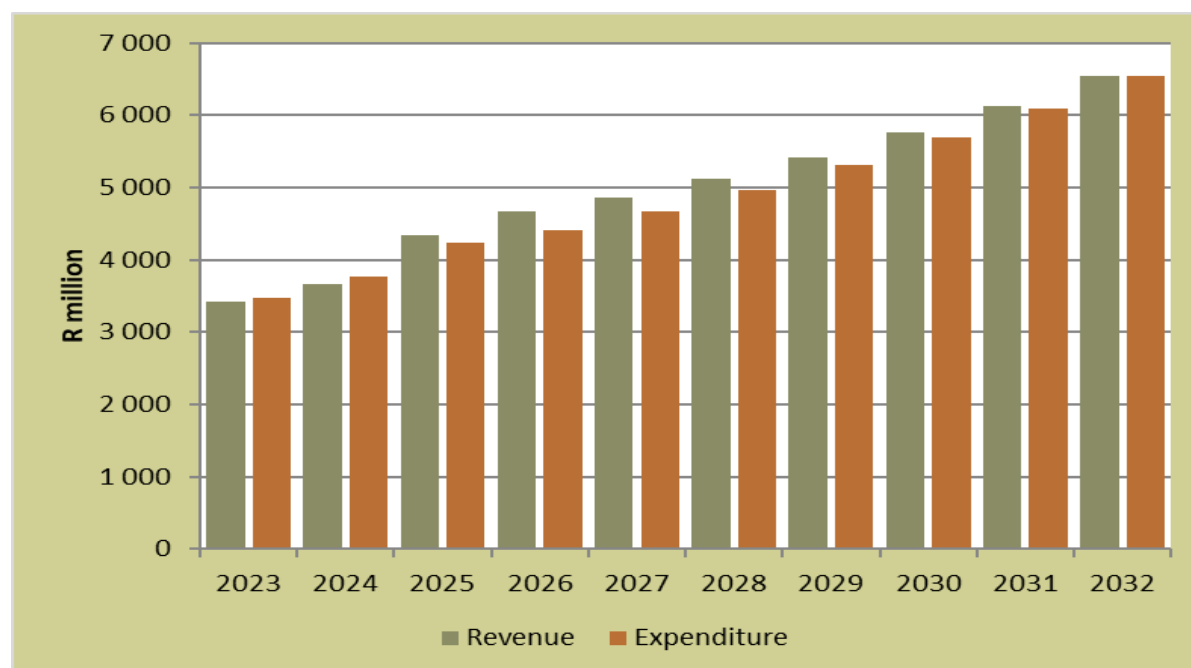
Figure 6-22: Real revenue per capita versus real GVA per capita



Future nominal revenue is forecast to grow at an annual average rate of 6.4% over the forecast period. The municipality is forecast to generate cash from operations as well as maintain a positive accounting surplus for the majority of the forecast period. Mogale City LM is forecast to post operating deficits (excluding capital grants) throughout the forecast period, resulting in an accumulated operating deficit of approximately R1.6 billion.

Improvements in revenue over the MTREF period are ascribed to (i) tariff increases, (ii) increased sales, (iii) additional revenue sources and importantly, (iv) an improvement in the collection rate to 90%. Financial performance is forecast to deteriorate for the remainder of the forecast period beyond the MTREF period. This is ascribed to comparatively higher growth in operating expenditure of 6.6% per annum. This notwithstanding, the maintenance of a collection rate of 90% results in forecast cash generated by operations of R1.6 billion over the forecast period.

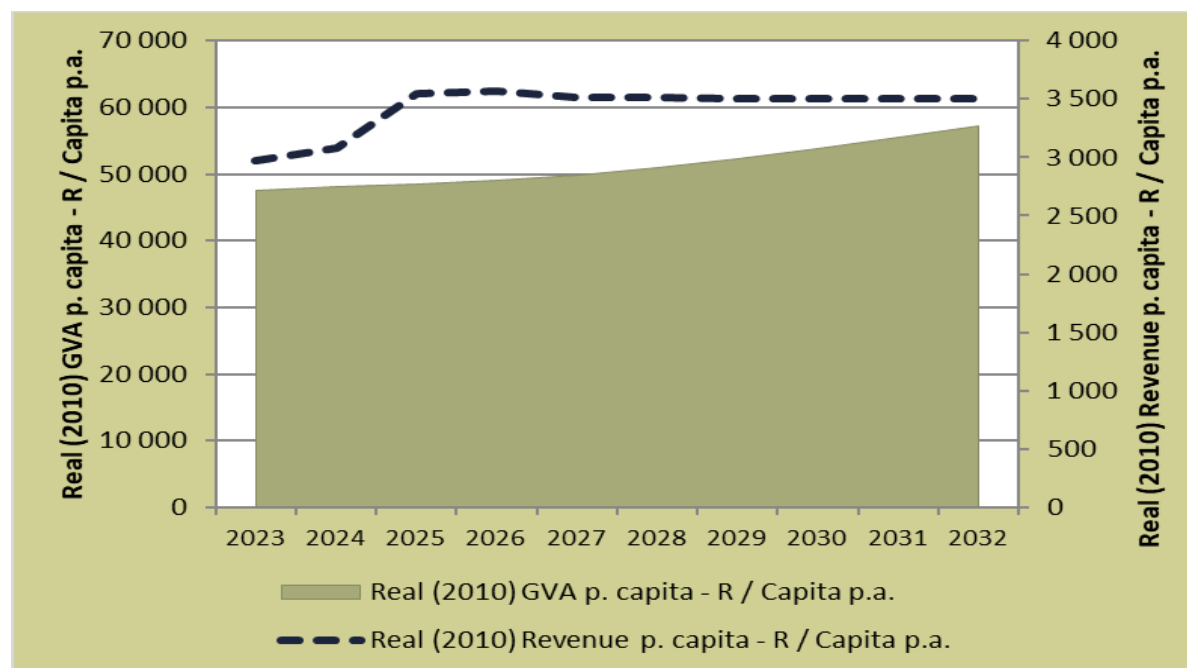
Figure 6-23: Revenue and expenditure



Mogale City LM cannot avoid the impact of national and provincial socio-economic conditions. Figure 6-25 below illustrates that Real Revenue per capita is forecast to increase until 2025, before remaining reasonably flat thereafter.

Real GVA per capita on the other hand, is forecast to experience gradual improvements over the forecast period. Real GVA per capita is forecast to grow at a faster rate than Real Revenue per capita. This is ascribed to an expectation for economic growth to exceed the population growth rate over the forecast period, this is, however, highly dependent on broader socio-economic conditions.

Figure 6-24: Real revenue per capital as a function of real GVA per capita



6.4.3 Long-Term Financial Model Outcomes

a. Base Case Scenario

To develop a realistic Base Case model, the figures from the Tabled Budget 2023/24-2025/26 were used. The historical analysis indicates a weak liquidity position, with sustained poor financial performance and cash generation, mainly due to poor working capital management resulting in significant increases in the creditors balance. Cash shortfalls on minimum liquidity requirements have been the norm.

Analysis of the Tabled Budget revealed that Mogale City has underestimated its budgeted operating expenditure in our view and, as such, certain line items were adjusted to reflect more realistic figures. It appears that the municipality has not factored loadshedding into its budgeted electricity revenue. A loadshedding impact scenario has thus been included in the Base Case. Water services, refuse removal services and sanitation services revenue were calibrated to the MTREF figures. The adjustments made in respect of operating expenditure items as well as the loadshedding impact scenario result in budgeted operating deficits, when capital grants are excluded.

The objective of the model is to utilise realistic assumptions to support future financial sustainability. The challenging and uncertain external environment creates risks for the municipality, as such, the assumptions were adjusted accordingly. The following are the key assumptions:

- The collection rate was assumed to increase to 90% over a period of 3 years, whereafter it is assumed to remain at this level.
- The capital investment programme was altered over the MTREF period. Capital expenditure is limited to capital grants received over the MTREF period, whereafter assumed annual growth is 7%.
- The capital funding mix was adjusted to include borrowing beyond the MTREF period. A total of R643 million in external borrowing was included for the period FY2028-FY2032. The borrowing in this scenario consists of 10-year amortising loans at a fixed interest rate of 6% above forecast CPI in any given year. External borrowing is assumed to be accessible based on an assumption of improved audit outcomes (unqualified audit opinion) and financial performance.

- Electricity losses are assumed to remain at the current level of approximately 12.5% throughout the forecast period. Water losses are assumed to reduce to 25% over a period of 5 years, whereafter it is assumed to remain at this level for the remainder of the forecast period.
- A loadshedding scenario was incorporated into the Base Case. This scenario assumes an average of stage 5 loadshedding for a period of 2 years from FY2022/23. This is assumed to result in an annual reduction of electricity consumption of 25.7%. Additionally, a 5% reduction of electricity sales due to consumers using alternative power sources, and a 5% reduction in water sales was included.

At these levels of borrowings, the debt profile of the municipality is forecast to remain affordable. This is reflected in the forecast period-end gearing ratio of 12.5% and debt service to total expenditure ratio of 1%. This would indicate that the municipality has the ability to further accelerate its external borrowing programme.

The bank balance is forecast to improve over the planning period, initially meeting the minimum required liquidity of 1-month's operating expenditure in FY2028, before increasing further for the remainder of the planning period. Financial performance is forecast to improve over the MTREF period. Operating deficits are forecast to be posted throughout the forecast period, with the exception of FY2026. Cash is forecast to be generated from FY2024 onwards. The forecast planning period-end liquidity position is considered adequate.

Table 6-4: Base Case Outcomes

Outcome	10-Year Outcome
Average annual % increase in Revenue	6,4%
Average annual % increase in Expenditure	6,6%
Accounting Surplus accumulated during Planning Period (Rm)	R 850
Operating Surplus accumulated during Planning Period (Rm)	-R 1 550
Cash generated by Operations during Planning Period (Rm)	R 1 490
Average annual increase in Gross Consumer Debtors	8,4%
Capital investment programme during Planning Period (Rm)	R 3 730
External Loan Financing during Planning Period (Rm)	R 643
Cash and Cash Equivalents at the end of the Planning Period (Rm)	R 724
No of Months Cash Cover at the end of the Planning Period (Rm)	1,5
Liquidity Ratio at the end of the Planning Period	1 : 1
Gearing at the end of the Planning Period	12,5%
Debt Service to Total Expense Ratio at the end of the Planning Period	1,0%

Figure 6-26: Base Case Scenario Analysis of Surplus

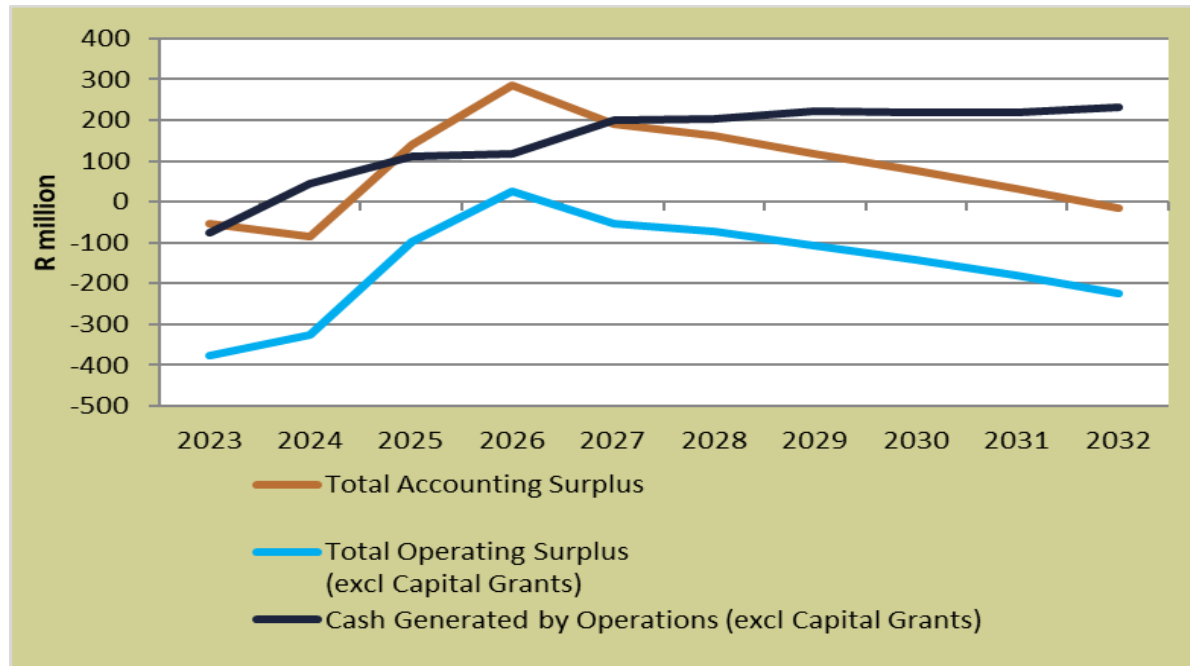


Figure 6-27: Base Case Scenario Bank Balance vs Minimum Liquidity

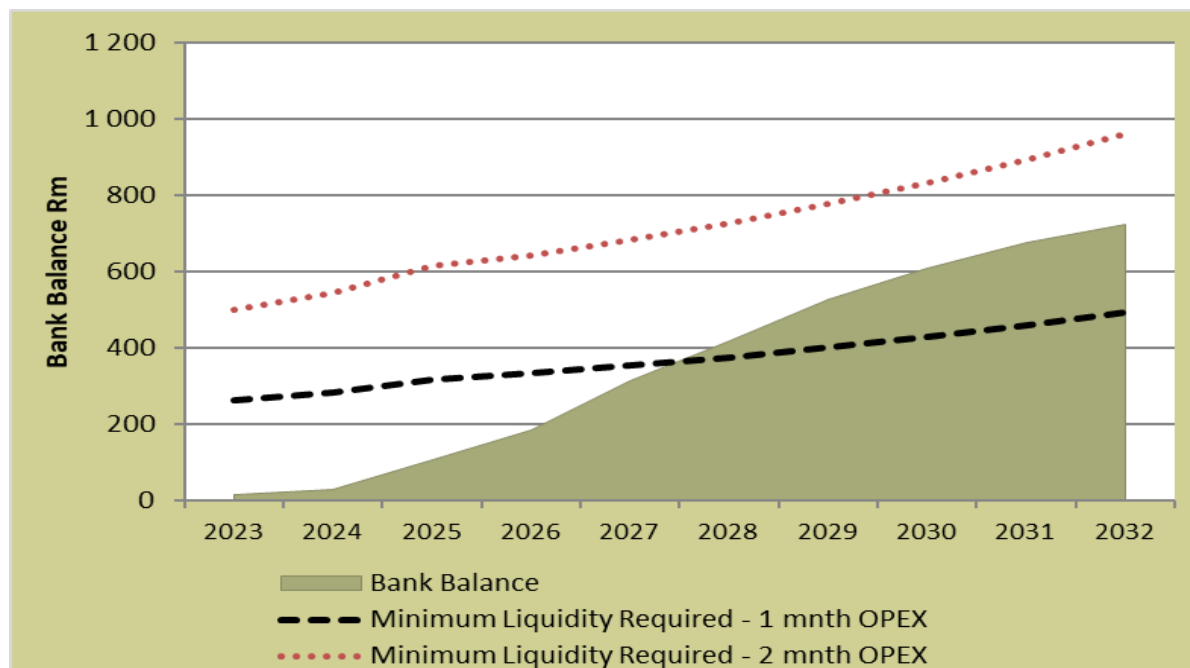


Figure 6-28: Base Case Scenario Capital Funding Mix

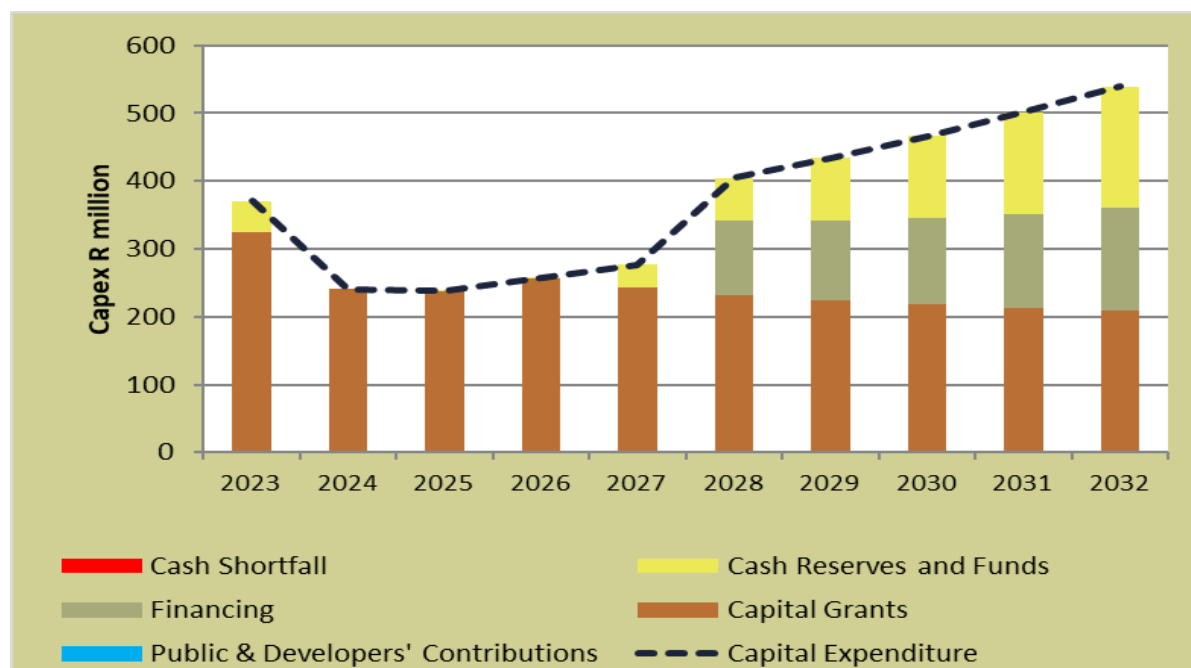


Figure 6-29: Base Case Scenario Annual Borrowing

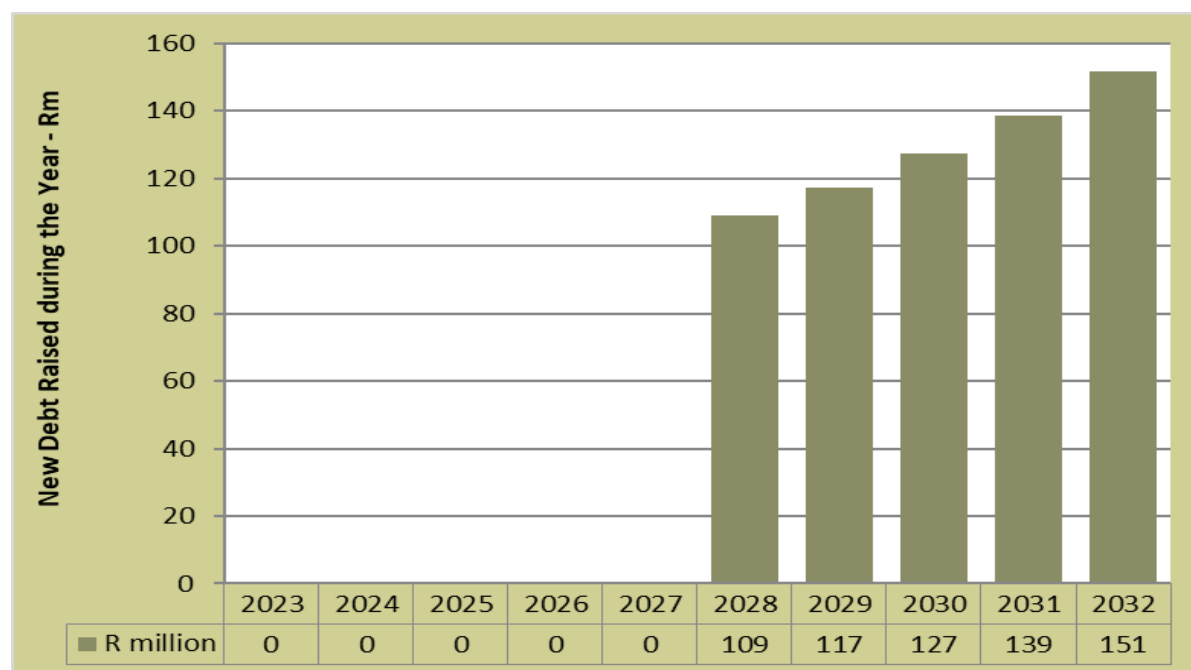


Figure 6-30: Base Case Scenario Gearing

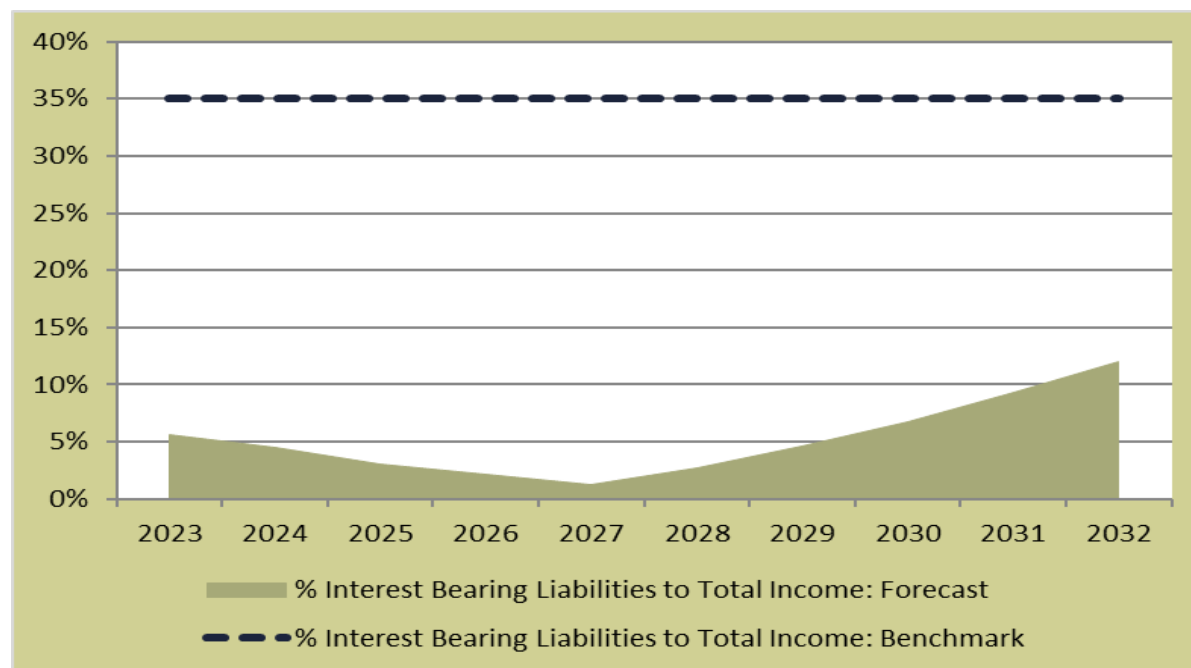
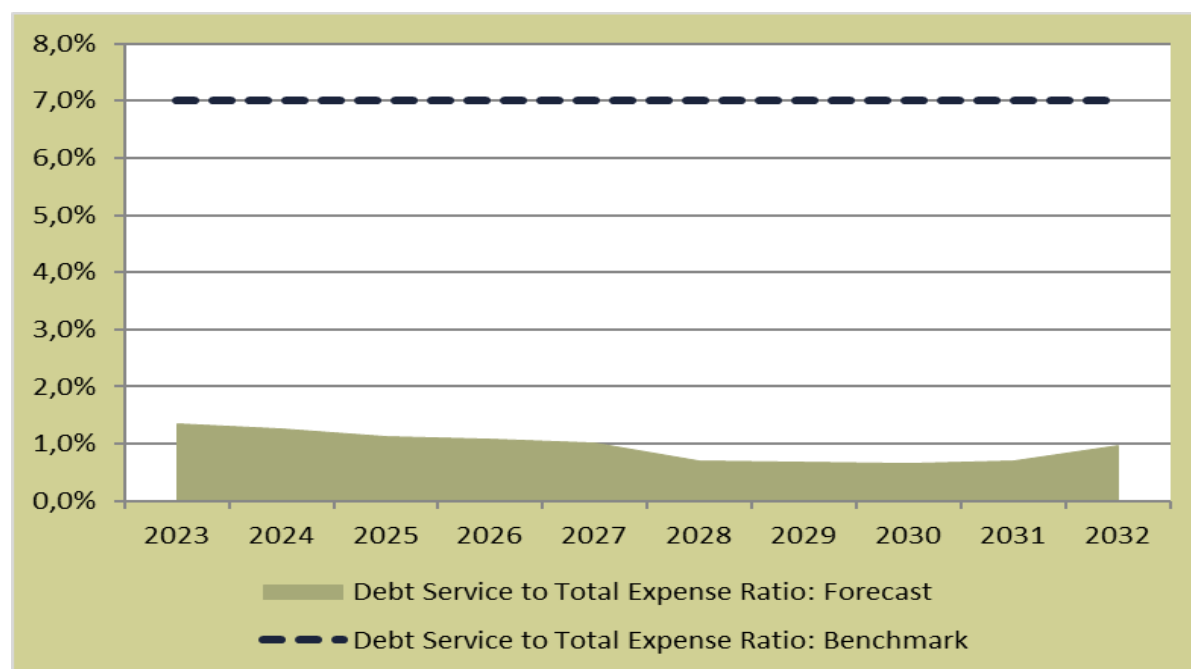


Figure 6-31: Base Case Scenario Debt Service to Total Expense Ratio



6.4.4 Scenario Analysis

As mentioned in section 6.4.3, the Base Case includes assumptions that double as recommendations as to the necessary improvements that Mogale City needs to make in order to ensure long-term financial sustainability and as a result, enable an accelerated capital investment programme.

The scenarios run as part of this report aim to highlight the impact and pitfalls of failing to meet the improvements included in the Base Case assumptions.

a. Scenario 1: Collection Rate

The Base Case assumes an increase in the current collection rate of 87% (FY2022), to 90% within 3 years. Considering the high inflationary environment as well as economic challenges such as loadshedding and global political instability, pressure on households to service their municipal bill is heightened. In light of this, it is reasonable to assume that further non-payment of municipal bills is possible. Should this transpire, an improvement in the collection rate will prove difficult.

This scenario assesses the impact of the maintenance of the current collection rate of 87% for the duration of the planning period. All other input variables are assumed to be consistent with the Base Case.

The outcomes of this scenario, as compared to the Base Case outcomes, are presented below:

Table 6-5: Base Case vs Scenario 1 Outcomes

Outcome	Base Case 10-Year Outcome	Scenario 1 10-Year Outcome
Average annual % increase in Revenue	6,4%	6,3%
Average annual % increase in Expenditure	6,6%	6,9%
Accounting Surplus accumulated during Planning Period (Rm)	R 850	-R 454
Operating Surplus accumulated during Planning Period (Rm)	-R 1 550	-R 2 854
Cash generated by Operations during Planning Period (Rm)	R 1 490	R 186
Average annual increase in Gross Consumer Debtors	8,4%	10,4%
Capital investment programme during Planning Period (Rm)	R 3 730	R 3 730
External Loan Financing during Planning Period (Rm)	R 643	R 643
Cash and Cash Equivalents at the end of the Planning Period (Rm)	R 724	-R 580
No of Months Cash Cover at the end of the Planning Period (Rm)	1,5	-1,2
Liquidity Ratio at the end of the Planning Period	1 : 1	0,4 : 1
Gearing at the end of the Planning Period	12,5%	12,6%
Debt Service to Total Expense Ratio at the end of the Planning Period	1,0%	1,4%

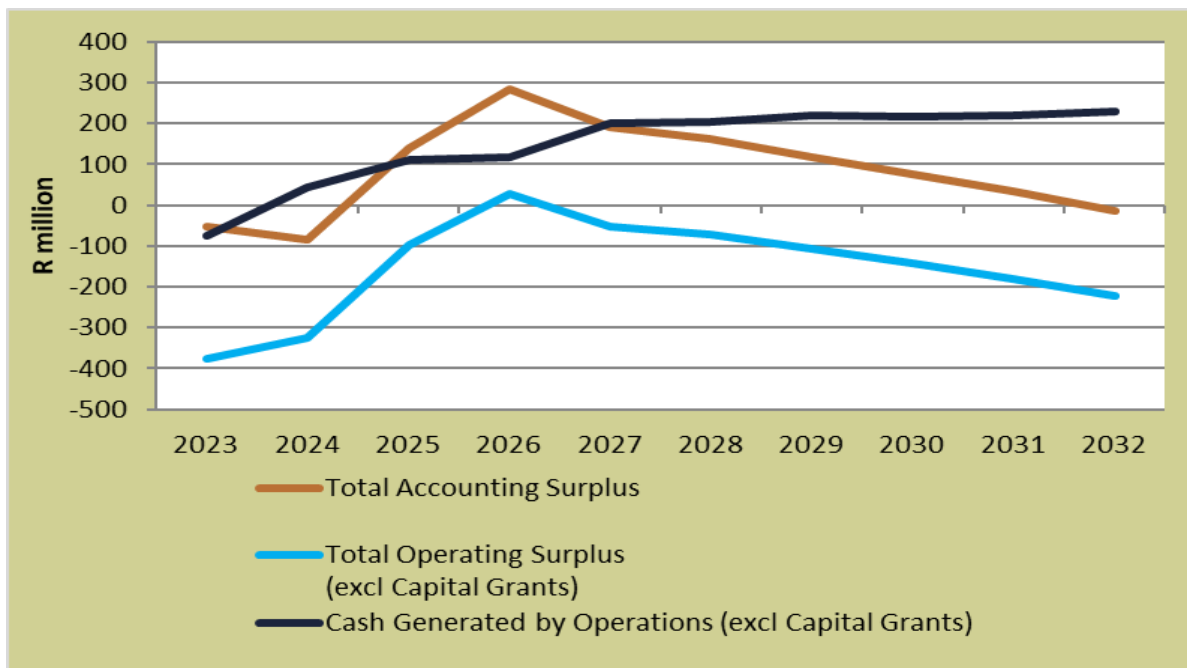
The outcomes of scenario 1, highlight the vulnerability of the municipality's current financial situation. The forecast period-end liquidity ratio declines to a weak 0.4:1, with severely deteriorated financial performance and cash generation also noted. The municipality is forecast to maintain an overdraft position throughout the forecast period, as this is prohibited by legislation, the likely outcome will be further non-payment of creditors.

The municipality will be unable to afford the Base Case capital investment programme, with cash shortfalls on capital expenditure forecast from FY2027 onwards. This will result in the capital investment programme being limited to capital grants received, threatening the municipality's goal of reducing backlogs through investment in bulk infrastructure.

It is fair to say that the failure to improve the collection rate to at least the levels included in the Base Case assumptions, will result to an unsustainable outcome. The maintenance of a collection rate of at least 93%, ideally in excess of 95%, is critical for the long-term financial sustainability of the municipality, and consequently, the affordability of an accelerated capital investment programme.

Figure 6-32: Base Case vs Scenario 1 Analysis of Surplus

Base Case Analysis of Surplus



Scenario 1 Analysis of Surplus

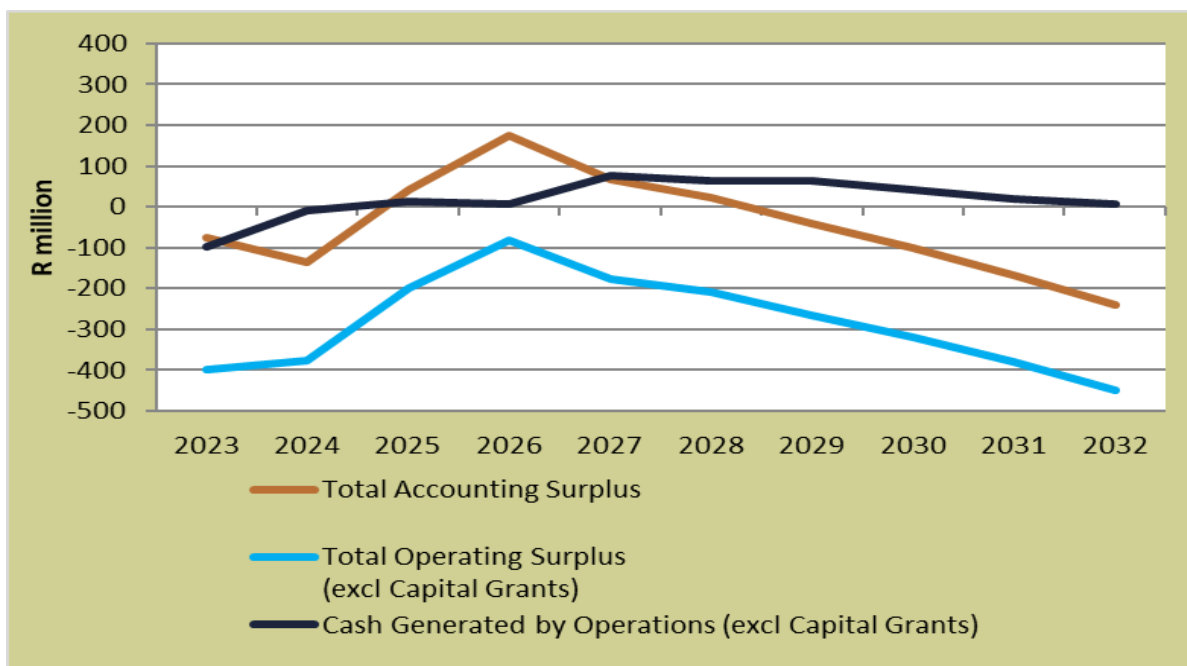
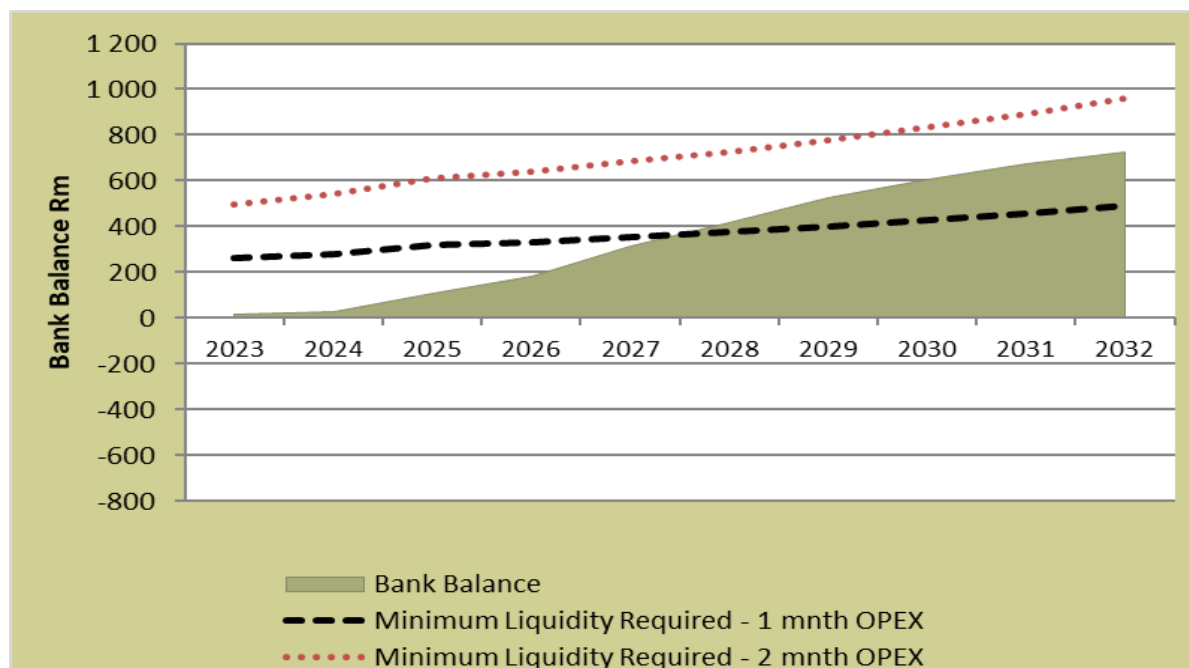
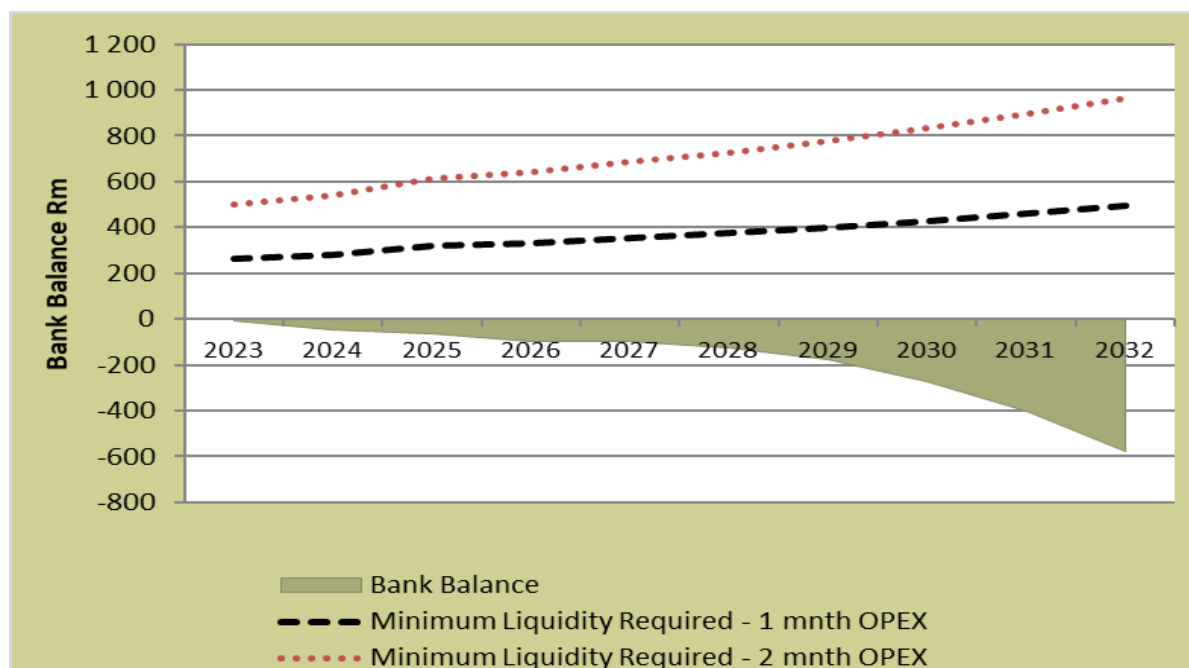


Figure 6-33: Base Case vs Scenario 1 Bank Balance vs Minimum Liquidity Requirements

Base Case Bank Balance vs Minimum Liquidity Requirements



Scenario 1 Bank Balance vs Minimum Liquidity Requirements



b. Scenario 2: Operating Expenditure

Analysis of the Tabled Budget 2023/24-2025/26 revealed that Mogale City was optimistic in its budgeted financial performance. As such, adjustments to certain operating expenditure items were made to reflect more realistic figures.

Mogale City is not immune to external socio-economic challenges and the current economic climate that is littered by challenges such as loadshedding, high inflation and geopolitical challenges, places the municipality's financial performance under huge strain. In light of this, it is reasonable to assume that an increase in operating expenditure is possible.

This scenario assesses the impact of an increase of 2% in operating expenditure from the Base Case levels. The outcomes of scenario 2, as compared to the Base Case outcomes, are presented below.

Table 6-6: Base Case vs Scenario 2 Outcomes

Outcome	Base Case 10-Year Outcome	Scenario 2 10-Year Outcome
Average annual % increase in Revenue	6,4%	6,3%
Average annual % increase in Expenditure	6,6%	6,7%
Accounting Surplus accumulated during Planning Period (Rm)	R 850	-R 54
Operating Surplus accumulated during Planning Period (Rm)	-R 1 550	-R 2 455
Cash generated by Operations during Planning Period (Rm)	R 1 490	R 609
Average annual increase in Gross Consumer Debtors	8,4%	8,4%
Capital investment programme during Planning Period (Rm)	R 3 730	R 3 730
External Loan Financing during Planning Period (Rm)	R 643	R 643
Cash and Cash Equivalents at the end of the Planning Period (Rm)	R 724	-R 158
No of Months Cash Cover at the end of the Planning Period (Rm)	1,5	-0,3
Liquidity Ratio at the end of the Planning Period	1 : 1	0,5 : 1
Gearing at the end of the Planning Period	12,5%	12,6%
Debt Service to Total Expense Ratio at the end of the Planning Period	1,0%	1,1%

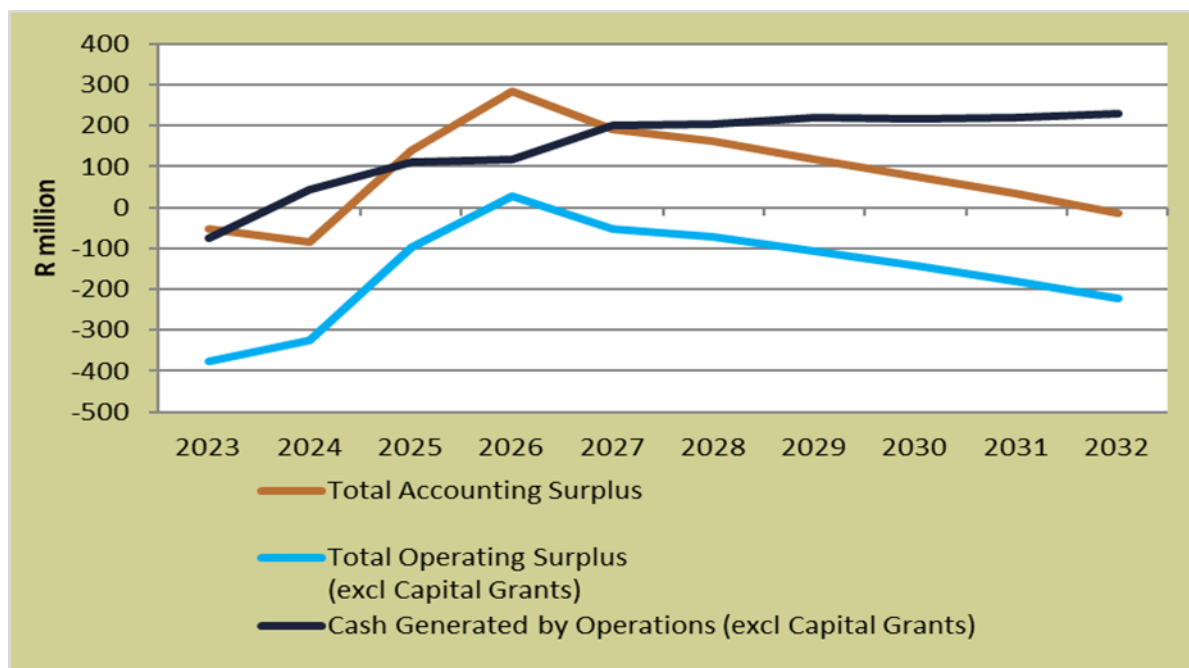
The above outcomes reflect the severe impact of a decline in financial and operational performance. Financial performance is forecast to deteriorate significantly, as indicated by an increase in the accumulated operating deficit to R2.4 billion. Cash generation is forecast to suffer, consequently the liquidity ratio is forecast to reduce to an unhealthy 0.5:1 by the end of the planning period.

The municipality is forecast to maintain an overdraft position for the duration of the forecast period, as in the case of scenario 1. This will lead to further non-payment of creditors. The capital investment programme is forecast to be unaffordable and will likely result in capital investment being limited to capital grants.

Graphical comparison of the Base Case and Scenario 2 outcomes are presented below.

Figure 6-34: Base Case vs Scenario 2 Analysis of Surplus

Base Case Analysis of Surplus



Scenario 2 Analysis of Surplus

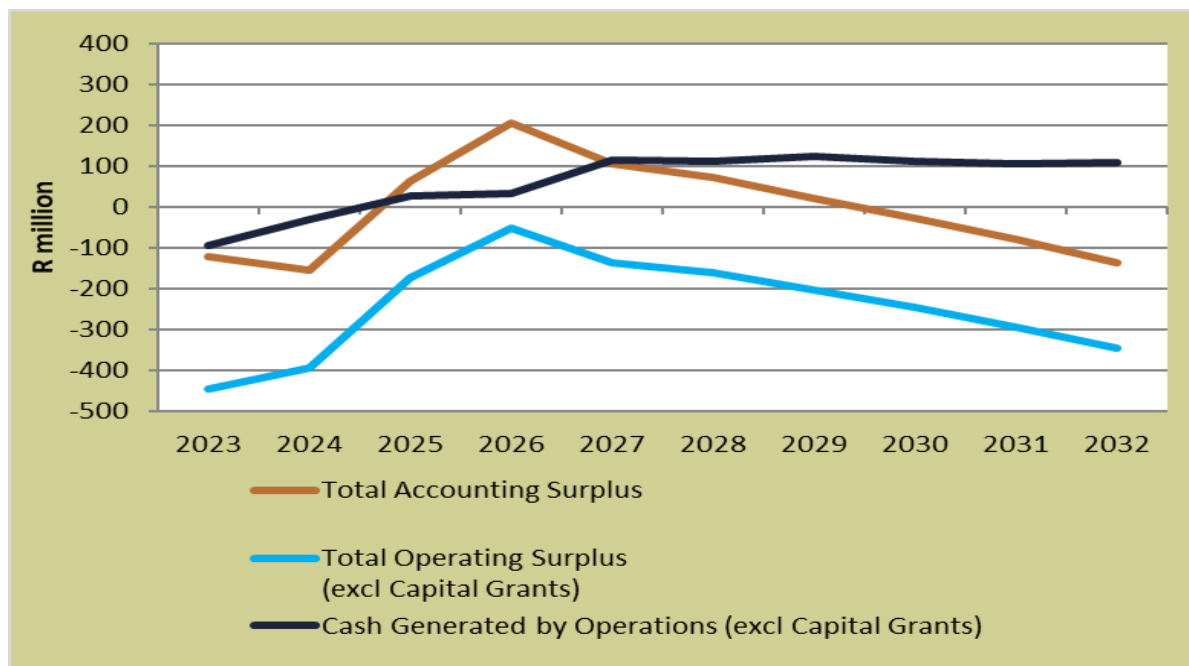
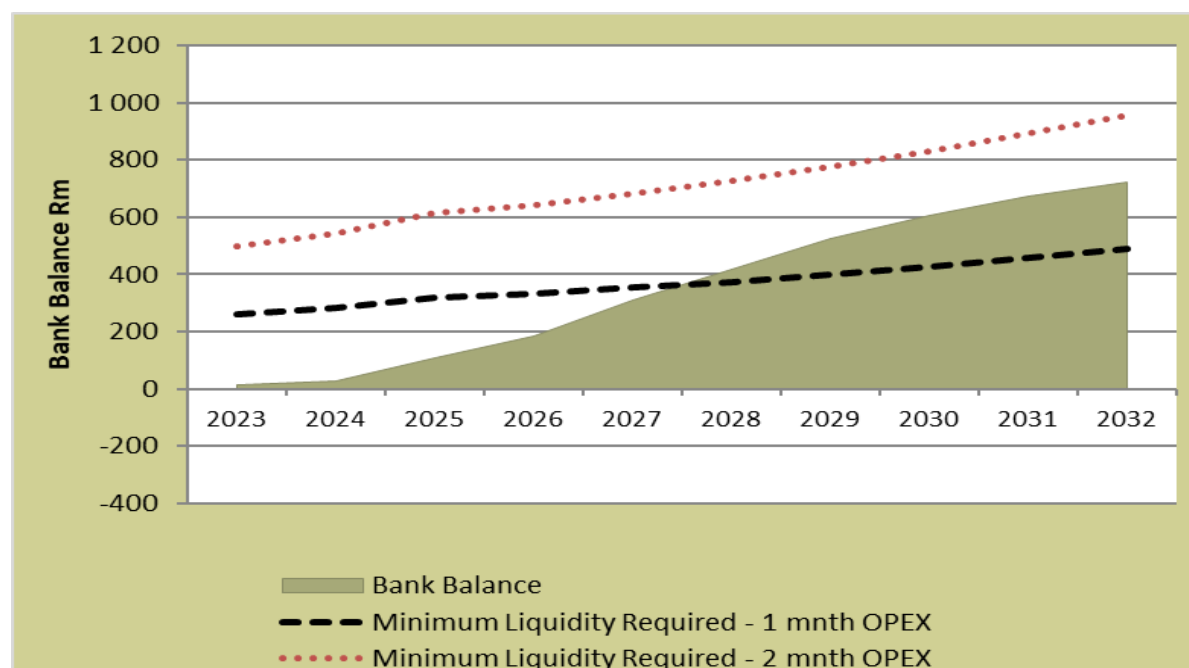
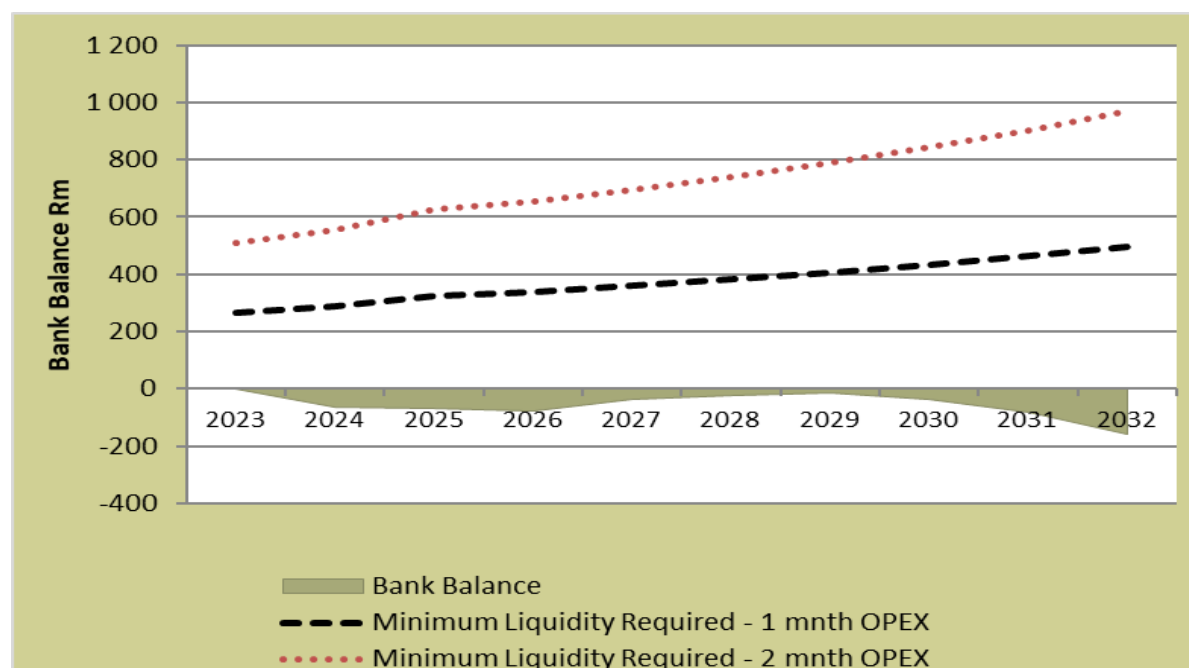


Figure 6-35: Base Case vs Scenario 2 Bank Balance vs Minimum Liquidity Requirements

Base Case Bank Balance vs Minimum Liquidity Requirements



Scenario 2 Bank Balance vs Minimum Liquidity Requirements



Scenarios 1 and 2 both reflect financially unsustainable outcomes. Failing to meet the assumptions included in the Base Case will have significant financial implications for Mogale City. The proposed capital investment programme will be deemed unaffordable and as a result, likely be limited to capital grants received.

It is thus crucial for the municipality to implement measures to ensure the improvements included in the Base Case assumptions are met, with a particular focus on the collection rate. The Base Case assumptions provide a clear indication of what needs to be done in order to enable an acceleration of the capital investment programme, whilst promoting long-term financial sustainability.

6.4.5 Summarised outcome of the long-term financial model forecast

a. The socio-economic base and future revenue

- Mogale City has a strong economic base, with a reasonably concentrated economy. Growth in the population increases pressure on existing infrastructure.
- Reasonable economic growth (3.4% p.a.) is expected over the forecast period.
- Notable increases in the indigent population will place further strain on the municipality's financial resources. Tariffs must reflect the true cost of supply, but are however, limited by households' ability to pay.
- Investment in productive assets that create an enabling environment for economic growth, strengthening and expanding the economic base in the process, is critical for the municipality to pursue and sustain policies aimed at providing for the ever-increasing indigent population.
- Tariff increases must be broadly aligned with CPI, and cognisance given to the implementation of a cost-reflective tariff structure.

b. Capital investment

This subsection provides a summary of the most significant forecast outcomes from the long-term financial model in terms of the municipality's ability to invest in capital over the long term. Chapter 7 includes the detail forecast outcomes as part of the municipality's 10-year affordability envelope.

- As the population increases, the municipality needs to cater for new migrants and improve access to and the quality of service delivery within the municipal area.
- Mogale City has historically managed to maintain a strong capital investment programme, which is forecast to decline over the MTREF period due to forecast cash constraints.
- The capital investment programme is accelerated after the MTREF period and the total forecast capital outlay over the planning period amounts to R3.73 billion. External borrowings are included from FY2028 onwards, for a total borrowings programme of R643 million forecast. This enables the affordable acceleration of the capital investment programme.
- To access external borrowings the municipality will need to address its current financial governance challenges and achieve unqualified audit opinions.
- Even at this rate of increased borrowing, both Debt Servicing and Gearing levels remain within National Treasury norms.

c. Scenario analysis

This subsection provides a summary of the most significant forecast outcomes from the long-term financial model in assessing alternative long-term financial scenarios for the municipality. The detail of the alternative scenarios forecast outcomes are presented in Chapter 7.

- Scenario 1: Insufficient improvement in the Collection Rate:
 - Scenario 1 reflects the impact of the municipality failing to improve on its current collection rate of 87%, rather than achieving an improvement to 90% within 3 years as assumed in the Base Case. This scenario results in an unsustainable outcome, highlighted by an unhealthy liquidity ratio of 0.4:1, an accumulated operating deficit of R2.8 billion as well as the maintenance of an overdraft position throughout the planning period, which will undoubtedly result in further non-payment of creditors.
- Scenario 2: Operating Expenditure increase:
 - Scenario 2 reflects the impact of an increase in operating expenditure of 2% from the Base Case level. This scenario results in an unsustainable outcome, reflected by a severe accumulated operating deficit, cash shortfalls on forecast capital expenditure as well as a weak liquidity ratio of 0.5:1. The municipality is forecast to maintain an overdraft position throughout the forecast period.
 - The message that should be taken from the outcomes of the scenarios as well as the assumptions included in the Base Case, is that Mogale City's financial situation is vulnerable. Failing to meet the assumptions included in the Base Case will leave the municipality in a challenging financial position that will threaten the long-term financial sustainability of Mogale City LM.

- Additionally, the Base Case capital investment programme will be deemed unaffordable. A likely outcome will be that capital expenditure will be limited to capital grants received due to a lack of liquidity and inability to take on and service new debt. This will prove a hindrance to the municipality's backlog eradication efforts as the required investment in bulk infrastructure will likely not materialise. This is particularly concerning considering that Mogale City's infrastructure will continue to be strained further as growth in the local population increases demand for infrastructure services.
- It is thus crucial that the necessary measures are implemented to achieve the improvements included in the Base Case assumptions. Should this materialise, the municipality will be on a path towards long-term financial sustainability. A financially sustainable municipality has the ability to accelerate its investment in productive assets that enable further economic growth and development.



Affordability Envelope

7 Affordability Envelope

7.1.1 Affordable Future Capital Investment

a. Capex affordability and funding

The total Capex Demand will be determined as part of the Capital Prioritisation exercise. We have, however, calculated an affordable capital expenditure envelope for the 10-year planning period which amounts to R3.73 billion.

b. MTREF capital funding mix

Mogale City LM's MTREF budget 2023/24-2025/26 expects a capital budget amounting to R1.01 billion. The table below reflects the funding mix for the proposed MTREF capital investment programme.

Table 7-1: MTREF Funding Mix

Year	Total	2024	2025	2026
Public & Developers' Contributions	0	0	0	0
Capital Grants	736	241	238	257
Financing	0	0	0	0
Cash Reserves and Funds	276	70	173	33
Capital Expenditure	1 012	311	411	290

Mogale City has historically been heavily reliant on capital grants to fund capital investment, with no borrowing taking place since FY2016. Substantial amounts of own cash has historically been utilised to supplement capital grants, however, this is not seen as a sustainable practice.

The MTREF funding mix reflects similar characteristics to the historic funding mix. Heavy reliance is placed on capital grant funding, with R736 million (72%) of the proposed funding mix coming from this source. The remaining R276 million (28%) is budgeted to be funded from the municipality's own cash. The model outcome reflecting the proposed capital budget included in the MTREF, indicates an unbalanced funding mix that will result in cash shortfalls on budgeted capital expenditure in FY2024 & FY2025.

c. 10-Year capital funding mix

The Base Case capital funding mix for the 10-year planning period is forecast to be as follows:

Table 7-2: Base Case 10-Year Funding Mix

Year	Total	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Public & Developers' Contributions	0	0	0	0	0	0	0	0	0	0	0
Capital Grants	2 400	324	241	238	257	243	232	224	218	213	209
Financing	643	0	0	0	0	0	109	117	127	139	151
Cash Reserves and Funds	687	47	0	0	0	33	64	93	121	149	179
Cash Shortfall	0	0	0	0	0	0	0	0	0	0	0
Capital Expenditure	3 730	371	241	238	257	277	405	434	466	501	540

It must be noted that national constraints on fiscus leave a high probability of future grant funding declining in real terms. In the case of Mogale City, with historic heavy reliance on capital grant funding, this is of concern. The table below indicates the forecast capital grant funding over the 10-year planning period. The forecast impact of fiscus constraints is clear in the declining trend beyond the MTREF period noted in Table 7-3.

Table 7-3: Forecast Capital Grant Funding

Year	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Capital Grants	324	241	238	257	243	232	224	218	213	209

The municipality must thus prioritise improvements in financial performance as well as the maintenance of a collection rate in excess of 90%. The Base Case assumptions reflect this. Failure to meet the improvements included in the Base Case assumptions, will likely result in the capital investment programme being limited to capital grant funding received in any given year.

The Base Case attempts to rectify the issues identified in the MTREF funding mix, that are forecast to result in cash shortfalls on budgeted capital expenditure. Capital expenditure was limited to capital grants over the MTREF period, due to the vulnerability of the forecast cash position during this period. The assumed annual growth in capital expenditure beyond the MTREF period is 7%. Borrowing was included from FY2028 onwards (Figure 7-2), for a total of R643 million over the final 5 years of the planning period.

The planning period-end debt indicators reflect the affordability of the accelerated Base Case debt profile. The gearing ratio of 12.5% and debt service to total expense ratio of 1.0%, indicate that the Mogale City LM can further accelerate the borrowing programme in an affordable manner. It is recommended that this option is explored as it will facilitate the optimisation of the funding mix, whilst negating the need for excessive use of own cash to supplement capital grant funding. This is an important component of long-term financial sustainability. The proposed funding mix is illustrated below:

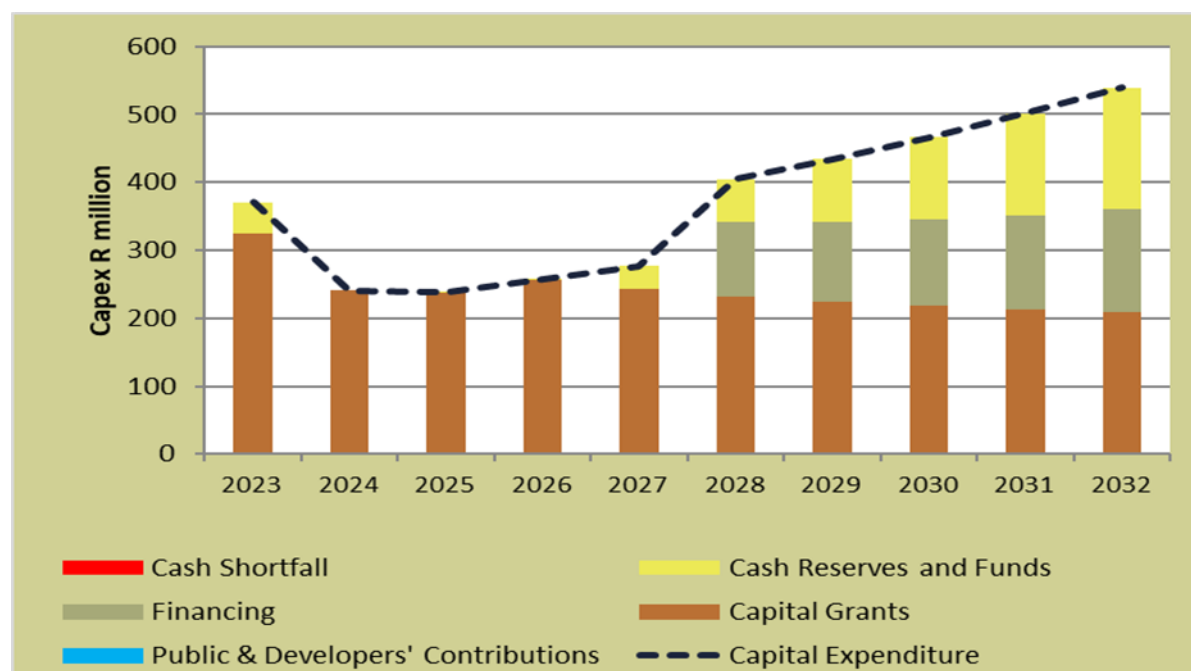
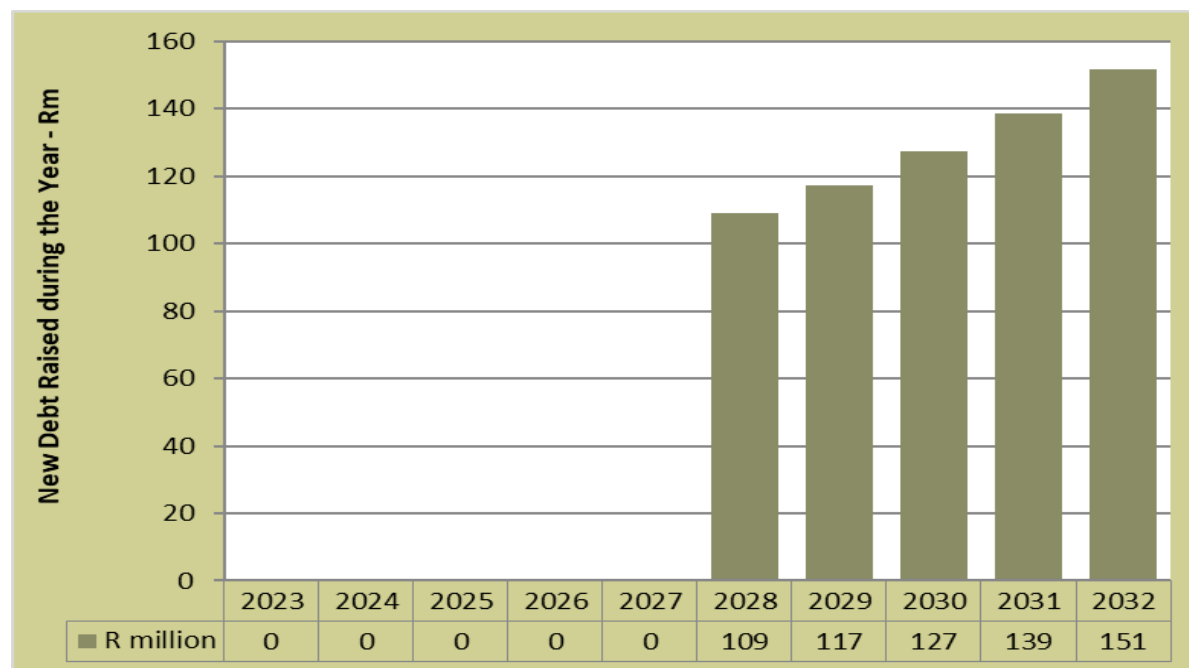
Figure 7-1: Base Case Capital Funding Mix


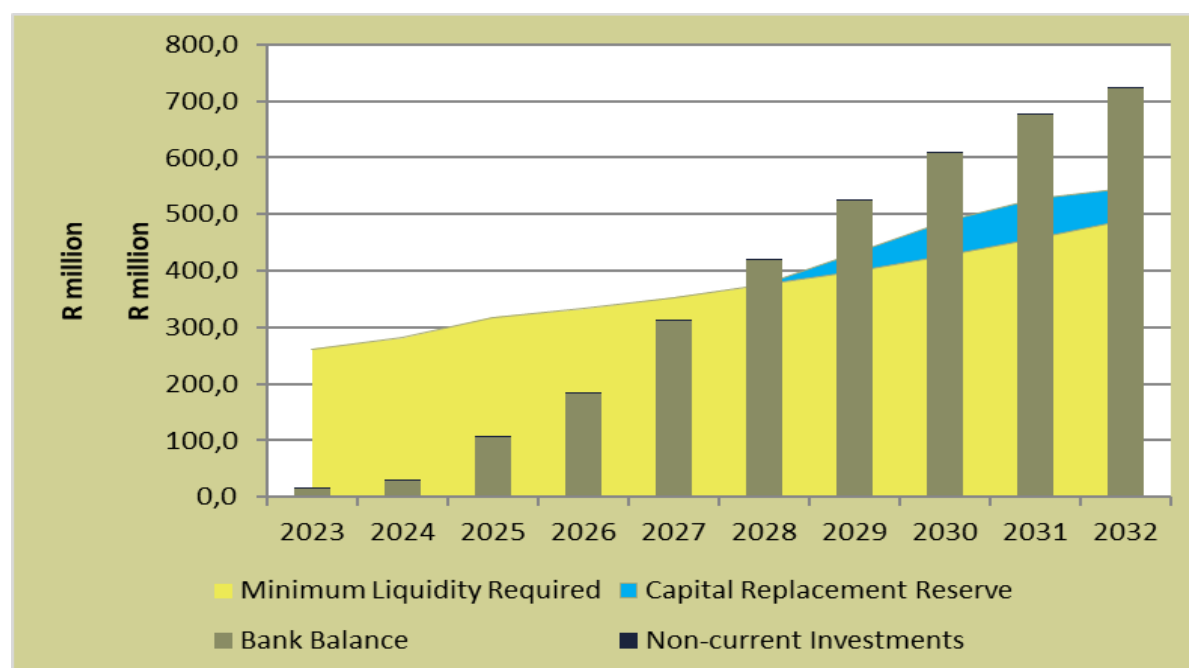
Figure 7-2: Base Case Annual Borrowing



d. Liquidity and Capital Replacement Reserve

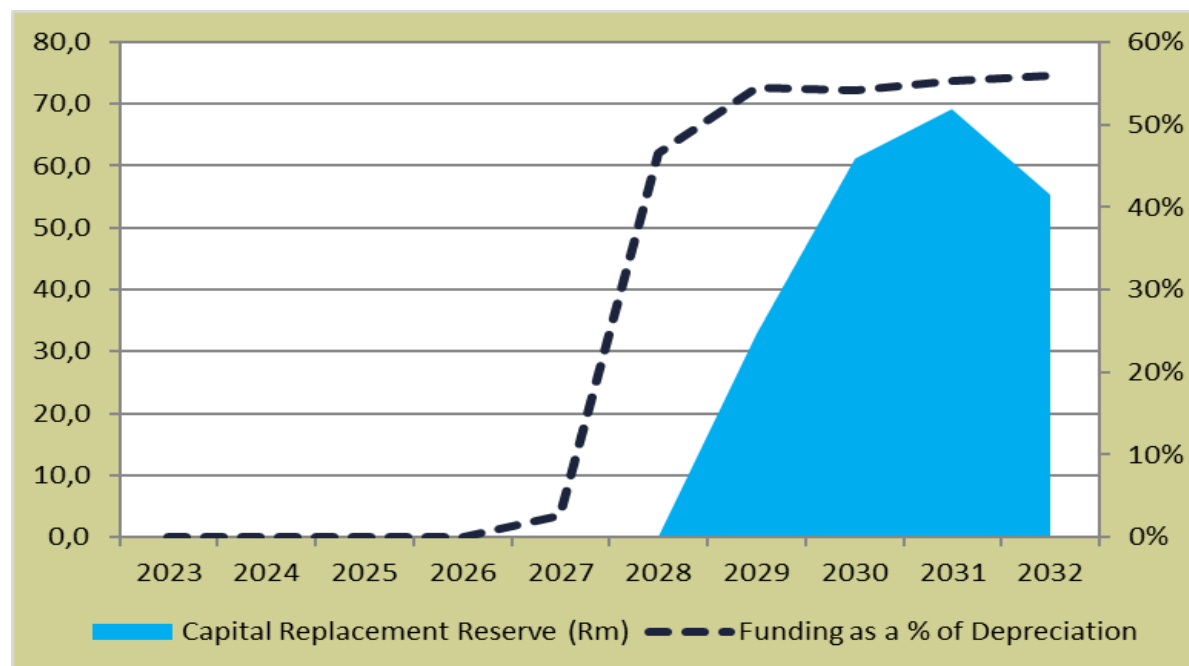
The minimum required liquidity level caters for unspent conditional grants, short-term provisions, reserves and a working capital provision of 1-month's operating expenditure. Mogale City's liquidity position is forecast to improve year-on-year but is forecast to remain below the minimum liquidity threshold until FY2028. This leaves little room for the establishment of a capital replacement reserve. Liquidity is forecast to continue to improve throughout the remainder of the planning period. Based on this forecast, Mogale City will be able to contribute to a capital replacement reserve between FY2028-FY2032. This will put the municipality in good stead for future capital investment, enabling the use of own cash to supplement borrowings and capital grants without threatening the stability of the liquidity position.

Figure 7-3: Base Case Cash vs Minimum Liquidity Levels



The graph below shows in more detail the period during which the municipality will be able to contribute to the Capital Replacement Reserve, FY2028-FY2032.

Figure 7-4: Base Case Funding of a Capital Replacement Reserve



e. Gearing

As mentioned previously, despite an accelerated borrowing programme, the debt indicators being the gearing and debt service to total expense ratios, are forecast to remain well within their respective NT norms of 45% and 8% respectively. Considering the size and financial ability of Mogale City, a maximum gearing ratio of 35% and maximum debt service to total expense ratio of 7% are considered prudent.

The model indicates a declining trend in the gearing ratio until FY2027. This ratio will naturally increase from FY2028 onwards as the municipality begins the acceleration of its borrowing programme. The debt service to total expense ratio follows a similar trend, declining until FY2028. This ratio is forecast to remain reasonably flat until FY2031, before increasing as the costs to service debt increase as more debt is undertaken.

The graphs below illustrate the evolution of the gearing debt service to total expense ratios over the forecast period.

Figure 7-5: Base Case Gearing Ratio

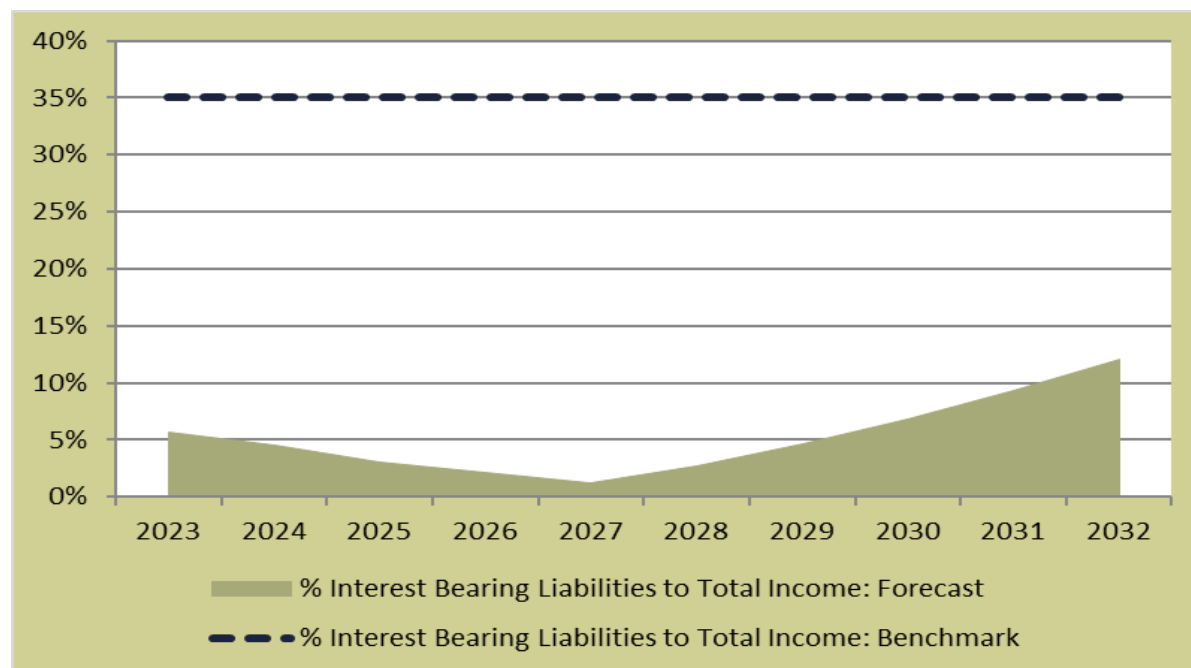
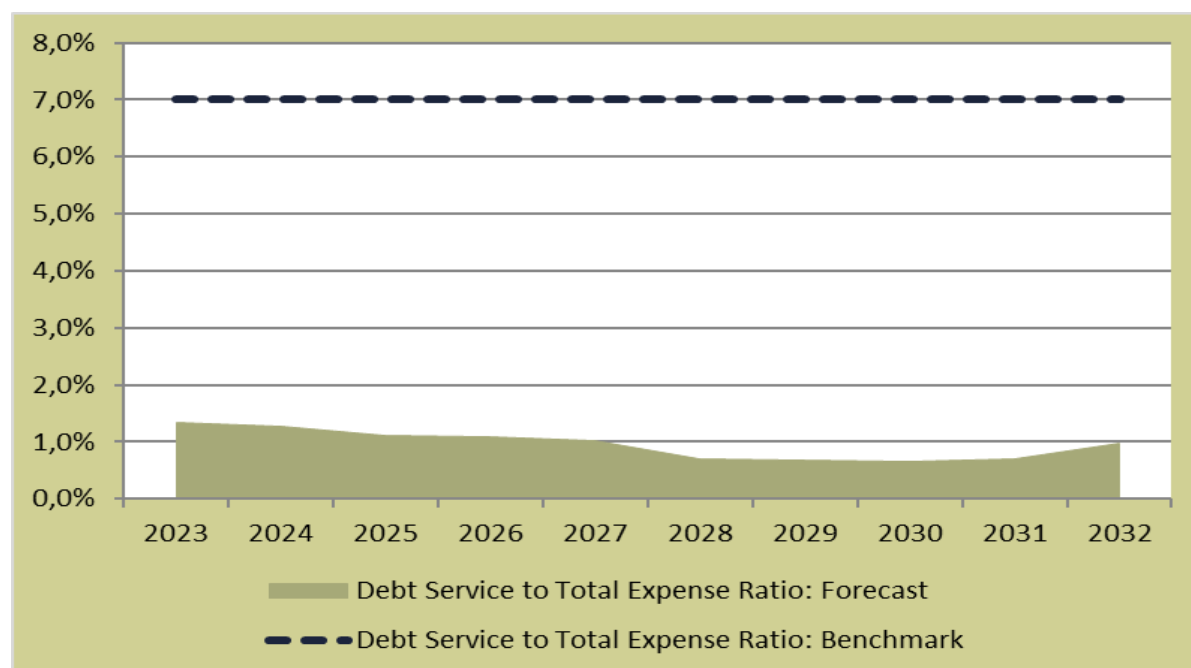


Figure 7-6: Base Case Debt Service to Total Expense Ratio





Prioritisation Framework

8 Capital Prioritisation Framework

8.1 Introduction

The use of a Capital Prioritisation Framework is crucial in implementing a Capital Expenditure Framework. This framework establishes a methodology for sorting projects based on their alignment with objectives and the municipality's strategic intent. It assigns a numerical value to each project's priority, providing a systematic and objective approach to prioritisation. The Capital Prioritisation Framework serves as a scientific basis for decision-making and strategic planning, encompassing spatial, infrastructure, and financial considerations. In the following sections, we will discuss Mogale City's Capital Prioritisation Framework, including its context in South Africa, rationalised approach, design principles and elements, prioritisation rationale, high-level approach, detailed criteria, application, and results.

8.2 The South African Context

In the South African context, the municipality's Integrated Development Plan (IDP) is widely recognised as the key driver of priorities and capital expenditure. However, it is crucial to consider a range of metrics and factors in the process of prioritisation. This entails emphasising the significance of various considerations, such as policy frameworks, strategic documents, and the municipal vision, in aligning capital projects and priorities. Achieving strategic alignment through policy documentation is essential, as is spatial targeting through Spatial Development Frameworks (SDF) and other spatial development strategies. The Spatial Planning and Land Use Management Act (SPLUMA) Chapter 4 (Act 16 of 2013) outlines the requirement for local municipalities to develop a Capital Information Framework (CIF), which incorporates a prioritisation rationale as part of the municipality's overall strategy and spatial transformation agenda. Municipalities face the challenge of effectively allocating capital expenditure across diverse areas while ensuring the adequate allocation of resources to societal and environmental needs. This allocation is often guided by environmental, social, and governance (ESG) strategies:

- **Environmental:** Capital expenditure should be directed towards creating a safe and secure environment, protecting natural heritage, and preserving the natural environment.
- **Social:** Capital should be allocated to projects that aim to restore human dignity, create sustainable job opportunities, and foster the development of individuals through skills training programs.
- **Governance:** Capital expenditure should be focused on enhancing governance practices within organisations, promoting transparency, and adopting collaborative approaches.

Ultimately, municipalities bear the responsibility of strategically investing capital to foster the development of sustainable, liveable, and globally competitive cities. Achieving this requires the adoption of a prioritisation methodology that incorporates qualitative, quantitative, and spatial priorities as articulated by the municipality's strategic and technical leadership and enshrined in its various strategic plans. Given the ever-evolving urban planning environment, the prioritisation process must possess the ability to comprehensively address emerging issues and, crucially, transparently incorporate and represent the changing needs of the municipality.

Table 8-1 represents the realities that are experienced by most local municipalities. In addition to the general issues, most municipalities face structural issues such as infrastructure backlogs, the provision of basic services and the maintenance of existing assets. Therefore, there is a need for a mechanism to drive a strategic, yet equitable, allocation of capital within the municipality.

Table 8-1: The South African Reality

South African Context	Description
Urbanisation, immigration and growth	According to a report produced by the South African Cities Network (SACN) in 2016, South African Cities are inundated by rapid urbanisation. Because of this rapid urbanisation, municipalities must deal with a relentless demand for infrastructure and services. Together with this unconstrained urbanisation and population growth, the demand for infrastructure and services outstrips the financial resources of municipalities. Given the limited resources to address these needs, the prioritisation of capital expenditure has become a factor of critical importance. The typical prioritisation metrics used in this regard include the consideration of a project concerning the Urban Edge or the identification of Priority Development Areas (PDAs) or Spatial Targeted Investment Areas (STIAs) in terms of the SDF.
The importance of the city and regional economy	One of the main drivers of economic sustainability is the creation of job opportunities. In saying that, there is a significant number of the population within South African municipalities which have low levels of education that results

South African Context	Description
	in high unemployment, with very low incomes and poor living standards. There are not enough job opportunities for unskilled labourers in the economy to address this issue adequately. To effect an economic change would require a multi-pronged approach involving a range of interventions across several industries. From a capital expenditure perspective though, the process of prioritisation can benefit from the sophistication of a complex, macro-economic econometric model. Typical prioritisation metrics used in this regard include Job creation (opportunities - per R1m CAPEX).
Increasing maintenance burden	Municipalities are faced with the conundrum of balancing spatial, social and economic transformation, whilst maintaining the existing asset base of the city. Spatial, social and economic transformation is often associated with the provision of new, quality infrastructure in support of liveable communities either in newly demarcated development areas or as part of upgrading severely marginalized communities, with a poor service provision history and a backlog of service delivery demands. A balanced approach to capital spending, focusing partially on the provision of new infrastructure, whilst maintaining the existing asset base and revenue stream is important. A fundamental consideration of all capital expenditure therefore must include the estimated operating expenditure burden that will result from the capital that is being spent. The operating expenditure burden is inevitable – a situation can however arise whereby the operating expenditure continues to grow to the extent that it starts to impact the available capital expenditure. Typical prioritisation metrics used in this regard are the lifespan of a specific asset or the rateability of the asset.
Coordination and Inter-dependency	Capital project preparation is often undertaken in a non-integrated way in that the different departments, divisions and agencies plan and budget for capital projects in isolation from each other. This is not necessarily intended, it is simply a consequence of a large, multi-disciplinary organisation. Departments often have their priorities and their methods of determining such priorities. These methods vary in terms of sophistication and detail. The provision of municipal infrastructure requires integrated project planning and preparation. Therefore, a decision support system, which facilitates the coordination and integration between planning and infrastructure provision on a project preparation as well as an institutional level is critical.
Competing Interests	Although basic services infrastructure (i.e. water, sanitation, electricity and solid waste management) is often as high on the community delivery agenda as social facilities and amenities (i.e. clinics, libraries, community facilities etc.), these different infrastructure types do not always receive an equitable capital allocation. Often, income-generating capital expenditure (i.e. capital spent on infrastructure which can yield some form of monetary return) receives larger quantities of capital budget than non-income-generating infrastructure. A decision support system, which allows for scenario testing concerning the ratio of income-generating and non-income-generating capital expenditure, taking into account the impact that this would have on the city's financial sustainability is required.
Spatial transformation agenda	The spatial vision of South African municipalities seeks to transform the developmental landscape to become more inclusive, efficient and equitable. Consequently, capital spending should be earmarked to drive the spatial transformation agenda which in turn will result in a spatially transformed and economically sustainable city structure. A decision support system, which enables capital project prioritisation, reporting and tracking quantitatively, qualitatively and spatially, is required to ensure that capital spending is focused on strategic spatial structuring areas to achieve the desired city spatial form. Typical prioritisation metrics used in this regard are the spatial consideration of the SDF.

The complexity and interdependency of these issues are very challenging, and each year, new considerations and priorities are introduced. As it is depicted in the table, municipalities need to strike a balance between providing for people, whilst making profits and caring for the wellbeing of the environment. This “triple bottom line” theory triggers the need for a scientifically based tool to facilitate complex decision-making of this nature, is evident. The prioritisation process should be easy to understand and interpret whilst allowing for accessibility and input by its users on any level of detail. Given the diverse range of different departments and divisions within the typical South African municipality and the divergent needs stemming from each department, it is essential that the prioritisation methodology lends itself towards participation and allows for easy calibration by key decision makers.

8.3 A Rationalised Approach to Prioritisation is Essential

The need for a rationalised prioritisation methodology is embedded in legislation. Also, a defensible prioritisation methodology is becoming the preferred response when considering the daunting and increasingly complex realities facing urban and rural environments today, and other developmental and resource constraint pressures facing decision-makers.

Two sets of criteria further enhance the need for a rationalised prioritisation methodology that should be applied to scarce resources, that is first the general qualifying criteria for any prioritisation exercise, irrespective of the context, and secondly, the design criteria of prioritisation which is essential for successful prioritisation.

If both these sets of criteria are met, a prioritisation methodology can be justifiably applied to cast light on the complex decision-making environment, assisting decision-makers to deal with seemingly daunting pressures, including the compliance of legislation and the ability to defend decisions on a scientific basis. Any organisation with the following three criteria needs a methodology for prioritisation:

- Strategy: The organisation has a defined strategy or goal set;
- Intent: The organisation has the intention and a mandate to implement the strategy or goal-set, and;

- **Limited Resources:** The organisation is faced with a resource constraint within which to execute the strategy (i.e., resource limitations).

Mogale City adheres to the fundamental criteria outlined above and consequently needs prioritisation in that:

- It has a formal strategic document, in the form of the Integrated Development Plan, with supporting strategic positions such as the LTFP, Technical Master Plans and the Growth and Development Strategy (GDS);
- It has the mandate to implement the above-mentioned strategic documentation to achieve the goals of the National Development Plan 2030 through the delivery of specific services and assets, and;
- Mogale City, as with the majority of municipal entities in South Africa, has limited financial resources through which to implement the demand for capital investment in its jurisdiction.

It is therefore necessary for Mogale City to develop a prioritisation mechanism to navigate the trade-offs and strategic decision-making required for the execution of its strategy within the resource limitations it is facing.

8.4 Prioritisation Design Principles

The following design principles are central to successful prioritisation:

- Scientific – measurable criteria based on best practice to produce dependable results;
- Participative – obtain key stakeholder buy-in in the criteria and weighting applied;
- Transparent – complex enough to yield credible results but simple enough to be explained to all stakeholders;
- Adaptable – flexible model design to allow for immediate changes, and;
- Collaborative – to harness institutional knowledge.

8.4.1 A scientific prioritisation approach

In the process of prioritisation, the importance of a multitude of considerations must be emphasized. Although it is commonly accepted that the municipality's IDP should be the primary driver of priorities, there are however many other metrics that should be considered in the process. This is done through a multi-criteria-weighted approach. Some of these considerations are briefly highlighted.

The first fundamental to consider is funding that is available for implementation and how this capital is sourced. This informs of the affordability of implementing the list of capital needs. In a municipal environment, capital is sourced from several places. Among these sources are bonds and loans. The affordability and the debt thresholds set by the MFMA are important considerations in this process.

Technical inputs stemming from the municipality's asset management system or other technical reports or processes represent another important aspect to consider in the process of prioritisation. These technical inputs often do not align optimally with IDP objectives but are important all the same due to age, wear or other important reasons. Other technical aspects such as the technical interdependence of projects also play an important role. This will have the consequence that projects that appear to be of a lower priority, may be elevated in importance if they are enablers of other, important projects.

The economic, socio-economic and environmental impacts also represent impact lenses that cast an important perspective on project impacts. There are various methods and models to determine these impacts to varying degrees of accuracy. Within a service delivery framework, these elements must be included in the prioritisation process.

Lastly and very importantly, the spatial alignment of a project to a municipality's strategic or political objectives needs to be included in the prioritisation process. The assumption is often erroneously made that these spatial aspects are adequately captured by the IDP process. The reality is however more complex and dynamic. Spatial priorities are often revealed throughout the IDP cycle by new processes such as the development of Spatial Development Frameworks (SDFs).

8.4.2 A participative prioritisation approach

The prioritisation process facilitated by a system should be easy to understand and interpret whilst allowing for accessibility and input by its users on any level of detail required. Given the diverse range of different departments and divisions within the typical South African municipality and the divergent needs stemming from each department, it is essential that the prioritisation methodology lends itself towards participation and allows for easy calibration by key decision-makers.

8.4.3 A transparent prioritisation approach

To ensure the transparency of a prioritisation model and methodology, it is critically important to ensure that such a model is scalable, adaptable and flexible. A model can be measured as scalable if the same methodology can be applied to a small number of projects as well as a large number of projects, with relatively the same input effort, and ensuring reliability in the results.

A model can be considered adaptable, its content, methodology and outcome can be fully explained, and consequently changed at the request of the user. Adaptability relates to the ability of the model to adapt – either to the client's needs, i.e. what is considered a priority, or to changing realities, or to any other factor that might be considered necessary to change the prioritised direction of the municipality. A model can be regarded as flexible if it can accommodate different data inputs and different evaluation criteria.

8.4.4 A System-based optimisation

One of the most recognised methods to evaluate various options in line with principles or strategic positions is a multi-criteria decision-making framework. It requires the set-up of specific principles, linked to distinguishable criteria and a set of options carrying attribute data related to the criteria.

If a human was to manually calculate the outcome of each option, assuming 3 000 options, and 12 criteria, then it will take a human about 51 years to complete a single task. The power of a system based, not an Excel-based prioritisation tool, enables a human to make the same set of calculations in 9 minutes or less. This enables strategists and decision-makers to focus efforts on making the right decisions based on several scenarios and trade-offs, not hampered by computational power.

8.4.5 A Collaborative approach

In environments characterised by silo-oriented organisational management, collaboration brings a viable remedy for the ills spawned from the previous configuration. Some of those viable remedies, that if implemented correctly can not only change decision-making but overall organisation behaviour, include:

- Facilitates reaching agreement on priorities and key issues;
- Establish a platform for conversations about what is important;
- Guide, coordinate and align the municipal budget;
- Provides for a transparent and rationalised budget process;
- Helps collective prioritising of complex or unclear issues;
- Provides a quick and easy, yet consistent, method for evaluating options;
- Takes some of the emotion out of the process, and;
- Quantifies the decision with numeric rankings.

8.5 What Does Prioritisation Entail

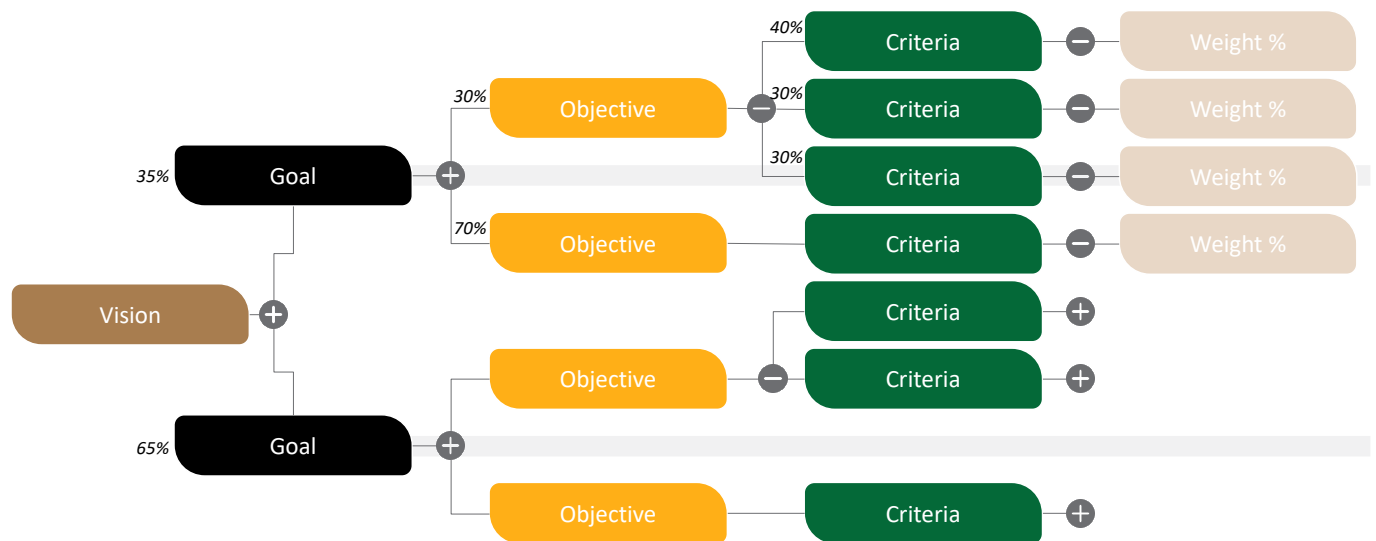
Prioritisation in a capital expenditure framework refers to the process of ranking and selecting investment projects based on their relative importance, measured in terms of their strategic alignment. This is typically done to ultimately allocate limited resources to the most deserving projects and ensure that the organization's goals and objectives are met most efficiently and effectively.

Multi-criteria assessment frameworks are often used in prioritisation, as they provide a systematic and comprehensive approach to evaluating and comparing projects. These frameworks consider multiple dimensions or criteria that are relevant to the organization, such as financial performance, strategic alignment, risk, and impact.

In a multi-criteria assessment framework, each project is rated against each criterion using a set of predefined weights and scales. The ratings are then combined to generate an overall score or rank for each project, which can be used to determine its priority. The selection of criteria and their relative importance is determined based on the specific goals and objectives of the organization, as well as any relevant constraints or limitations.

Using a multi-criteria assessment framework can help organisations to make more informed and objective decisions about their capital expenditure priorities, by taking into account a wide range of factors and considering trade-offs between different criteria. This can lead to better alignment with strategic goals, improved allocation of resources, and increased return on investment.

Figure 8-1: Prioritisation Framework



8.6 Prioritisation Rationale

A prioritisation rationale is a written explanation that outlines the reasoning behind prioritising projects, initiatives, or investments. The criteria used in the prioritisation process and how each project was evaluated and ranked are detailed in the rationale. This document provides transparency and accountability in the decision-making process and allows stakeholders to understand why certain projects were given priority. To do that, this section of the document reflects a summarised compilation of the prioritisation rationale expressed across the various policies, plans and programmes of the municipality. This summarised compilation will form the bases upon which the MCA prioritisation framework will be configured through the excel based tool.

The prioritisation rationale is influenced by the strategic goals and objectives of the organization. It typically includes objectives, criteria, and weights associated with each. Having a clear Prioritisation rationale can help build trust and support among stakeholders and serve as a reference for future decision-making. The rationale is an important tool for ensuring that resources are allocated in a way that aligns with the organization's goals and objectives.

8.6.1 Input data – Strategic documentation

The first step to define the prioritisation rationale was through the evaluation and analysis of the strategic documentation of the Mogale City Local Municipality. This was done to independently identify the essence of the strategic rationale that should be modelled through the prioritisation tool, as defined across the various policy documents of the municipality. The value added of this step is then to centralise all priority-related statements. Strategic documentation that was provided included:

Table 8-2: List of Sources

List of Sources	Date Published
Mogale City Integrated Development Plan	2023-2024
Long-Term Financial Planning Policy	2023-2024
Mogale City Spatial Development Framework	2022-2027
Mogale City Strategy Plan	2015
Climate Change Mitigation Strategy Report	2014
Mogale City Tourism Strategy	2013
Mogale City Rural Development Strategy	2012
Environmental Management Framework	2011
Mogale City Local Economic Development	2010

8.6.2 Input data – Prioritisation Rationale

Table 8-3 shows a summary of the findings concluded from the input data discussed above. The summary comprises three elements. The first element is a criterion grouping, the second is the prioritisation expression identified, and the third is a reference to the expression identified. The purpose of this document is neither to reiterate the statements made in the relevant documents nor to answer the question of “why” certain strategic positions are made, but rather to distil them into harmonised findings, which will be used to inform measurable criteria as part of the prioritisation framework that will be used to scientifically determine a priority of capital projects, in line with each finding.

Table 8-3: Prioritisation Rationale Input

Criteria Grouping	Rationale Input	Spatial Development Framework (SDF)	Integrated Development Plan (IDP)	Long-Term Financial Planning Policy	Local Economic Development Strategy	Mogale City Strategic Plan 2015	Climate Change Mitigation Report	Tourism Strategy 2013	Rural Development Strategy 2012	Environmental Management Framework
Economic	Promotion of the Rural Economy.	Pg 57			Pg 20					
	Encourage & facilitate Rural tourism.	Pg 57			Pg 116			Pg 27	Pg 32	
	Promote the Tourism & Hospitality Industry.	Pg 57	Pg 88					Pg 39		
	Encourage Township Economy.	Pg 57								
	Support Economic development and job creation.	Pg 57	Pg 117		Pg 148	Pg 5		Pg 63		
	Encourage and support Township Tourism	Pg 57	Pg 88 Pg 89		Pg 132	Pg 5		Pg 27		
	Provision and maintenance of basic services and infrastructures through revenue-generating assets (health care, stormwater, waste infrastructure, roads etc).	Pg 62	Pg 92		Pg 128	Pg 5		Pg 64	Pg 32	
	Support areas with higher populations through the provision of technical services and infrastructure. Promotion of higher density developments goes into mixed-use areas around the nodes and along corridors	Pg 15	Pg 78		Pg 106					
Financial	Encouraging an economic enabling environment where external funding is encouraged.	Pg 17	Pg 90	Pg 5	Pg 180			Pg 75	Pg 47	
	Encourage affordable and sustainable development.	Pg 95	Pg 109		Pg 30	Pg 8		Pg 100		
Social	Support social housing projects.	Pg 57	Pg 39		Pg 33	Pg 5				
	Facilitate the development of sustainable rural residential developments.	Pg 57								
	Provision of reliable basic services and community amenities including, such as educational, cultural, health, welfare and safety and security services	Pg 103	Pg 50		Pg 43	Pg 2 App B			Pg 4	
	Address issues of transformation and spatial integration through the support of underprivileged communities in Mogale City.	Pg 37	Pg 50		Pg 106	Pg 5			Pg 91	
	Intensify public investments in infrastructure & social services in existing nodes	Pg 95	Pg 79		Pg 70	Pg 2				
Technical	Promotion of efficient and sustainable development in Mogale City through the provision of basic services	Pg 102	Pg 109							
	Urbanisation through the provision of existing services	Pg 57	Pg 78		Pg 26		Pg 19			
Spatial	Promotion of densification in specific areas, to ensure more efficient use of resources.	Pg 11	Pg 77		Pg 26		Pg 19			
	Creation, strengthening and enhancement of development corridors (Tourism Corridor and N14 development)	Pg 11	Pg 103		Pg 98				Pg 50	
	Support the development of mixed uses in the nodes characterised by high-intensity activity & higher-density residential development.	Pg 57	Pg 78							
	Demarcate & restrict development within the confines of the urban boundary.	Pg 57	Pg 78							
Environmental	Protect the Critical Biodiversity Areas and Ecological Support Areas.	Pg 27	Pg 45							Pg 117 Pg 52
	Nurture & protect the rural environment in general & nature reserves by minimizing urban sprawl and development.	Pg 95	Pg 78		Pg 95					Pg 118
	Support projects that respond to climate change.	Pg 61	Pg 46			Pg 2	Pg 24			
	Protection of land that has high agricultural potential.						Pg 20		Pg 43	Pg 64
	Protection of land that has Geology, Dolomitic and Geohydrology sensitivities.								Pg 43	Pg 66 Pg 67

8.7 Prioritisation Criteria

The Capital Prioritisation Model (CPM) incorporates the prioritisation rationale by using the range of categories across economic, social, technical, strategic, and environmental dimensions to ensure that projects align with the municipality's overarching goals and objectives. Each criterion plays a vital role in determining the project's potential impact and

contribution to the overall development and strategic goals of the municipality. Stemming from the prioritisation rationale, these criteria include economic, social, technical, strategic, and environmental dimensions which will be discussed extensively in the following section.

8.7.1 Economic Criteria

The economic criterion in the CPM assesses the extent to which projects in the municipal capital budget contribute to the growth of the local economy and enhance the economic well-being of residents. The economic alignment score is calculated based on several distinct categories, as outlined below:

- **Population density:** this category helps assess the level of demand and potential impact of the projects on the local economy. Higher population density may indicate a greater need for certain types of infrastructure or services, which can influence the prioritisation and feasibility of the projects. Concerning the promotion of densification and reducing urban sprawl, this criterion ensures projects that are targeted in the appropriate areas.
- **Revenue-generating assets:** This category considers revenue-generating assets, which analyse the potential income generated by the projects. This assessment helps determine the financial impact and sustainability of the proposed initiatives, ensuring they contribute positively to the municipal economy. This ties in with growing the economy through investing in assets that are revenue-generating, either through the maintenance or upgrading of current assets.
- **Catalytic projects:** these projects are identified as crucial for stimulating economic growth and development within the municipality. They are carefully considered and given priority based on their potential to have significant positive effects on the municipal economy and the well-being of residents. Naturally, by including projects of this catalytic nature, jobs will be created, and the overall economy will grow, ensuring alignment with the prioritisation rationale.
- **Economic activity index:** this index measures the overall economic vitality and productivity of the municipality. It considers factors such as employment rates, business activity, and industry growth to gauge the potential economic benefits of the projects. This assists decision-makers when deliberating on which project adds most to the economic growth of Mogale City.

In conclusion, the economic criteria in the CPM assess how projects in the municipal capital budget contribute to the local economy and residents' economic well-being, considering factors such as population density, revenue-generating assets, catalytic projects, and the overall economic activity index.

8.7.2 Financial Criteria

The financial alignment theme of the CPM evaluates the degree to which projects in the municipal capital budget are considered to be affordable or funded by another institution, to align the capital budget towards improving the fiscal position of the Municipality. The financial alignment score is calculated within the following distinct categories, namely:

- **External Funding:** explores the availability of financial support from other institutions, such as grants, loans, or partnerships. This is done to determine whether the projects can be partially or fully funded through external sources, reducing the financial strain on the municipality. Concerning the prioritisation rationale, Mogale City is encouraging an economically enabling environment where external funding is encouraged.
- **Affordability:** examines whether the projects can be feasibly financed within the municipality's existing financial resources. It considers the municipality's revenue streams, budget constraints, and financial obligations to ensure that the proposed projects can be realistically implemented without placing an excessive burden on the municipality's finances. Using this criterion, the prioritisation model ensures that the municipality uses its resources effectively and sustainably, keeping in line with its objectives of promoting economic development and the growth of the economy.
- **Monetary Impact:** this criterion calculates the total project budget over its lifespan. This value is compared to the maximum project budget to determine the percentage of the budget allocated to the project, therefore if a project requires a high percentage of the budget, it will have an impact on the project's score. This is an important metric as it helps assess the financial implications of projects and their alignment with available resources. By considering the monetary impact, Mogale City officials can evaluate the feasibility and affordability of projects within the given budget constraints.

In summary, the financial criteria in the CPM assess the affordability and funding sources of projects in the municipal capital budget, considering external funding opportunities, affordability within existing resources, and the monetary impact on the municipality's budget. These criteria ensure the alignment of the capital budget with the fiscal position of the municipality and promote effective and sustainable use of resources.

8.7.3 Social Criteria

The social alignment theme of the CPM assesses the extent to which projects in the municipality align with addressing the needs of areas with the highest demand and the most vulnerable communities. The social alignment score is calculated based on several distinct categories, outlined below:

- **Social Facilities:** This category examines the availability and accessibility of essential social infrastructure such as schools, healthcare facilities, community centres, and public services. The assessment aims to ensure that projects prioritise areas with a lack of adequate social facilities, addressing the needs of the community. Using this criterion, Mogale City ensures it stays true to its priorities of community development and promoting sustainable development.
- **Socially Responsible Units:** To further reiterate community development in Mogale City, this category assesses the involvement of relevant government departments, agencies, or organisations responsible for providing community services and social support in specific areas. It ensures that the projects are coordinated and aligned with the responsible units, facilitating effective implementation and delivery of services. Depending on the implementing Units, certain projects will receive higher scores when promoting community development.
- **Developmental Facilities:** This pertains to departments that prioritise the upliftment of people through the provision of soft infrastructure assets. These assets encompass various elements related to community development, recreation, council facilities, housing, and recycling facilities. Projects falling within these categories receive priority within the prioritisation model, as they align with Mogale City's mandate of promoting social and community well-being. By considering these developmental facilities, the prioritisation model ensures that projects addressing the needs of the community and enhancing their quality of life are given due importance and consideration.

In conclusion, the social criteria in the CPM assess the alignment of projects with the needs of areas with high demand and vulnerable communities, considering social facilities, involvement of responsible units, and developmental facilities. These criteria prioritise community development, address social needs, and enhance the well-being of residents in Mogale City.

8.7.4 Technical Criteria

The technical alignment theme of the CPM assesses the extent to which projects in the municipal capital budget align with priority programs, asset management plans, and the technical analysis and modelling conducted by utility services departments. The technical alignment score is calculated based on several distinct categories, which are outlined below:

- **Infrastructure Services:** According to the prioritisation rationale of Mogale City, it is important to maintain and provide basic services and infrastructures (health care, stormwater, waste infrastructure, roads etc). Therefore, this category assesses the alignment of projects with the provision and improvement of essential technical services, such as water supply, sanitation, electricity, transportation, and communication infrastructure. It ensures that the projects contribute to enhancing the quality and accessibility of these services in the municipality.
- **Accessibility Index:** The Accessibility Index is a measure used to evaluate a project's accessibility to primary, secondary, and tertiary roads within the municipality of Mogale City. It assesses the ease of reaching a project location based on its proximity and connectivity to these road networks. The index considers the strategic importance of road accessibility in enabling efficient transportation and services for both residents and businesses. Projects that demonstrate better accessibility to the road network are considered more favourable within the prioritisation model, as they contribute to improved mobility, connectivity, and convenience for stakeholders within Mogale City.

In summary, the technical criteria in the CPM assess the alignment of projects with priority programs, asset management plans, and technical analysis, considering infrastructure services and the accessibility index. These criteria ensure that

projects contribute to the provision and improvement of essential technical services and enhance accessibility within Mogale City, promoting efficient transportation, connectivity, and convenience for residents and businesses.

8.7.5 Spatial Criteria

The spatial alignment theme of the CPM assesses the extent to which projects in the municipal capital budget align with the spatial objectives and strategic outcomes outlined in the municipality's strategic guiding document. The alignment score is calculated based on several distinct categories, which are outlined below:

- **Functional Areas:** This category examines the overall jurisdiction and boundaries of the municipality, considering its specific functional role within the broader region. It ensures that projects align with the municipality's designated functional area and contribute to its overall strategic goals and objectives. Concerning the promotion of densification and reducing urban sprawl, this criterion ensures projects that are targeted in the appropriate areas.
- **Priority Development Areas:** these areas are identified as having a higher priority for development based on strategic considerations. These priority areas have been identified through the SDF and these areas are primarily based on the:
 - Nodes: Primary, Secondary, Local Nodes, Tourism Agriculture Nodes, Industrial Nodes, Densification Areas, Precincts. Further details can be found in Section 2.2.2 Nodal Development which is found in the Spatial Development Analysis Chapter.
 - Corridors: Developmental, Intra-Regional and Activity Spines

The assessment ensures that projects prioritise these areas, focusing resources and efforts on their growth and improvement to achieve the desired strategic outcomes.

- **Urban Development Boundary:** it delineates the boundary or limit within which urban development is allowed or encouraged. The assessment ensures that projects stay within the designated urban development boundary, supporting the municipality's efforts to manage and guide urban growth effectively.
- **Environmental Protection Areas:** assesses the location of projects concerning specific environmental designations, such as the World Heritage Site and the Tourism Corridor, as outlined in the municipality's strategic documents. Projects that fall within the World Heritage Site receive a lower score, reflecting the need for heightened protection and preservation of this environmentally significant area. On the other hand, projects located within the Tourism Corridor receive a higher score, recognising the strategic importance of promoting tourism and sustainable development in that specific area. This criterion ensures that projects are evaluated based on their alignment with the municipality's environmental objectives, striking a balance between conservation and appropriate development within environmentally sensitive areas.

The spatial criteria in the CPM assess the alignment of projects with the municipality's functional areas, priority development areas, urban development boundaries, and environmental protection areas. These criteria ensure that projects contribute to the strategic goals and objectives of the municipality, focus resources on priority areas, manage urban growth effectively, and strike a balance between conservation and appropriate development in environmentally sensitive areas.

In conclusion, the prioritisation of capital projects is achieved through the economic, financial, spatial, social, and technical criteria ensuring a holistic approach to decision-making and resource allocation in Mogale City. The economic criteria assess the projects' contribution to local economic growth and residents' well-being, while the financial criteria evaluate affordability and funding sources. The spatial criteria focus on alignment with strategic objectives and sustainable development principles, whereas the social criteria prioritise addressing community needs and promoting social well-being. Lastly, the technical criteria ensure projects align with infrastructure services and technical analyses. By considering these diverse criteria, the prioritisation process enables the municipality of Mogale City to make informed and balanced decisions that benefit the economy, community, environment, and long-term sustainability.

8.8 The Mogale City Capital Prioritisation Tool

A prioritisation tool plays a crucial role in streamlining and optimising the project selection process. This tool serves as a systematic and data-driven approach to assess and rank projects based on their alignment with the established criteria. By utilising the prioritisation tool, decision-makers in Mogale City Local Municipality can objectively evaluate

project proposals, allocate resources efficiently, and prioritise initiatives that yield the greatest overall benefit for the municipality.

CP3 is an acronym for “Collaboration Planning Prioritisation Performance”. CP3 is a centralised decision support system, configured to the requirements and specific preferences of each client.

To do this, it comprises four modules. These four modules facilitate the business processes that are associated with the capital planning environment within an organisation. It provides one place where all the capital needs of the organisation reside and serves as a project preparation portal. The role of CP3 in the capital planning environment has been recognised internationally and locally, as a fundamental tool to support strategic alignment and decision-making. The CP3 platform is critical in compiling a legitimate Capital Expenditure Framework – specifically when it comes to the following three abilities:

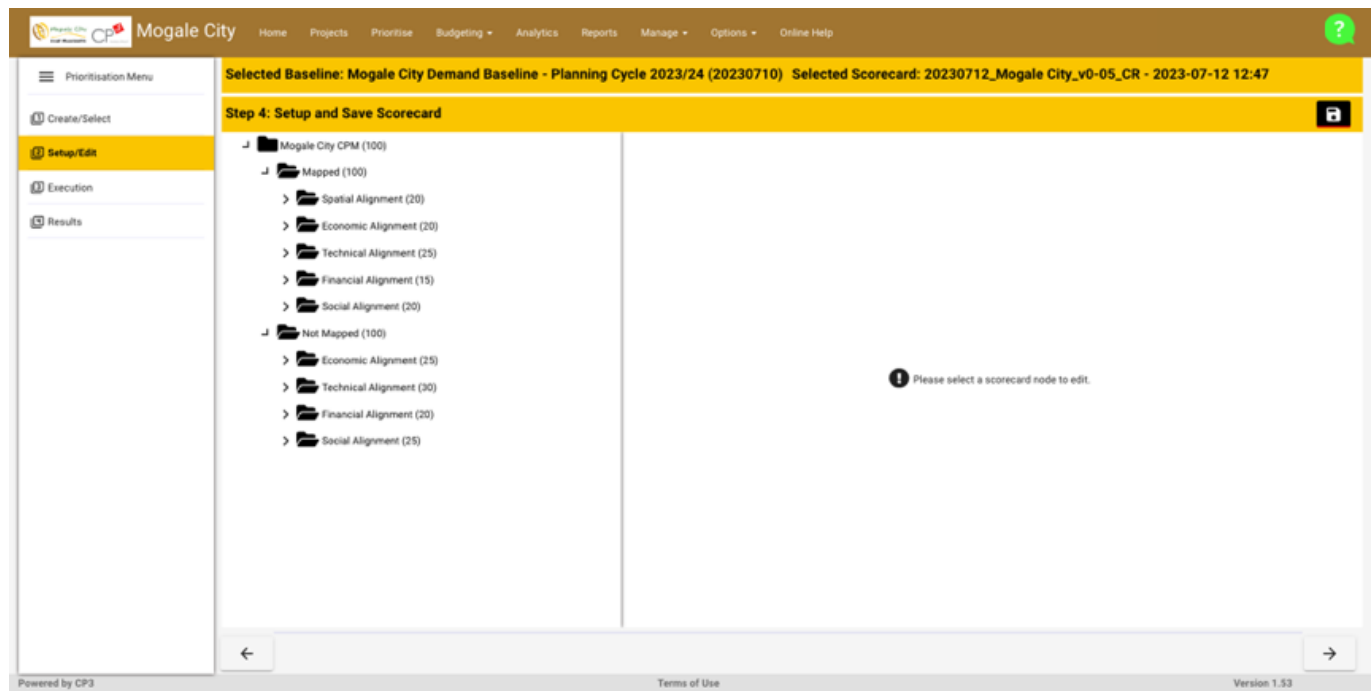
- The ability to simultaneously evaluate projects against a prioritisation model of the municipality;
- The ability to run various budget scenarios in collaboration with the municipality, and;
- The ability to spatially report on capital demand, and planned capital expenditure over various years, in terms of various attributes.

The following figures display both the homepage of CP3 together with the typical Prioritisation for Mogale City, as developed in the CP3 system.

Figure 8-2: Prioritisation Tool



Figure 8-3: Screenshot of the Prioritisation Model in CP3



8.9 The Output of the Prioritisation Application and Results

A multi-criteria assessment framework is a decision-making tool that helps in evaluating different options based on multiple criteria. It involves a step-by-step process that assigns scores to each alternative based on their performance against the criteria. The scores are then converted into points for each criterion and project. The weightage of each criterion is pre-determined using a points system, where a higher number indicates a greater level of importance. By applying this framework, decision-makers can assess multiple options objectively, based on their performance against various criteria. It helps in identifying the most suitable option that meets the needs of the organisation or project. This approach also ensures transparency in the decision-making process, as the criteria and weightage assigned to each criterion are clearly defined beforehand.

The outcome of a multi-criteria assessment framework is a set of scores or rankings for each alternative being evaluated, based on their performance against multiple criteria. The scores are typically presented as a set of numbers, where each number represents the performance of a specific alternative on a particular criterion.

8.10 How to determine prioritisation results

- Step 1: Establishing Goal Preferences: Weights for goal preferences are determined through stakeholder consultations to prioritise goals.
- Step 2: Define Objective Preferences: Objectives are assigned varying importance to reflect their contribution to the project's score.
- Step 3: Setting Evaluation Criteria: Evaluation criteria are defined to assess objectives without unfair discrimination.
- Step 4: Data Collection & Standardisation: Project data, including details like name, department, scope, cost, and duration, is collected and standardised.
- Step 5: Calculate Scores: Projects are ranked based on their attributes using a multi-criteria assessment framework.
- Step 6: Evaluate Outcome: The model is calibrated to ensure reliable and justifiable results.

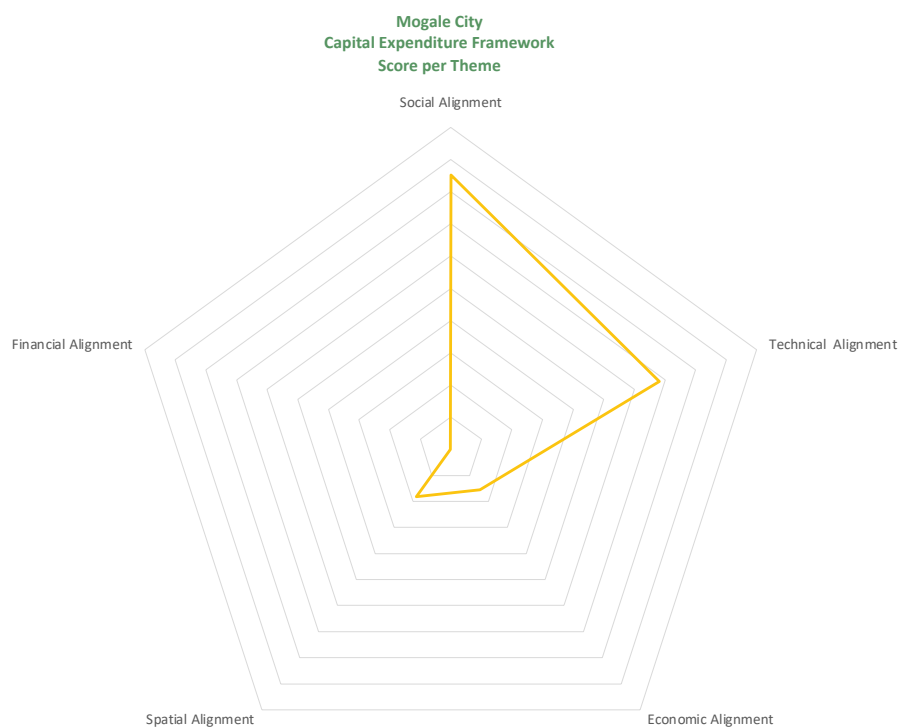
8.1.1 Prioritisation Results

The following subsection offers a comprehensive analysis of the relative ranking obtained through the implementation of the CPM. This analysis of the results and relative ranking will empower the municipality to make strategic decisions regarding project prioritisation. The derived ranking will provide valuable insights and contribute significantly to the budget scenario routine.

8.1.1.1 Project Scores

Cluster analysis is a statistical technique used to group data points that share similar characteristics or features. In the context of the CPM, cluster analysis can be used to group projects based on similarities in their objectives, resource requirements, or potential impact. This can be illustrated through the number of project scores which relates to the different branch alignments as shown in Figure 8-4.

Figure 8-4: Average Score per Prioritisation Branch



The results show the following:

- Majority of projects subjected to the model align best with the social branch of the model, which is indicative of community development initiatives and spatial transformation aimed at rectifying the poverty and social vulnerability within the municipality. This suggests that the projects prioritised are addressing the needs of the community, by promoting social equity, and improving the overall well-being of residents.
- The prioritisation of projects that align with the technical objectives of the model is driven by the pressing need to address the challenges posed by poor infrastructure quality. Water outages, sewage overflows, and traffic congestion are among the problems caused by the inadequate infrastructure, as highlighted in various articles and strategic documents. To improve essential services and overall convenience for stakeholders, the model prioritizes projects aimed at enhancing the municipality's infrastructure. By focusing on better infrastructure, the model aligns with Mogale City's vision to create a more sustainable and efficient environment, mitigating the existing challenges and benefiting the well-being of Mogale City's residents.
- While the model includes spatial criteria, only a few projects align well with these criteria. Therefore, improved locational analysis is necessary to determine which projects the municipality should implement. This does not

imply that the model doesn't align with the SDF, but rather highlights the need for more accurate GPS information to be captured.

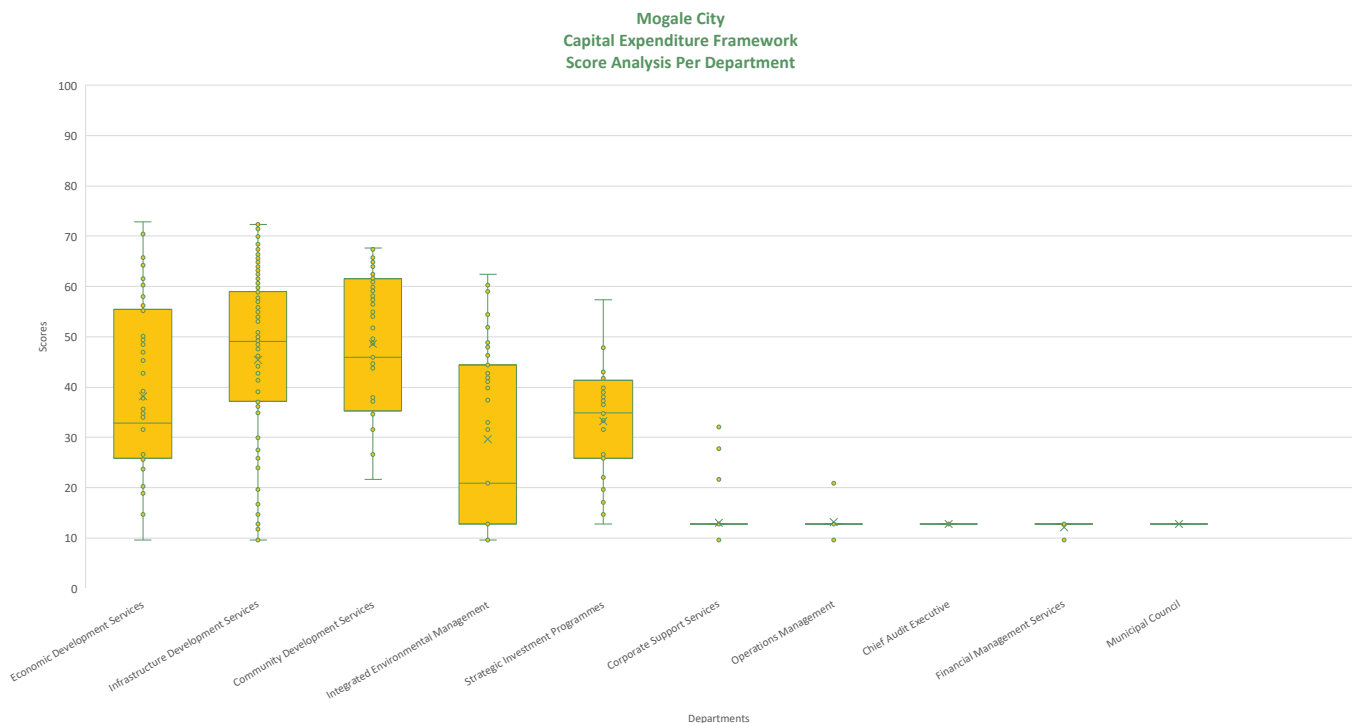
- In terms of economic alignment, the results suggest that the projects are moderately aligned with the municipality's economic goals and have the potential to contribute to the growth and economic well-being of the municipality.
- The branch of the prioritisation model related to financial principles contributes least to total project scores signifying that either more financial alignment criteria are required or that more effective planning is required in terms of project budgeting. This highlights the importance of better project preparation prior to budget scenarios to ensure the fiscal sustainability of the projects.

Overall, while there is a strong focus on social alignment, attention needs to be given to improving financial alignment and spatial alignment. These findings can guide the municipality in making informed decisions and adjustments to prioritise projects that best align with their strategic goals, maximise benefits for the community, and ensure efficient resource allocation.

8.11.2 Score Distribution

When comparing project scores within Mogale City, it can help identify which projects are more strategically aligned with the municipality's strategic goals and rationale. Looking at the overall scores of the projects within the municipality are illustrated in the box and whisker diagram shown in Figure 8-5. A box and whisker diagram is a visual tool that helps to summarise a range of data points. It shows the median score of a unit, the minimum and maximum scores, and the distribution of scores between the 25th and 75th percentile. The average score of the unit is depicted by the "x". the ends of the whiskers are the maximum and minimum scores. Projects scoring between the minimum value and the 25th percentile are arranged along the bottom whisker, and projects scoring between the maximum value and the 75th percentile are arranged along the top whisker and the box.

Figure 8-5: Score Distribution per Department



The results show the following:

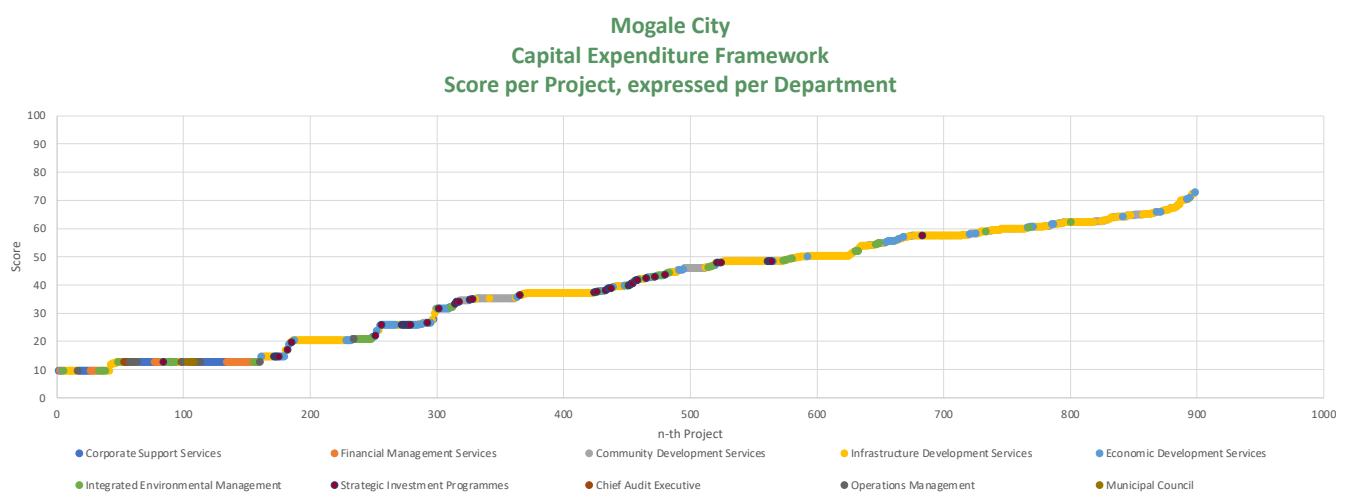
- **Outliers:** There are a few outliers in the dataset, especially in the departments with the lower scores, namely Corporate Support Services, Operation Management and Financial Management Services. Overall, the spread of scores or values within the different departments being compared is relatively consistent and there are no significant deviations from the norm. It indicates a certain level of stability and uniformity in the projects which are being measured, giving all projects a chance to score fairly.
- **Best-Spread Scores:** Three units, Infrastructure Development Services, Economic Development, and Community Services, have the highest scores and demonstrate the best spread of scores within Mogale City. The municipality faces numerous challenges such as poverty, vulnerability, crime, unemployment, pollution, inadequate infrastructure, and governance concerns. Addressing these issues requires efforts in job creation, education improvement, economic growth stimulation, environmental stewardship, infrastructure investment, service provision enhancement, and governance reform. Therefore, the strong performance and balanced focus on revenue-generating assets and social/community development initiatives in these units indicate that the prioritisation model is responsive to the challenges faced by Mogale City.
- **Skewness:** The Chief Audit Executive, Corporate Services, and Municipal Council Department had the least number of projects that were scored, which shows a skewness to the lower end of the scoring range. However, this is expected as these units may have fewer projects overall, and their mandates may not primarily involve capital expenditure (CAPEX) infrastructure provisioning in the traditional sense.

This analysis enables Mogale City to make informed decisions about supporting departments and streamlining budgeting processes, resulting in more effective project implementation throughout the municipality. By evaluating unit performance, allocating resources efficiently, planning strategically, promoting balanced development, and enhancing transparency and accountability, the municipality can prioritise projects within different units.

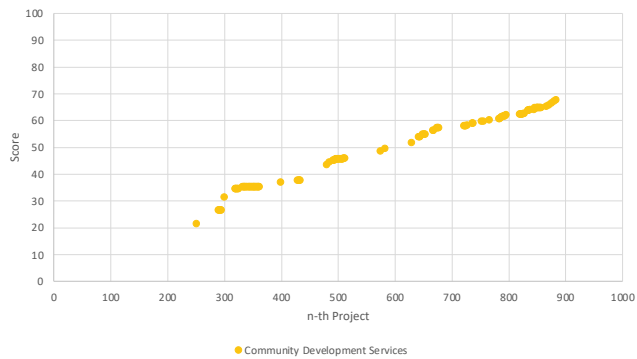
8.11.3 Project Score Analysis per Department

The prioritisation model is used to rank projects in order of importance. To validate the model, the distribution of scores of projects must be considered. A fair score distribution should show a gradual increase in the number of projects concerning the score. A clustered distribution of scores could indicate bias within the model or underrepresentation of data attributes. For example, if most projects do not have a location or a budget, then the majority of projects will score low resulting in a clustered distribution – even if the model is well calibrated. A project score analysis per department in Mogale City is illustrated in Figure 8-6 below.

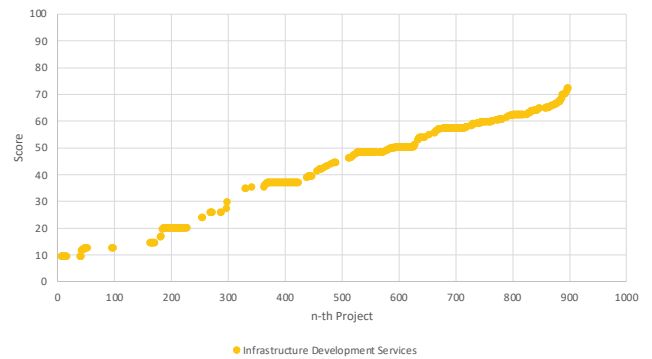
Figure 8-6: Score per Project for All Departments



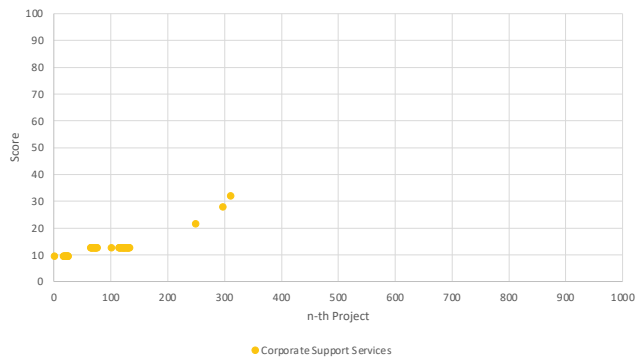
**Mogale City CEF
Community Development Services
Score per Project**



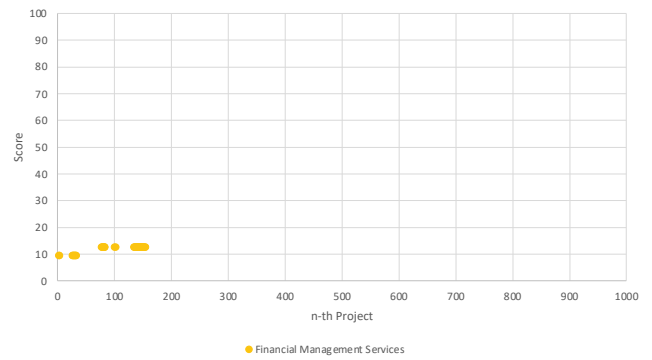
**Mogale City CEF
Infrastructure Development Services
Score per Project**



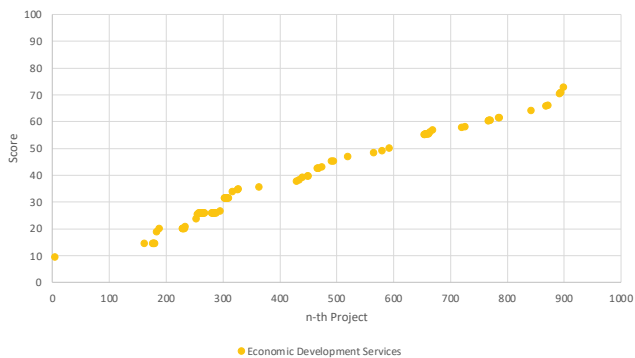
**Mogale City CEF
Corporate Support Services
Score per Project**



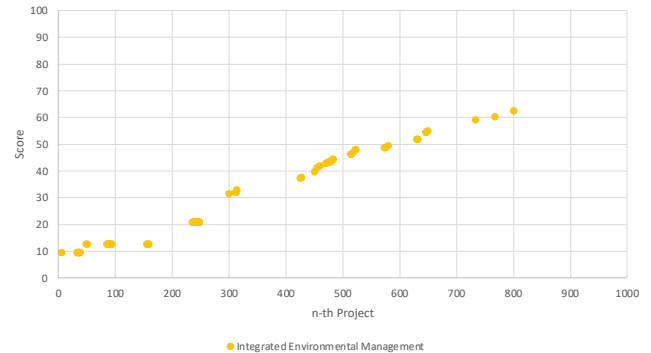
**Mogale City CEF
Financial Management Services
Score per Project**

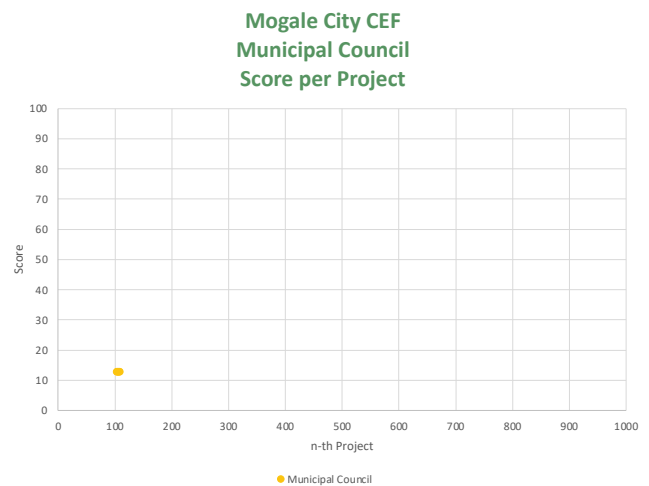
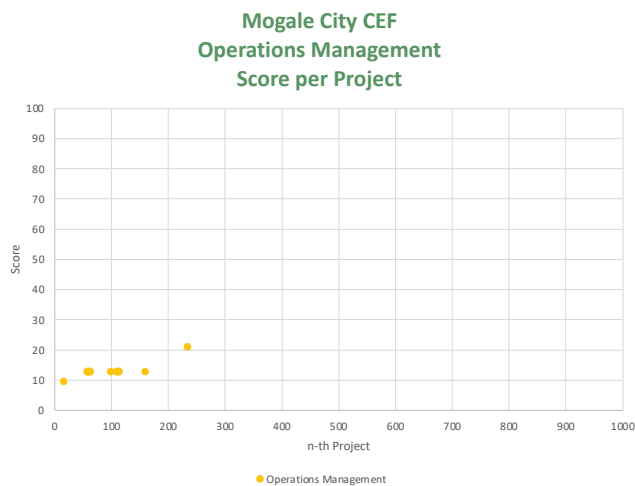
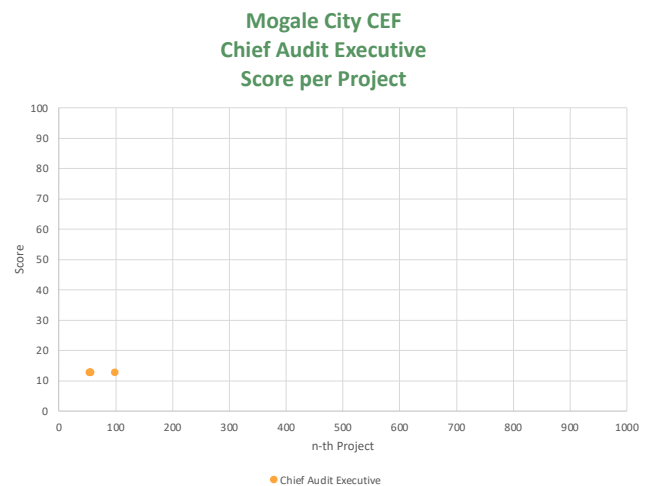
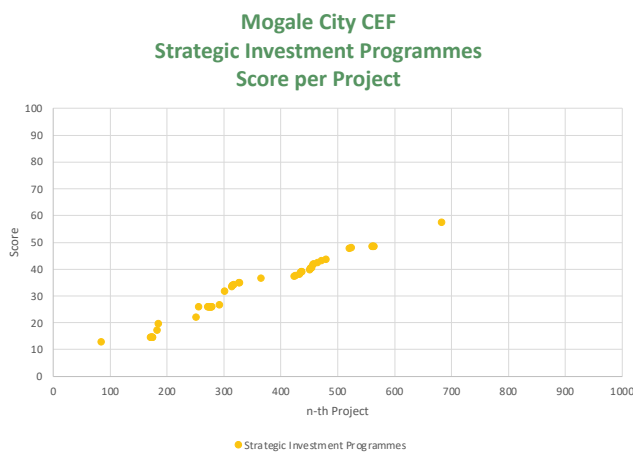


**Mogale City CEF
Economic Development Services
Score per Project**



**Mogale City CEF
Integrated Environmental Management
Score per Project**





From Figure 8-6 one can note the following:

- **Gradual Increase in Score Distribution:** The main trend observed in the score distribution is a gradual increase, particularly for projects related to Infrastructure Development Services, Community Development Services, and Economic Development Services. This indicates that these units have consistently performed well and have achieved higher scores, suggesting that the prioritisation model has been unbiased in evaluating these projects.
- **Lack of Wide Score Spread:** In contrast, the Chief Audit Executive, Operations Management, and Municipal Council departments show a lack of wide score spread in their projects. This means that the scores for their projects are relatively close to each other, indicating less variability or diversity in performance. Additionally, these departments do not represent high scores, suggesting that the projects that are being subjected are not CAPEX projects.

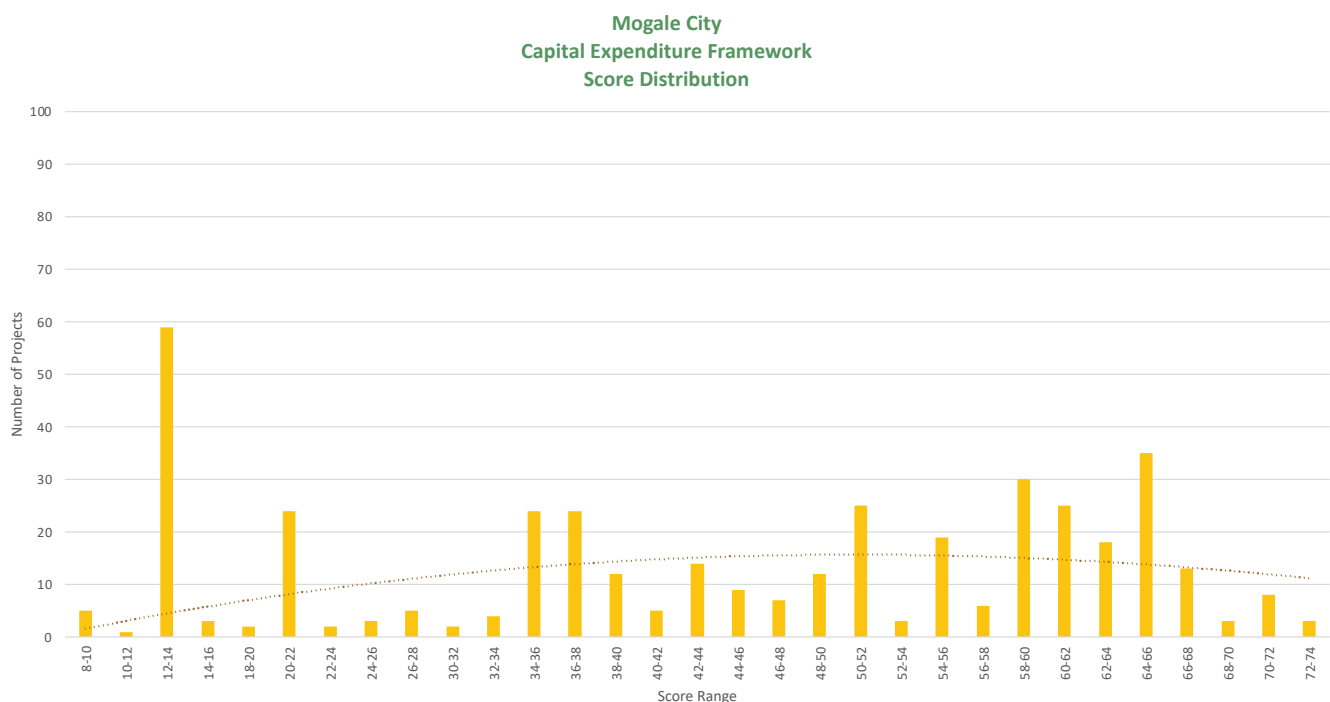
These observations hold significant value for several reasons. Firstly, they provide reassurance that the prioritisation model is not generating unfair or biased outcomes. Secondly, they indicate that the model accurately reflects Mogale City's key challenges concerning aging infrastructure, social vulnerability, and the imperative to establish an

economically sustainable municipality. Although some departments exhibit limited score variability, this suggests the inclusion of additional criteria within the model to facilitate a more comprehensive evaluation of non-capital projects.

8.11.4 Project Distribution per Project

Score distribution is an important tool for visualising and analysing prioritised projects. By looking at the distribution of scores, one can identify trends and patterns in the data, and determine whether there are any gaps or biases that need to be addressed. One measure of distribution is skewness, which indicates the extent to which the data is asymmetrical. A perfectly symmetrical distribution has a skewness of zero, while a positive skewness indicates that the data is skewed to the right, with a longer tail on the positive side of the axis. In the case of Mogale City, the project distribution per project is depicted in Figure 8-7.

Figure 8-7: Score Distribution



From Figure 8-7, the results show the following:

- **Positive Skewness:** The data is skewed to the right indicating a lack of standardisation in project planning practices within the municipality. Certain projects may be lacking the necessary attributes to participate in the scoring process, or they possess the attributes but do not score well based on the prioritisation model. By examining projects with lower scores, alternative project preparation and planning practices can be explored to improve their outcomes and alignment with the prioritisation model. Introducing standardised practices will ensure that mandatory information is collected, leading to more accurate and comparable project evaluations.
- **Adoption of Prioritisation Methodology:** The skewed data emphasises the necessity for the municipality to adopt a prioritisation methodology. Implementing a fair and systematic approach to score all projects will help address the issues caused by the skewed data distribution. It will ensure that projects are evaluated consistently and fairly, leading to improved project planning and decision-making.
- **Maturing the Approach to Project Planning:** The combination of implementing a prioritisation methodology and mandatory information collection will enhance the municipality's approach to project planning. These measures will contribute to a more comprehensive and standardised process, resulting in better project outcomes and resource allocation.

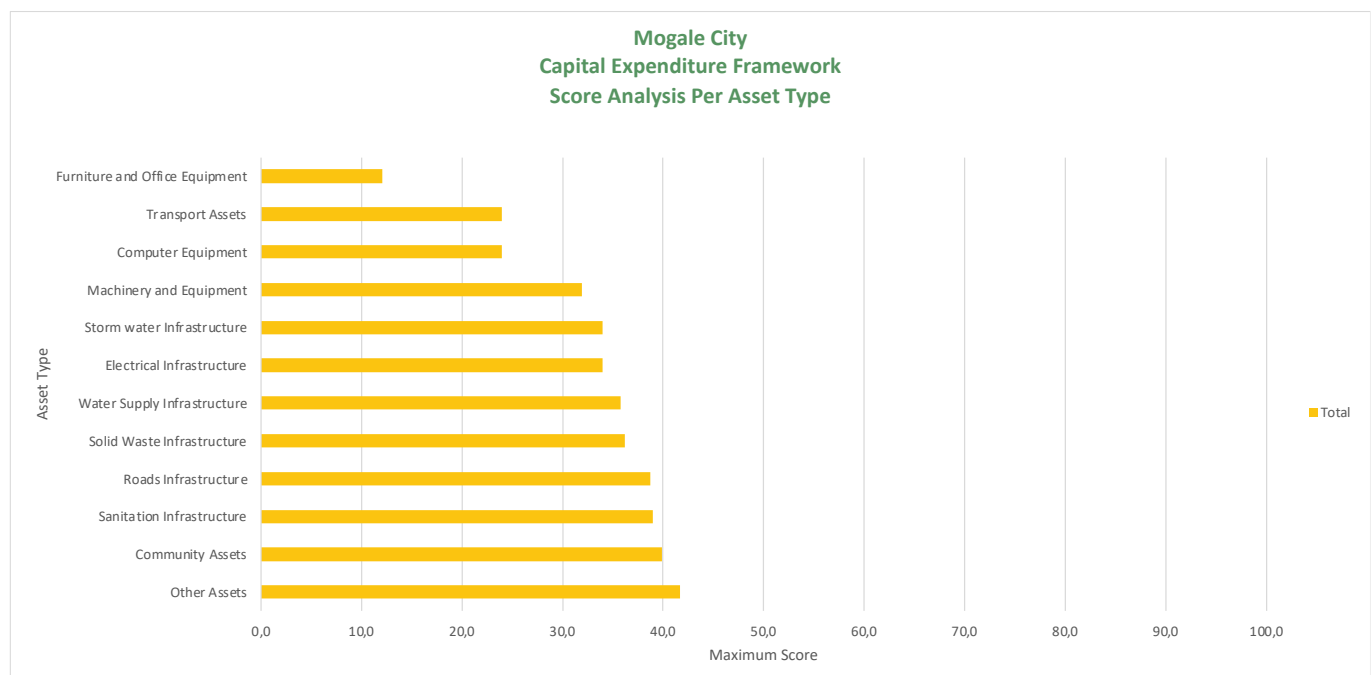
Seeing that, Mogale City faces significant challenges due to inadequate resources and financial constraints, these steps contribute to more effective and equitable project planning, resulting in improved project outcomes and resource allocation decisions within the municipality. These limitations hinder effective governance and service delivery,

compromising service quality and delaying infrastructure development. Insufficient funding makes it difficult to allocate resources for essential programs, infrastructure maintenance therefore, having it is essential to adopt a prioritisation model to ensure the effective management of limited resources.

8.11.5 Project Scores per Asset Type

As previously indicated the prioritisation model endeavours to achieve congruence between investment efforts by the municipality and the priorities established in strategic documents for the Mogale City Municipality. By considering the guiding principles and goals of these documents, the model seeks to promote a close correlation between investment efforts and capital infrastructure investments, including both hard and soft infrastructure. Figure 8-8 illustrates the maximum score per asset type, indicating which types of assets captured in the portfolio of projects, performed best in response to the prioritisation model and reflecting the priorities outlined in the strategic documents reviewed in Section 8.6 earlier.

Figure 8-8: Community Needs - Score Analysis per Asset Type



The results show the following:

- The prioritisation model in Mogale City is responding to the challenges faced by aligning well with "Other Assets," specifically Social Housing and Community Assets. This alignment reflects the prioritisation rationale of the model, which emphasises enabling community development. The model recognizes the importance of providing social housing and community facilities and services that promote the growth and advancement of residents in Mogale City. By prioritising these assets, the model aims to address the specific needs of the community and overcome the current backlog of housing, social vulnerability and poverty.
- Apart from Social Housing and Community Assets, the model also scores other infrastructure assets such as Sanitation Infrastructure, Roads and Water Infrastructure, and Solid Waste infrastructure favourably. This indicates that the model is not biased towards prioritising only hard infrastructure projects. It recognises the importance of diverse assets like community assets and ICT assets, ensuring a balanced approach to address the challenges in the municipality. By considering a variety of assets, the model aims to meet the needs of the community comprehensively and promote inclusive development in Mogale City.

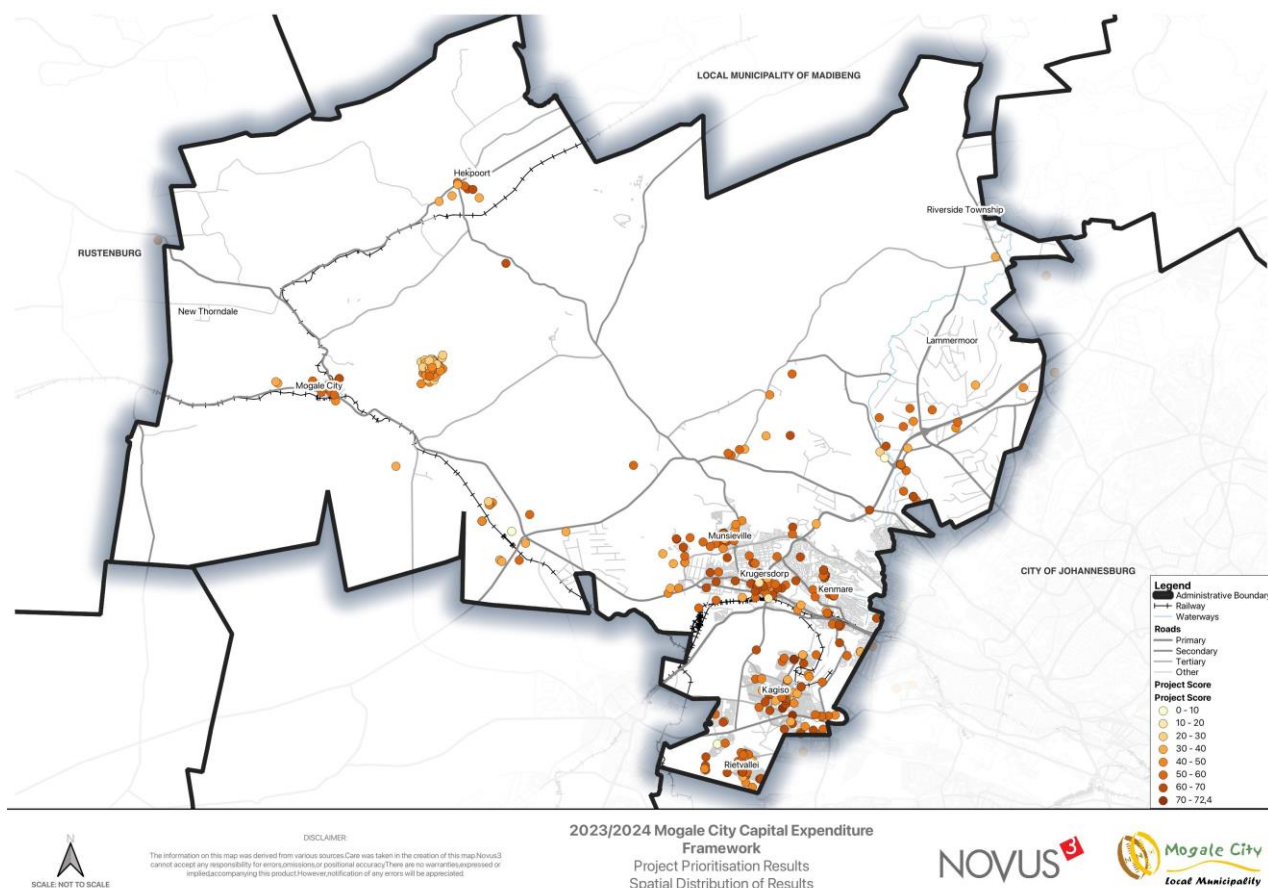
The prioritisation model effectively responds to challenges of poverty, social vulnerability, and inadequate infrastructure in Mogale City. It achieves a balance between hard and soft infrastructure, prioritising housing and community infrastructure. Hard infrastructure like roads, water supply, and housing addresses aging infrastructure issues. Soft infrastructure, including computer equipment assets, community assets, and transportation, uplifts the

community. The model aligns with the governing policy, focusing on assets that benefit the community and generate revenue, allowing Mogale City to meet community needs while pursuing financial goals.

8.11.6 Spatial Distribution

The prioritisation tool provides a significant advantage in that it allows for both alphanumeric and spatial data analytics. This means that spatial inputs can be used to prioritise projects, allowing for a more targeted approach. This is not only a requirement under SPLUMA, but it is also an important policy objective under the IUDF. Spatially-based prioritisation ensures that projects are aligned with spatial strategy and are targeted towards the areas that need them the most from a spatial equity, spatial sustainability, spatial governance, and spatial planning perspective. This approach enables the public sector to make more informed decisions about where to allocate resources and can lead to better outcomes for the community. Ultimately, the use of spatial data analytics in the prioritisation process helps to ensure that resources are allocated efficiently and effectively, resulting in more equitable and sustainable development. Figure 8-9 represents the concentration of scores of projects spatially.

Figure 8-9: Generalised Spatial Representation of Project Scores



From Figure 8-9 respectively, the following can be explained:

- **Spatial Concentration:** the majority of projects are located in and around Krugersdorp, Munisville, Kenmare and Kagiso. Their relative concentration within the Activity Spines of the Municipality, clearly indicates that investment is aligned to the spatial structure (within the urban edge) of the municipality. This spatial concentration provides valuable insights for understanding the distribution and alignment of projects within the municipality. It suggests that investment and project planning decisions are focused on areas within the urban edge, where there may be higher population density, economic activity, or other factors that warrant greater attention and resources.
- **Development and Tourism Corridors:** The graph indicates that a few projects are scoring along the developmental corridor, which extends along the N14 and R28 highways, as well as the tourism corridor leading towards Magaliesburg. Although the scores for these projects may not be very high, they demonstrate

a good distribution of scoring within the model. This observation suggests that there is recognition and consideration given to projects along these corridors, which are likely to have developmental and tourism significance. While the scores may not be the highest, the distribution of scoring implies that the prioritisation model is appropriately capturing and evaluating the potential impact of projects within these corridors.

- **Projects in the Periphery and Outside Urban Areas:** Projects scoring lower are predominantly located in the periphery of the Mogale City provincial border or outside urban areas like Magaliesburg. These projects are situated on the outskirts of major urban areas, such as Krugersdorp. Additionally, projects in environmental areas also tend to score lower, reflecting the prioritisation of environmental protection and the preservation of protected areas.
- **Bunching of Scores near Magaliesburg:** It is interesting to note a clustering or bunching of scores towards the right of Magaliesburg. This indicates that there are several infrastructure upgrade projects taking place in this area within the municipality. Examples include the Magaliesburg Sewer Pump Station Upgrade and the Magaliesburg Wastewater Treatment Plant. The concentration of such projects suggests a targeted effort to enhance infrastructure and utilities in the Magaliesburg region.
- **Understanding the location patterns and the lower scores in the periphery and environmental areas is important for comprehensive planning and resource allocation. It highlights the municipality's commitment to protecting environmental assets and demonstrates a strategic focus on infrastructure development in specific areas, such as Magaliesburg.**

9 Budget Scenario Methodology

9.1 What is the difference between Prioritisation and a Budget Scenario

Prioritisation and budget scenarios are related but distinct concepts in the local government space. Prioritisation involves identifying and ranking the most important projects that a municipality should undertake based on their level of strategic importance and impact on the community. Prioritisation is typically done during the planning process, before the budget is developed, and involves determining which initiatives should receive the most attention and resources.

Budget scenario, on the other hand, involves allocating resources to the initiatives that have been prioritised. It involves creating a financial plan that outlines how much money will be allocated to each initiative, and how it will be spent. Budget scenarios are developed based on various factors, such as a municipality's financial resources, priorities, and objectives.

It is important to understand that just because an initiative is prioritised and deemed strategically important, it does not necessarily mean that it will be allocated funds in the current budget cycle. Budgets are developed based on available resources, and some priorities may have to be deferred or delayed until a municipality has sufficient funds to allocate to them.

The use of software/tools to facilitate the prioritisation and budget scenario process in local government can bring several benefits that can help streamline and optimize the decision-making process.

9.2 Preparing for a Budget Scenario

To initiate the process of applying a budget scenario, a number of input variables should be prepared. These variables provide the content of the budget scenario and how the budget scenario parameters are applied, in order to achieve a draft capital budget. These include:

- Baseline management;
- Project status, and;
- Relative project score.

9.2.1 Baseline Management

As part of the annual capital planning process, a baseline is generated for purposes of outlining projects and the capital demand required to implement these projects. Planned capital expenditure is captured according to a specific financial year in which a certain project may require budget and outlines the total lifecycle cost for each project. The source of funding is also captured in conjunction with the capital amount and includes own funding, borrowings or grant funding.

Baseline management refers to the creation and selection of a baseline as input to the budget scenario to allow for the consideration of the planned capital expenditure as captured through the planning process, together with a view on the planned capital expenditure or capital demand across a 10-year planning horizon and project statuses. During the budget scenario development process, the input baseline can be engineered based on the preference of a municipality to include either one of the following options:

- A demand only baseline which includes the capital demand budget as originally captured; or
- A combination of the capital demand budget captured and the outer years of a previously approved MTREF capital budget.

The Mogale City Local Municipality makes use of the second option and prepares a baseline which combines the outer years of the previously approved capital adjustment budget and the demand budget as captured during the capital planning process.

9.2.2 Project Status

Project status is considered as a first priority during the application of the budget scenario. The allocation of a projects status considers projects which are earmarked as Assets Under Construction (AUC's); committed projects from previous original or adjusted capital budgets and projects which are ready for implementation. A status is allocated to selected projects during the baseline management process and can include one of the following:

- **Committed** - Includes projects identified as AUC's, which are contractually committed, and previously formed part of either the approved capital budget or adjusted capital budget. Termination of a committed project will result in either legal or financial liability for the municipality. Given commitments made on these projects, the budget scenario methodology regards these projects as non-negotiable, irrespective of the CPM project score. Furthermore, projects with a committed status will be fitted to the budget scenario template based on the financial year in which budget is requested.
- **Provisioned-In** - Includes projects which previously formed part of either the approved capital budget or adjusted capital budget but not identified as contractually committed AUC's. Projects classified as provisioned-in include projects which are ready for implementation, but without contractual commitments in place. Termination of a provisioned-in project will not result in either legal or financial liability for the municipality. The budget scenario methodology regards these projects as having a higher priority than projects without a status, however the implementation timeframes are negotiable to an extent. Projects which form part of this category will be fitted to the budget scenario template based on the financial year in which budget is required, but only if there is sufficient capital budget available.

9.2.3 Relative Project Score

The Mogale City CPM is a systematic and objective methodology that provides a way to rank or sort a diverse set of projects into an order of importance based on each project's alignment to the strategic, spatial, social, economic, environmental and financial objectives of the municipality. The CPM identifies each project's relative importance by deriving a numerical value representative of the project's priority in terms of the municipality's strategic direction. As part of the budget scenario preparation process, the Mogale City CPM is applied to the input baseline to obtain an order of importance for projects and capital demand captured during the planning process. The relative importance of projects determines which projects will be allocated budget within the parameters of the budget scenario. For more information on how relative project scores are applied to the budget scenario refer to below.

9.3 Budget scenario setup

To prepare a budget scenario template, budget scenario parameters are applied to establish a rule set in which planned capital expenditure is applied.

The budget scenario template defines the available capital budget for the MTREF and is distributed according to the grant allocations as documented within the DoRA. Although the DoRA indicates a total available capital budget for the MTREF, the outcomes of the LTFM determine a 10-year affordability envelope.

In addition to defining the overall total available budget and the distribution thereof per funding source, optional ring-fencing of capital budget can also be applied per outcomes-based portfolios, departmental level or stage gates.

9.3.1 Funding Source Balancing and Grant Allocations

The DoRA is published on an annual basis with the distinct purpose to document the equitable share and grant allocations to municipalities. Although the publication dates may differ annually, the DoRA publication will set out all the external available capital funding for a municipality emanating from national and provincial budgets.

It is important to note that not all projects are eligible to utilise all of the funding sources as documented within the DoRA publication. An example of this includes the PTIS grant which is only applicable to public transport orientated infrastructure and the INEP grant which is only applicable to electrification programmes.

Although the budget scenario template outlines the total capital budget and source of funding as documented within the DORA publication, together with internal capital funding sources, funding source alignment should be undertaken prior to publishing a final capital budget. The process of funding source balancing ensures the correct alignment of capital budget as outlined within the grant conditions.

9.3.2 Long-Term Financial Model and Resultant Affordability Envelopes

As part of National Treasury's Budget Reporting Regulations and Templates, the Mogale City Local Municipality submits all internally generated capital funding as determined through the use of a Long-Term Financial Model (LTFM). Internal capital budget funding typically comprises of the following funding sources:

- Own Municipal Funding: Funding generated from municipality revenue (i.e. rates and taxes);
- Public Contributions and Donations: Donations and bulk services contributions for capital expenditure to provide additional bulk capacity to service new developmental demand;
- Capital Replacement Reserves (CRR): Savings by the municipality for deferred capital expenditure to maintain the existing municipal asset base, and;
- Borrowings: External loans from the financial markets or bonds issued by the municipality to the financial markets.

Based on the outcome of the LTFM, a Funding Envelope is established which evaluates amongst others the municipality's financial position. This includes a view on the optimal funding mix per annum which aids the municipality in maintaining a desirable financial position.

9.3.3 Ring-fencing CapEx Demand

During the budget scenario process, a municipality might choose to ring-fence a portion of the total available capital budget based on preference or to ensure that certain types of projects receive budget irrespective of project status or project score. Developing a budget scenario template allows for the inclusion of an additional set of rules whereby the capital budget amount is defined as per the following options:

- Outcome-based portfolios – Outcome-based portfolios are defined as part of the baseline management process, whereby projects can be categorised or grouped into a set of pre-defined portfolios. For example, suppose the municipality executives decide that 15% of the total municipal budget must be ring-fenced for repairs and maintenance of existing assets. The budget scenario template could be used to ring-fence 15% of the total capital budget for a portfolio called "Repairs and Maintenance". During the baseline management process, projects are classified as contributing to the "Repairs and Maintenance" portfolio by virtue of the MSCOA project segment classification. When applying the budget scenario projects classified as part of the "Repairs and Maintenance" portfolio will be fitted based on project status, followed by the relative project score, until the budget amount allocated for the "Repairs and Maintenance" portfolio has been depleted.
- Departmental Indicatives – Defining a capital budget amount on a departmental level can be applied in instances where some projects have difficulty in effectively competing for capital budget owing to the nature of the project. For example, capital investments in the form of computer equipment or the procurement of vehicles may struggle to compete on a CPM score basis with utility services projects such as water and sanitation or electricity. Departmental budget amounts will be ring-fenced per department and only projects which are earmarked to form part of those departments may compete for the budget amount as specified. When applying the budget scenario, projects which belong to the specified departments will be fitted to the departmental budget amount based on project status, followed by the relative project score, until the allocated budget amount has been depleted.
- Stage Gates – Stage Gates are defined as part of the baseline management process, whereby projects are allocated to different stages based on the implementation progress or status of the project. For example, suppose the municipality executives decide that 10% of the total municipal budget must be ring-fenced for projects within Stage Gate 9: Project Close-Out. The budget scenario template could be used to ring-fence 10% of the total capital budget for Stage Gate 9 projects. When applying the budget scenario projects classified as "Stage Gate 9" will be fitted based on project status, followed by the relative project score, until the budget amount allocated for "Stage Gate 9" has been depleted.

9.4 Applying a Budget Scenario

As previously outlined the preparation of the budget scenario input variables which included the baseline management process, allocation of project status and the calculation of the relative project score based on the outcome of the

Mogale City CPM. These input variables should be in place before a budget scenario can be applied, as this provides the content of the budget scenario together with the sequence in which projects are allocated budget.

In addition to the budget scenario input variables the budget scenario template should be defined as described in earlier, in order to provide the framework in which the budget scenario is applied. The budget scenario template provides the total available capital amounts as set out for each parameter including the available capital amount per funding source together with the total affordability envelope across a 10-year planning horizon.

The following section is structured according to the sequence in which projects are fitted to the budget scenario template, which results in a 10-year capital expenditure framework of which the first three years comprise of the draft capital budget.

9.4.1 Budget Scenario Sequence

Once the input baseline and variables are prepared, the budget scenario template is selected. When applying the budget scenario, projects and requested capital budget is fitted to the budget scenario template based on an established budget scenario routine. The sequence in which the budget scenario routine is applied indicates which projects will be allocated budget and in which financial year. Projects included in the draft capital budget will be assigned a budget scenario status in order of the following:

- Committed Projects receive first priority within the budget scenario sequence, given the contractual commitments as described in the section above. Committed projects will be fitted to the capital budget, within the financial year that budget is requested (no delays may be applied) and may exceed the total available budget as allocated within the budget scenario template.
- Provisioned-In Projects receive second priority within the budget scenario, given the priority status above projects without a status assigned. Provision-In projects will only be fitted to the capital budget if budget is available but will not be allowed to exceed the total available budget as allocated within the budget scenario template. If there is available budget to fit a provisioned-in project, it will be fitted without delay.
- Provisioned-In Projects – Fitted with Delay include projects which have been allocated a provisioned in status, but due to unavailability of budget within the budget scenario template, the budget requested is fitted with a delay. Fitted with delay allocates the requested budget amount to the first financial year in which additional budget is available.
- Projects Fitted include projects which have been fitted to the budget scenario, based on the relative project score. Projects with a higher ranking and without a status will only be fitted to the capital budget if budget is available, but will not be allowed to exceed the total available budget as allocated within the budget scenario template.
- Projects Fitted with Delay include projects which have been fitted to the budget scenario, based on the relative project score, but due to unavailability of budget within the budget scenario template the budget requested is fitted with a delay. Fitted with delay allocates the requested budget amount to the first financial year in which additional budget is available.
- No Fit includes projects which have not been fitted to the budget scenario. This can be due to very low relative project scores or due to budget availability constraints within the budget scenario template.
- No Fit – Zero Budget includes projects which have not requested budget.

9.4.2 Negotiated adjustments (Force-in / Force-out)

Once a draft capital budget has been developed using the budget scenario process, the portfolio of projects which make up the draft capital budget needs to undergo a number of municipal approvals.

It is inconceivable that any portfolio of capital projects, which has been prepared in a complex multi-disciplinary collaborative framework will meet all the expectations. Therefore, a negotiated adjustment process is accommodated in the budget scenario process whereby projects can be added or removed from the portfolio of capital projects based on motivations and representations made during budget forums.



Capital Investment Programmes per Functional Area

10 Programme per Functional Area

The policies plans and programmes of any sphere of government are part of a basic methodology developed in public administration for the rational performance of governmental functions entrusted by law to the Government. The policies, plans and programmes stand in a tiered or hierarchical relationship with one another:

- At the first level in this hierarchy lies the formulation of a governmental policy, which in essence identifies the desired outcome or goal of the governmental functions in question which the particular sphere of government is entrusted with;
- The second level in this hierarchy consists of the development of a plan, setting out the preferred strategy or pathway by means whereof the desired outcome or goal of the governmental functions in question will be pursued; in other words, the plan at this level manifests a strategic choice at a high level between the various options available for realising the adopted policy, inter alia considering the availability of resources; and
- At the third level in this hierarchy then follows the identification of programmes, each of which details how various aspects of the approved plan will be implemented so that the desired outcomes or goals of the governmental functions in question can be achieved and the objectives of the adopted policy can be realised.

Within the context of this methodology, these three instruments (policies, plans and programmes) operate on a higher level of strategic assessment and decision-making. At the next level, different projects are the implementation agents of programmes. Given the focus by government policies such as the National Development Plan, the Integrated Urban Development Framework and the Spatial Development Framework on spatial targeting, spatial justice, and spatial transformation projects are allocated to area-based programmes to ensure an integrated view of project rollout and true integrated spatial development. To take a disciplinary-based view of programmes revert planning methodology to a per-line-function mentality within the municipality and so move away from the integrational effort of the IUDF and CEF, and toward the historic silo-based planning style.

This section will focus on the spatial, and otherwise defined, implications of the budget scenario developed in the previous section. The spatial analysis is on Mogale City's Functional Areas (FAs), Priority Development Areas (PDAs) and Wards. Within the three categories of analysis, please take note of the following:

- Duplication of a project budget is possible as geometric shapes could overlap, which may result in double calculation;
- No intersect refers to a portion of projects that fall outside of the analysis area;
- Administrative HQ contributes to the effective running and management of the municipality throughout the demarcated area, does not necessarily benefit any specific region or ward; and:
 - City Wide, refers to investment that benefits more than one service area.

10.1 Budget Scenario Outcome per Functional Area

For this part of the section, the 2023/2024 capital expenditure framework has been expressed in terms of the FA's over the 10-year horizon. It seeks to identify the degree of spatial targeting achieved by the municipality.

Figure 10-1 indicates that 38% of the total capital expenditure is intended for the Urban Concentration with 29% allocated towards Urban Restructuring capital projects and City Wide having the third highest spatial expenditure intent at 15%.

Some of the characteristics of the Urban Concentration Functional Area include; economic activity, the proximity of employment opportunities, administrative function, urban infrastructure and primary transport routes. This is a part of the city where there is a concentration of businesses and essential services are connected. The significant investment intent in this area, therefore, indicates a focus on the improvement of transport systems, improvement of infrastructure (i.e. roads) as well as social infrastructure.

City Wide Functional area indicates an investment of 15%, this is an indication of an intent to create a more balanced distribution of resources and an improvement to infrastructure (which includes projects to improve pump stations and sewer pipeline replacements).

Figure 10-1: Budget Scenario Outcome per Functional Area

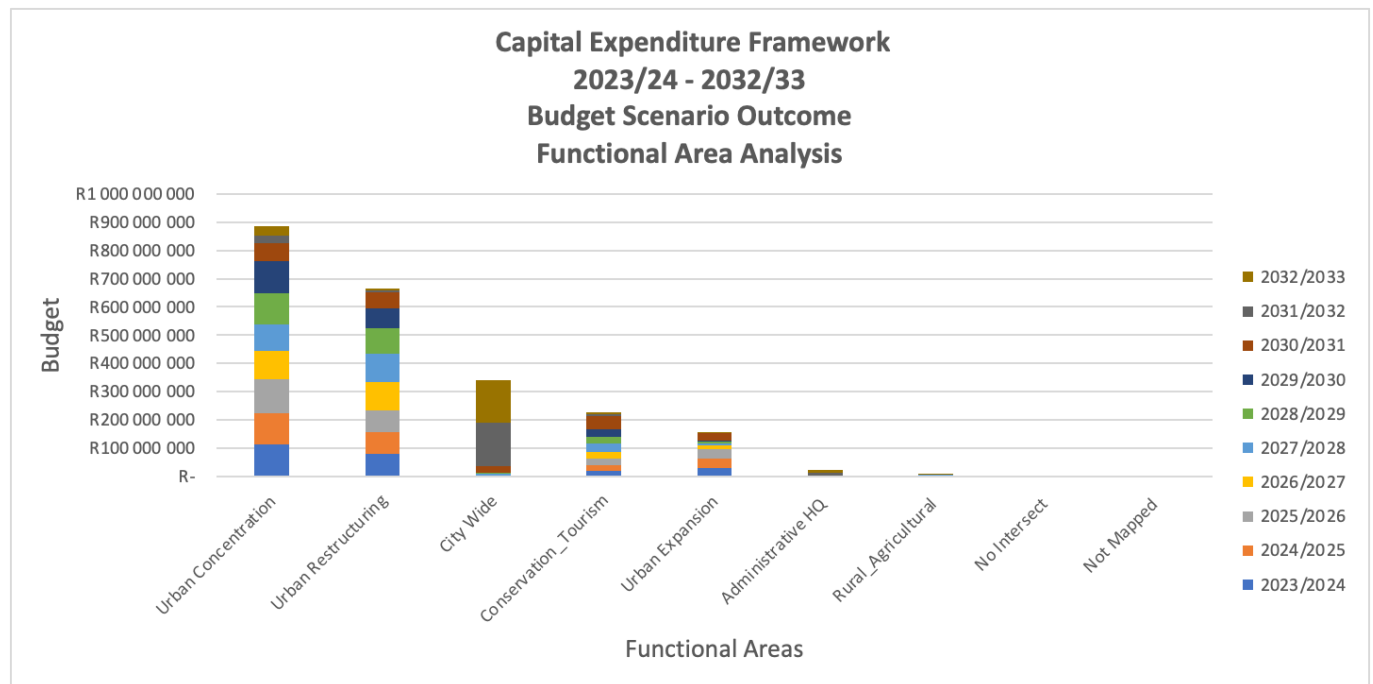


Table 10-1: Budget Scenario Outcome per Functional Area

Year	Urban Concentration	Urban Restructuring	City Wide	Conservation_Tourism	Urban Expansion
2023/2024	R113 610 646	R79 383 333	R0	R19 381 710	R28 429 109
2024/2025	R108 611 522	R75 933 333	R0	R20 632 693	R32 927 824
2025/2026	R120 136 398	R77 535 833	R0	R23 776 983	R35 071 886
2026/2027	R103 144 782	R100 197 127	R3 750 000	R22 438 898	R11 751 506
2027/2028	R93 214 259	R100 412 633	R3 750 000	R31 033 112	R9 289 555
2028/2029	R108 801 636	R90 688 195	R3 750 000	R21 990 324	R4 897 555
2029/2030	R113 404 679	R72 029 010	R750 000	R27 106 506	R4 255 555
2030/2031	R63 637 874	R54 686 111	R23 750 000	R46 258 071	R25 005 555
2031/2032	R27 896 331	R6 337 002	R152 550 000	R7 366 666	R2 005 555
2032/2033	R32 896 331	R6 337 002	R150 412 500	R5 366 666	R3 338 888
Total	R885 354 455	R663 539 581	R338 712 500	R225 351 628	R156 972 989
Total %	38%	29%	15%	10%	7%

Table 10-2: Budget Scenario Outcome per Functional Area continued

Year	Administrative HQ	Rural_Agricultural	No Intersect	Not Mapped
2023/2024	R54 000	R137 707	R0	R0
2024/2025	R0	R172 133	R0	R0
2025/2026	R30 000	R344 267	R0	R100 000
2026/2027	R40 000	R1 672 133	R0	R0
2027/2028	R0	R1 500 000	R0	R0
2028/2029	R0	R1 500 000	R0	R0
2029/2030	R329 000	R111 111	R0	R0
2030/2031	R273 000	R111 111	R0	R0
2031/2032	R10 273 000	R111 111	R3 111 970	R0
2032/2033	R10 517 148	R111 111	R0	R20 000
Total	R21 516 148	R5 770 684	R3 111 970	R120 000

Year	Administrative HQ	Rural_Agricultural	No Intersect	Not Mapped
Total %	1 %	0,3%	0,14%	0,01 %

10.2 Budget Scenario Outcome per Priority Development Area

In this section, the 2023/2024 capital expenditure framework has been expressed in terms of the PDAs over the 10-year horizon. It seeks to identify the degree of spatial targeting achieved by the municipality.

Figure 10-2 and Table 10-3 (continued on Table 10-4) illustrate the total capital expenditure based on the Budget Scenario Outcome, with a focus on the Priority Development Areas from a spatial perspective. Figure 10-2 indicates a significant portion (34%) of the total capital expenditure not targeted towards any PDA, over the majority of the 10-year horizon. This can be attributed to two distinct reasons, firstly that the priority areas are too small and alternatively, the priority areas are not considered when the planned capital demand is compiled.

Areas that display a significant percentage are Krugersdorp CBD, with projects to upgrade the R28 between Market Street and Coronation Streets and the construction of a new public park.

Figure 10-2: Budget Scenario Outcome per Priority Development Area

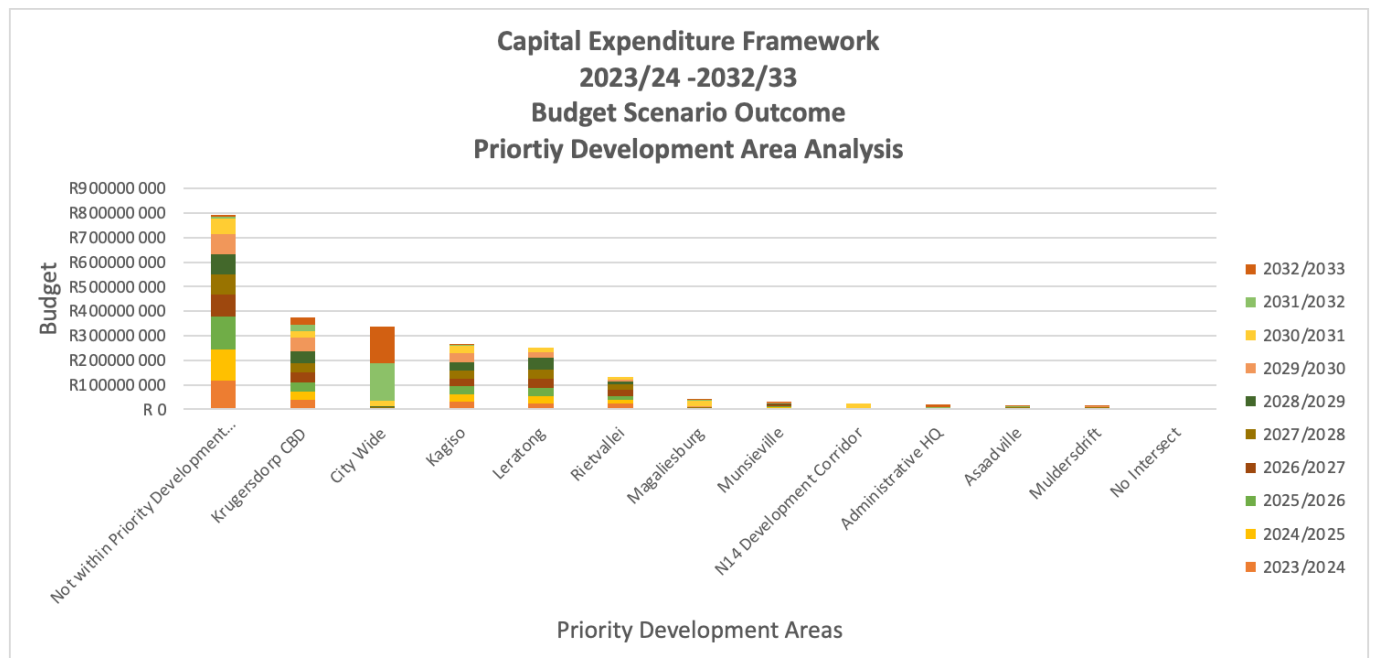


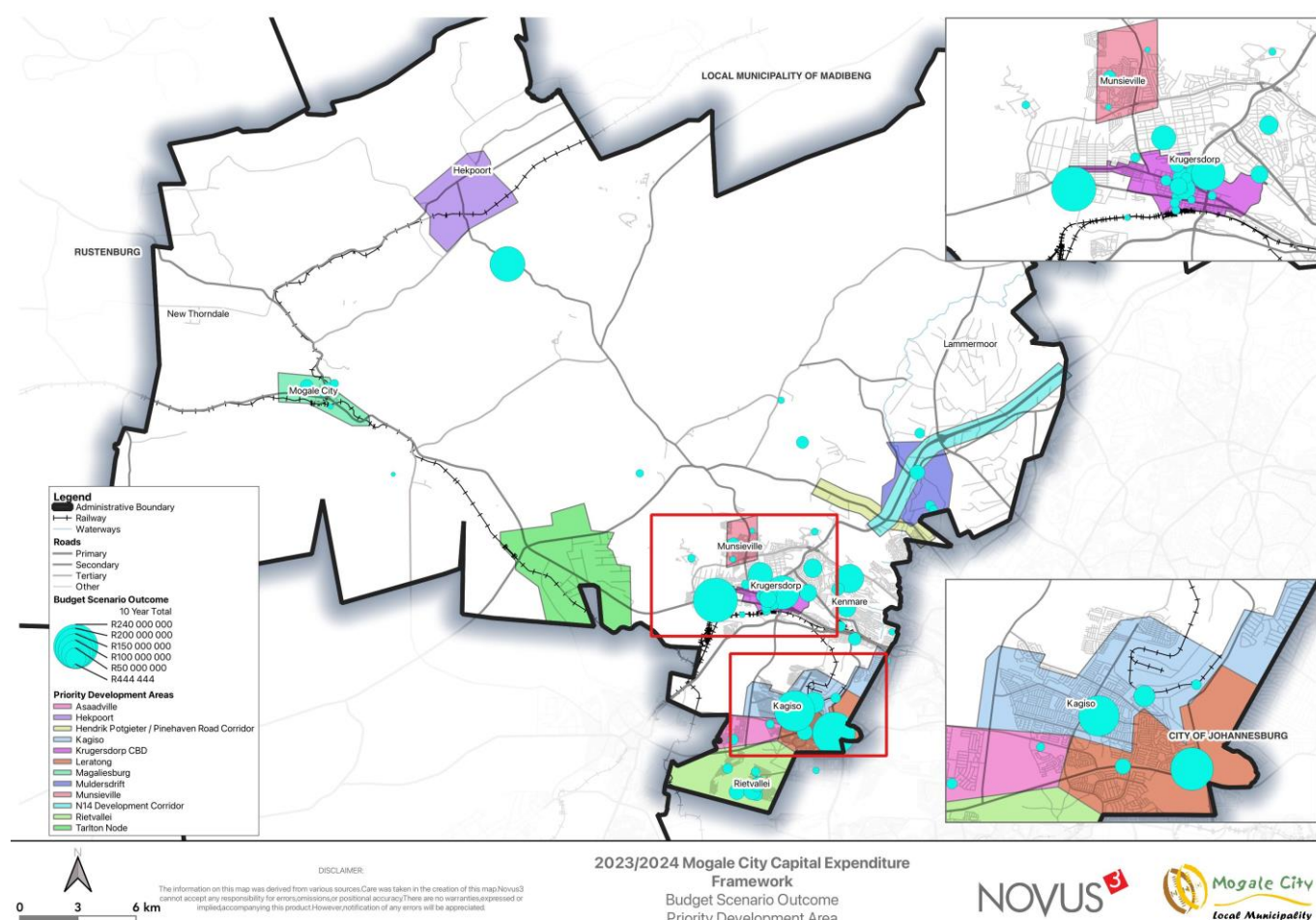
Table 10-3: Budget Scenario Outcome per Priority Development Area

Year	Not within Priority Development Area	Krugersdorp CBD	City Wide	Kagiso	Leratong	Rietvallei	Magaliesburg
2023/2024	R117 277 173	R40 405 638	R0	R31 000 000	R25 250 000	R23 133 333	R0
2024/2025	R125 960 337	R32 100 884	R0	R32 050 000	R28 750 000	R15 133 333	R0
2025/2026	R135 374 367	R37 528 153	R0	R30 652 500	R31 750 000	R15 133 333	R0
2026/2027	R88 387 514	R40 868 301	R3 750 000	R31 810 125	R37 750 000	R25 633 333	R111 111
2027/2028	R82 047 839	R36 020 534	R3 750 000	R33 025 631	R39 750 000	R22 633 333	R10 111 111
2028/2029	R82 618 308	R51 352 654	R3 750 000	R34 301 193	R45 750 000	R10 633 333	R111 111
2029/2030	R81 860 509	R55 687 678	R750 000	R35 642 008	R25 750 000	R10 633 333	R4 222 222
2030/2031	R65 544 628	R24 436 525	R23 750 000	R29 549 109	R17 000 000	R8 133 333	R21 174 017
2031/2032	R7 097 613	R25 202 386	R152 550 000	R3 888 889	R0	R0	R4 222 222
2032/2033	R5 097 613	R30 202 386	R150 412 500	R3 888 889	R0	R0	R4 222 222
Total	R791 265 900	R373 805 139	R338 712 500	R265 808 344	R251 750 000	R131 066 664	R44 174 016
Total %	34%	16%	15%	12%	11%	6%	2%

Table 10-4: Budget Scenario Outcome per Priority Development Area continued

Year	Munsieville	N14 Development Corridor	Administrative HQ	Asaadvile	Muldersdrift	No Intersect	Not Mapped
2023/2024	R3 876 361	R0	R54 000	R0	R0	R0	R0
2024/2025	R4 282 951	R0	R0	R0	R0	R0	R0
2025/2026	R6 427 013	R0	R30 000	R0	R0	R0	R100 000
2026/2027	R4 394 062	R0	R40 000	R5 000 000	R5 250 000	R0	R0
2027/2028	R2 361 111	R0	R0	R5 000 000	R4 500 000	R0	R0
2028/2029	R2 361 111	R0	R0	R0	R750 000	R0	R0
2029/2030	R2 361 111	R0	R329 000	R0	R750 000	R0	R0
2030/2031	R111 111	R23 000 000	R273 000	R0	R750 000	R0	R0
2031/2032	R111 111	R0	R10 273 000	R2 444 444	R750 000	R3 111 970	R0
2032/2033	R1 444 444	R0	R10 517 148	R2 444 444	R750 000	R0	R20 000
Total	R27 730 385	R23 000 000	R21 516 148	R14 888 888	R13 500 000	R3 111 971	R120 000
Total %	1%	1%	1%	1%	1%	0,1%	0,005%

Map 10-1: Budget Scenario Outcome per Priority Development Area



10.3 Budget Scenario Outcome per Electoral Ward

The 2023/2024 capital expenditure framework has been expressed in terms of ward-based spatial targeting over the 10-year horizon. It seeks to identify the degree of spatial targeting achieved by the municipality. Figure 10-3 and Table 10-5 are indicative of the planned capital expenditure within specified wards, showing that 84% of the capital is distributed over 30 wards, which is approximately 77% of the wards in Mogale City. A total of 15% of the capital expenditure is at a City-Wide level and not spatially targeted to a specific ward – but rather all the wards. The top five wards within this budget scenario are wards 20, 26, 7, 10 and 32. These wards currently correspond to

the established priorities of the capital expenditure framework, which considers factors including the financial well-being of the municipality.

Figure 10-3: Budget Scenario Outcome per Electoral Ward

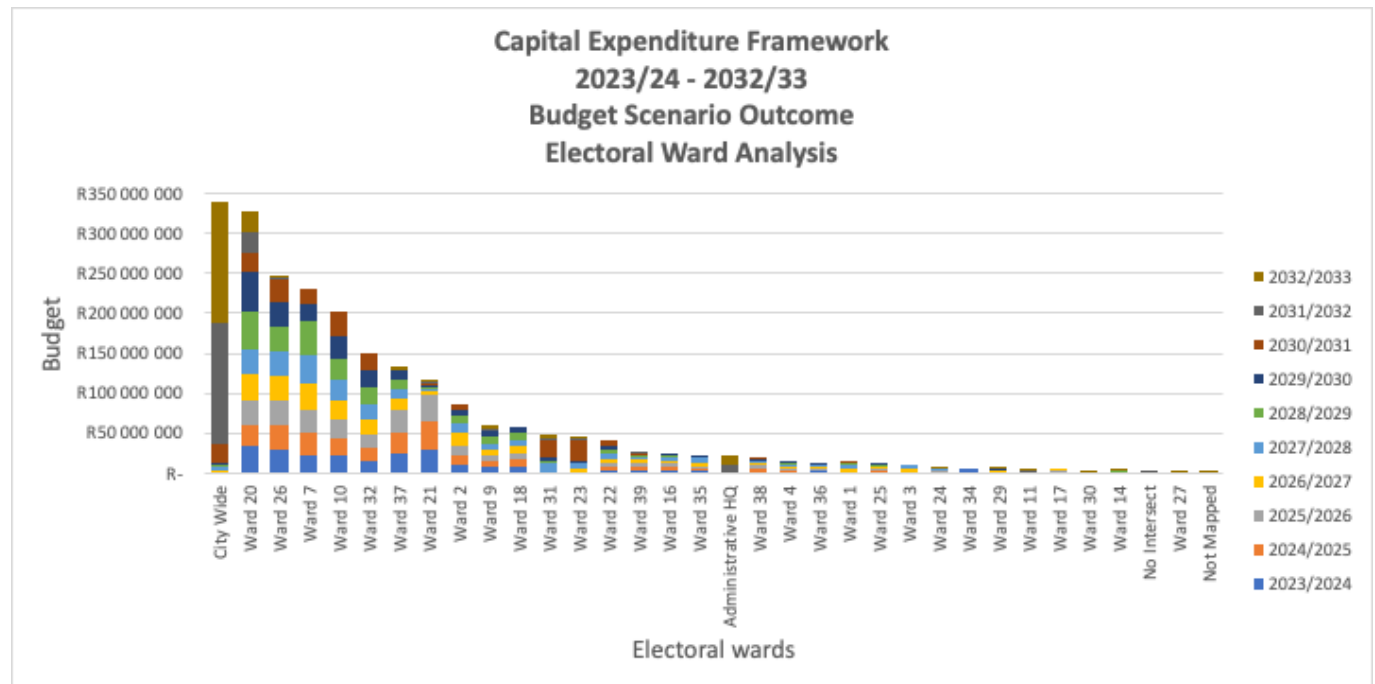


Table 10-5: Budget Scenario Outcome per Electoral Ward

Wards	2023/2024	2024/2025	2025/2026	2026/2027	2027/2028	2028/2029
City Wide	R0	R0	R0	R3 750 000	R3 750 000	R3 750 000
Ward 20	R34 274 243	R25 845 429	R29 986 884	R34 428 614	R30 866 661	R46 198 781
Ward 26	R30 420 775	R30 525 969	R31 051 937	R30 712 999	R30 187 030	R30 187 030
Ward 7	R23 560 579	R27 060 579	R28 000 000	R34 000 000	R36 000 000	R42 000 000
Ward 10	R21 439 421	R22 489 421	R23 152 500	R24 310 125	R25 525 631	R26 801 193
Ward 32	R15 750 000	R16 537 500	R17 364 375	R18 232 594	R19 144 223	R20 101 435
Ward 37	R24 521 561	R25 554 118	R28 643 154	R14 529 118	R11 991 333	R11 991 333
Ward 21	R29 770 811	R34 732 613	R34 732 613	R2 500 000	R2 500 000	R2 500 000
Ward 2	R11 567 701	R11 565 294	R11 565 294	R16 315 151	R11 915 112	R8 315 345
Ward 9	R7 500 000	R7 500 000	R7 500 000	R7 500 000	R7 500 000	R7 500 000
Ward 18	R8 432 074	R8 540 093	R9 080 186	R8 540 093	R8 000 000	R8 000 000
Ward 31	R0	R0	R0	R1 611 111	R11 611 111	R1 611 111
Ward 23	R0	R0	R0	R6 394 444	R5 644 444	R1 894 444
Ward 22	R4 429 189	R4 677 387	R4 897 887	R4 862 025	R5 105 126	R5 360 383
Ward 39	R3 618 395	R4 078 550	R6 379 321	R4 078 550	R1 777 778	R1 777 778
Ward 16	R3 770 917	R3 869 897	R4 364 793	R3 869 897	R3 375 000	R3 375 000
Ward 35	R2 879 150	R2 879 150	R2 879 150	R5 090 299	R5 782 539	R1 629 099
Administrative HQ	R54 000	R0	R30 000	R40 000	R0	R0
Ward 38	R2 235 990	R3 128 218	R5 266 956	R3 128 218	R989 481	R989 481
Ward 4	R1 989 078	R1 989 078	R1 989 078	R1 989 078	R1 989 078	R1 989 078
Ward 36	R2 857 321	R1 760 922	R1 760 922	R1 760 922	R1 760 922	R1 760 922
Ward 1	R688 889	R688 889	R688 889	R4 227 883	R4 935 682	R688 889
Ward 25	R1 785 331	R1 840 092	R2 113 893	R1 840 092	R1 566 290	R1 566 290
Ward 3	R865 091	R0	R0	R5 000 000	R5 000 000	R0
Ward 24	R1 019 634	R1 103 615	R1 523 521	R1 103 615	R683 710	R683 710
Ward 34	R6 034 237	R0	R0	R0	R0	R0
Ward 29	R226 343	R282 929	R676 969	R1 357 040	R1 395 111	R753 111
Ward 11	R1 867	R0	R0	R0	R0	R0

Wards	2023/2024	2024/2025	2025/2026	2026/2027	2027/2028	2028/2029
Ward 17	R759 189	R948 987	R1 897 973	R948 987	R0	R0
Ward 30	R0	R0	R0	R0	R0	R0
Ward 14	R326 547	R406 064	R803 646	R600 880	R203 297	R203 297
No Intersect	R0	R0	R0	R0	R0	R0
Ward 27	R218 170	R272 712	R545 425	R272 712	R0	R0
Not Mapped	R0	R0	R100 000	R0	R0	R0
City Wide	R0	R0	R0	R3 750 000	R3 750 000	R3 750 000
Ward 20	R34 274 243	R25 845 429	R29 986 884	R34 428 614	R30 866 661	R46 198 781

Table 10-6: Budget Scenario Outcome per Electoral Ward continued

Wards	2029/2030	2030/2031	2031/2032	2032/2033	Total	%
City Wide	R750 000	R23 750 000	R152 550 000	R150 412 500	R338 712 500	15%
Ward 20	R50 522 785	R24 374 375	R25 007 134	R25 007 134	R326 512 040	14%
Ward 26	R30 187 030	R30 187 030	R187 030	R187 030	R243 833 859	11%
Ward 7	R22 000 000	R17 000 000	R0	R0	R229 621 158	10%
Ward 10	R28 142 008	R29 549 109	R0	R0	R201 409 408	9%
Ward 32	R21 106 506	R22 161 832	R0	R0	R150 398 465	7%
Ward 37	R11 991 333	R0	R0	R5 000 000	R134 221 952	6%
Ward 21	R2 500 000	R2 500 000	R2 500 000	R2 500 000	R116 736 037	5%
Ward 2	R8 315 345	R7 444 444	R0	R0	R87 003 686	4%
Ward 9	R7 500 000	R0	R3 888 889	R3 888 889	R60 277 778	3%
Ward 18	R8 000 000	R0	R0	R0	R58 592 445	3%
Ward 31	R4 333 333	R21 285 128	R4 333 333	R4 333 333	R49 118 460	2%
Ward 23	R1 894 444	R24 894 444	R1 894 444	R1 894 444	R44 511 108	2%
Ward 22	R5 628 402	R5 909 822	R0	R0	R40 870 221	2%
Ward 39	R1 777 778	R1 777 778	R2 000 000	R0	R27 265 927	1%
Ward 16	R3 375 000	R0	R0	R0	R26 000 504	1%
Ward 35	R1 629 099	R0	R0	R0	R22 768 486	1%
Administrative HQ	R329 000	R273 000	R10 273 000	R10 517 148	R21 516 148	1%
Ward 38	R989 481	R464 481	R0	R0	R17 192 305	1%
Ward 4	R1 989 078	R0	R0	R0	R13 923 548	1%
Ward 36	R1 760 922	R0	R0	R0	R13 422 853	1%
Ward 1	R688 889	R688 889	R0	R0	R13 296 900	1%
Ward 25	R1 566 290	R0	R0	R0	R12 278 278	1%
Ward 3	R0	R0	R0	R0	R10 865 091	0%
Ward 24	R683 710	R0	R0	R966 863	R7 768 379	0%
Ward 34	R0	R0	R0	R0	R6 034 237	0%
Ward 29	R111 111	R111 111	R111 111	R111 111	R5 135 948	0%
Ward 11	R0	R0	R2 444 444	R2 444 444	R4 890 755	0%
Ward 17	R0	R0	R0	R0	R4 555 136	0%
Ward 30	R0	R1 144 444	R1 144 444	R1 144 444	R3 433 332	0%
Ward 14	R214 317	R205 836	R205 836	R205 836	R3 375 554	0%
No Intersect	R0	R0	R3 111 970	R0	R3 111 970	0%
Ward 27	R0	R0	R0	R366 470	R1 675 489	0%
Not Mapped	R0	R0	R0	R20 000	R120 000	0%
City Wide	R750 000	R23 750 000	R152 550 000	R150 412 500	R338 712 500	15%
Ward 20	R50 522 785	R24 374 375	R25 007 134	R25 007 134	R326 512 040	14%

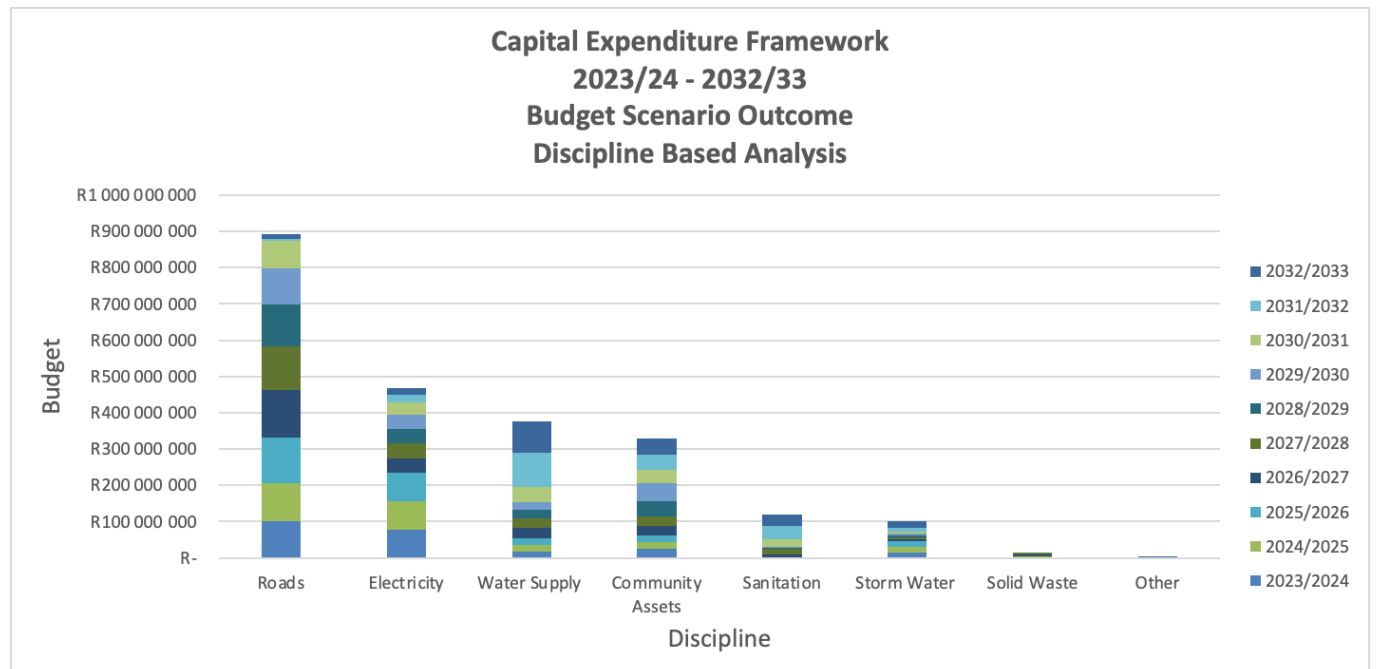
10.4 Budget Scenario Outcome per Discipline

The discipline-based budget split has been compiled based on the mSCOA project segment category per project. Refer to Table 10-7 below.

Table 10-7: mSCOA - Project type category and discipline relationship

mSCOA Type Category	Discipline
Community Assets	Community Assets
Electrical Infrastructure	Electricity
Biological or Cultivated Assets	Other
Computer Equipment	Other
Furniture and Office Equipment	Other
Investment Properties	Other
Investment Property	Other
Machinery and Equipment	Other
Other Assets	Other
(blank)	Other
Rail Infrastructure	Rail
Roads Infrastructure	Roads
Sanitation Infrastructure	Sanitation
Solid Waste Infrastructure	Solid Waste
Stormwater Infrastructure	Storm Water
Transport Assets	Transport
Water Supply Infrastructure	Water Supply

Figure 10-4 is clearly shown that an overshadowing 39% of the capital expenditure in this budget scenario is assigned to Roads and 20% to Electricity related disciplines respectively. The Budget Scenario Outcome is guided by the largest data input to capital demand driven by the most salient infrastructure needs within the municipality. Given the input data and the priorities embodied in the prioritisation model, it is understandable that these two disciplines tower in comparison to other disciplines. From Table 10-8: Budget Scenario Outcome per Discipline one can see that 16% towards Water Supply and 14% on Community Assets. This outcome might change, as the master planning of the municipality progress. The two disciplines that had the least capital amounts allocated within the Budget Scenario Outcome are Stormwater and Solid Waste.

Figure 10-4: Budget Scenario Outcome per Discipline

Table 10-8: Budget Scenario Outcome per Discipline

Discipline	2023/2024	2024/2025	2025/2026	2026/2027	2027/2028	2028/2029
Roads	R101 000 000	R105 600 000	R125 805 000	R129 120 250	R120 551 262	R117 103 106
Electricity	R77 650 000	R78 650 000	R78 650 000	R39 900 000	R39 900 000	R39 900 000
Water Supply	R18 000 000	R18 000 000	R18 000 000	R29 750 000	R24 750 000	R24 750 000
Community Assets	R26 342 505	R17 342 505	R17 453 616	R26 909 171	R26 909 171	R41 922 221

Discipline	2023/2024	2024/2025	2025/2026	2026/2027	2027/2028	2028/2029
Sanitation	R750 000	R750 000	R750 000	R7 213 000	R16 784 000	R2 392 000
Storm Water	R14 700 000	R15 435 000	R16 206 750	R4 862 025	R5 105 126	R5 360 383
Solid Waste	R2 500 000	R2 500 000	R0	R5 000 000	R5 000 000	R0
Other	R54 000	R0	R130 000	R240 000	R200 000	R200 000
Total	R240 996 505	R238 277 505	R256 995 366	R242 994 446	R239 199 559	R231 627 710

Discipline	2029/2030	2030/2031	2031/2032	2032/2033	Total	Percentage
Roads	R99 784 016	R76 098 218	R5 250 000	R10 912 500	R891 224 352	39%
Electricity	R39 900 000	R33 750 000	R20 861 970	R18 250 000	R467 411 970	20%
Water Supply	R20 250 000	R42 201 795	R94 000 000	R85 500 000	R375 201 795	16%
Community Assets	R50 144 443	R34 288 887	R42 266 665	R44 599 998	R328 179 182	14%
Sanitation	R1 750 000	R21 000 000	R36 000 000	R31 000 000	R118 389 000	5%
Storm Water	R5 628 402	R5 909 822	R10 800 000	R18 000 000	R102 007 508	4%
Solid Waste	R0	R0	R0	R0	R15 000 000	1%
Other	R529 000	R473 000	R473 000	R737 148	R3 036 148	0,13%
Total	R217 985 861	R213 721 722	R209 651 635	R208 999 646	R2 300 449 955	100%

10.5 Budget Scenario Outcome per mSCOA Asset Type

From Figure 10-5, it is clear that both Roads, Electricity and Water Supply Infrastructure asset groups represent the largest portions (64%) as this is the highest priority highlighted from the Rapid Assessment that infrastructure quality, water supply challenges, inadequate roads, and power supply instability must be addressed through increased investment, improved management, and better maintenance practices.

The Sanitation and Stormwater Infrastructure groups represent 20% of the Budget Scenario Outcome, while Community Assets group benefits from 15% of the Budget Scenario Outcome. Machinery and Equipment and furniture and office equipment all have smaller portions of the 10-year Budget Scenario Outcome, their relative size compared to other assets, is expected because of the nature of the asset. The Budget Scenario Outcome also allocated the respective funds to projects based on their strategic alignment with the municipality's priorities. It is therefore understandable that hard infrastructure occupies almost 84% of the entire Budget Scenario Outcome as this is the salient need within the municipality to address the infrastructure needs and upgrade the existing infrastructure to ensure the growth of the municipality in the future.

Figure 10-5: Budget Scenario Outcome per mSCOA Asset Type

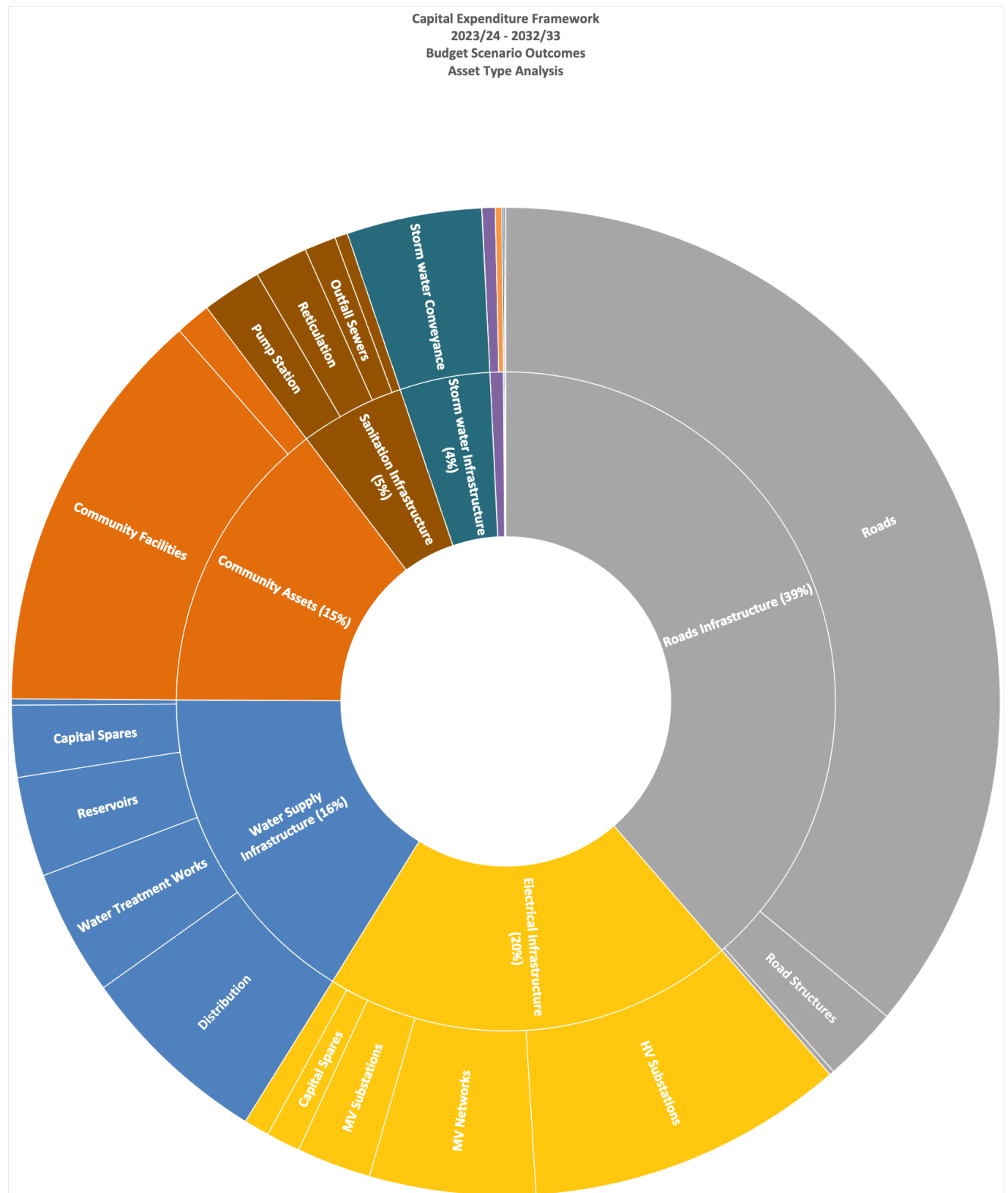


Table 10-9: Budget Scenario Outcome per mSCOA Asset Type

Asset Type and Sub-type	2023/2024	2024/2025	2025/2026	2026/2027	2027/2028	2028/2029
Electrical Infrastructure	R77 650 000	R78 650 000	R78 650 000	R39 900 000	R39 900 000	R39 900 000

Asset Type and Sub-type	2023/2024	2024/2025	2025/2026	2026/2027	2027/2028	2028/2029
MV Networks	R39 625 000	R40 625 000	R40 625 000	R1 125 000	R1 125 000	R1 125 000
MV Substations	R8 025 000	R8 025 000	R8 025 000	R8 025 000	R8 025 000	R8 025 000
LV Networks	R0	R0	R0	R0	R0	R0
Capital Spares	R0	R0	R0	R750 000	R750 000	R750 000
HV Substations	R30 000 000	R30 000 000	R30 000 000	R30 000 000	R30 000 000	R30 000 000
Roads Infrastructure	R101 053 585	R105 666 465	R125 935 863	R129 186 715	R120 553 329	R117 105 173
Road Structures	R6 250 000	R6 512 500	R6 788 125	R7 077 531	R7 381 408	R7 700 478
Roads	R94 301 518	R98 651 898	R118 645 671	R121 607 117	R112 669 854	R108 902 628
Road Furniture	R502 067	R502 067	R502 067	R502 067	R502 067	R502 067
Sanitation Infrastructure	R750 000	R750 000	R750 000	R7 213 000	R17 030 086	R2 392 000
Reticulation	R0	R0	R0	R0	R0	R0
Waste Water Treatment Works	R750 000	R750 000	R750 000	R1 963 000	R2 284 000	R1 642 000
Pump Station	R0	R0	R0	R0	R0	R0
Outfall Sewers	R0	R0	R0	R5 250 000	R14 746 086	R750 000
Solid Waste Infrastructure	R2 500 000	R2 500 000	R0	R5 000 000	R5 000 000	R0
Waste Processing Facilities	R2 500 000	R2 500 000	R0	R0	R0	R0
Waste Drop-off Points	R0	R0	R0	R5 000 000	R5 000 000	R0
Water Supply Infrastructure	R18 000 000	R18 000 000	R18 000 000	R29 750 000	R24 750 000	R24 750 000
Reservoirs	R0	R0	R0	R0	R0	R0
Distribution	R7 500 000	R7 500 000	R7 500 000	R10 500 000	R10 500 000	R10 500 000
Pump Station	R0	R0	R0	R5 000 000	R0	R0
Capital Spares	R0	R0	R0	R2 250 000	R2 250 000	R2 250 000
Water Treatment Works	R10 500 000	R10 500 000	R10 500 000	R12 000 000	R12 000 000	R12 000 000
Machinery and Equipment	R0	R0	R0	R0	R0	R0
No Selection	R0	R0	R0	R0	R0	R0
Community Assets	R26 342 505	R17 343 997	R17 455 108	R26 944 334	R26 944 334	R41 957 384
Community Facilities	R23 009 172	R14 010 664	R14 121 775	R23 611 001	R23 611 001	R38 624 051
Sport and Recreation Facilities	R3 333 333	R3 333 333	R3 333 333	R3 333 333	R3 333 333	R3 333 333
Furniture and Office Equipment	R40 000	R0	R0	R40 000	R0	R0
No Selection	R40 000	R0	R0	R40 000	R0	R0
Stormwater Infrastructure	R14 700 000	R15 435 000	R16 206 750	R4 862 025	R5 105 126	R5 360 383
Stormwater Conveyance	R14 700 000	R15 435 000	R16 206 750	R4 862 025	R5 105 126	R5 360 383
Computer Equipment	R14 000	R0	R30 000	R0	R0	R0
No Selection	R14 000	R0	R30 000	R0	R0	R0
Investment Properties	R0	R0	R0	R200 338	R200 338	R200 338
Revenue Generating	R0	R0	R0	R200 338	R200 338	R200 338
Grand Total	R241 050 090	R238 345 462	R257 027 721	R243 096 411	R239 483 212	R231 665 277

Table 10-10: Budget Scenario Outcome per mSCOA Asset Type continued

Asset Type and Sub-type	2029/2030	2030/2031	2031/2032	2032/2033	Total	Total %
Electrical Infrastructure	R39 900 000	R33 750 000	R19 750 000	R18 250 000	R466 300 000	20%
MV Networks	R1 125 000	R0	R0	R0	R125 375 000	5%
MV Substations	R8 025 000	R0	R0	R0	R56 175 000	2%
LV Networks	R0	R3 000 000	R8 000 000	R8 000 000	R19 000 000	1%
Capital Spares	R750 000	R750 000	R11 750 000	R10 250 000	R25 750 000	1%
HV Substations	R30 000 000	R30 000 000	R0	R0	R240 000 000	10%
Roads Infrastructure	R99 786 083	R76 098 218	R5 250 000	R10 912 500	R891 547 931	39%
Road Structures	R8 035 502	R7 387 277	R0	R0	R57 132 821	2%
Roads	R91 248 514	R68 710 941	R5 250 000	R10 912 500	R830 900 641	36%
Road Furniture	R502 067	R0	R0	R0	R3 514 468	0,2%
Sanitation Infrastructure	R1 750 000	R21 000 000	R36 000 000	R31 000 000	R118 635 086	5%
Reticulation	R0	R0	R20 000 000	R20 000 000	R40 000 000	2%
Waste Water Treatment Works	R1 000 000	R250 000	R250 000	R250 000	R9 889 000	0%
Pump Station	R0	R20 000 000	R15 000 000	R10 000 000	R45 000 000	2%
Outfall Sewers	R750 000	R750 000	R750 000	R750 000	R23 746 086	1%
Solid Waste Infrastructure	R0	R0	R0	R0	R15 000 000	1%

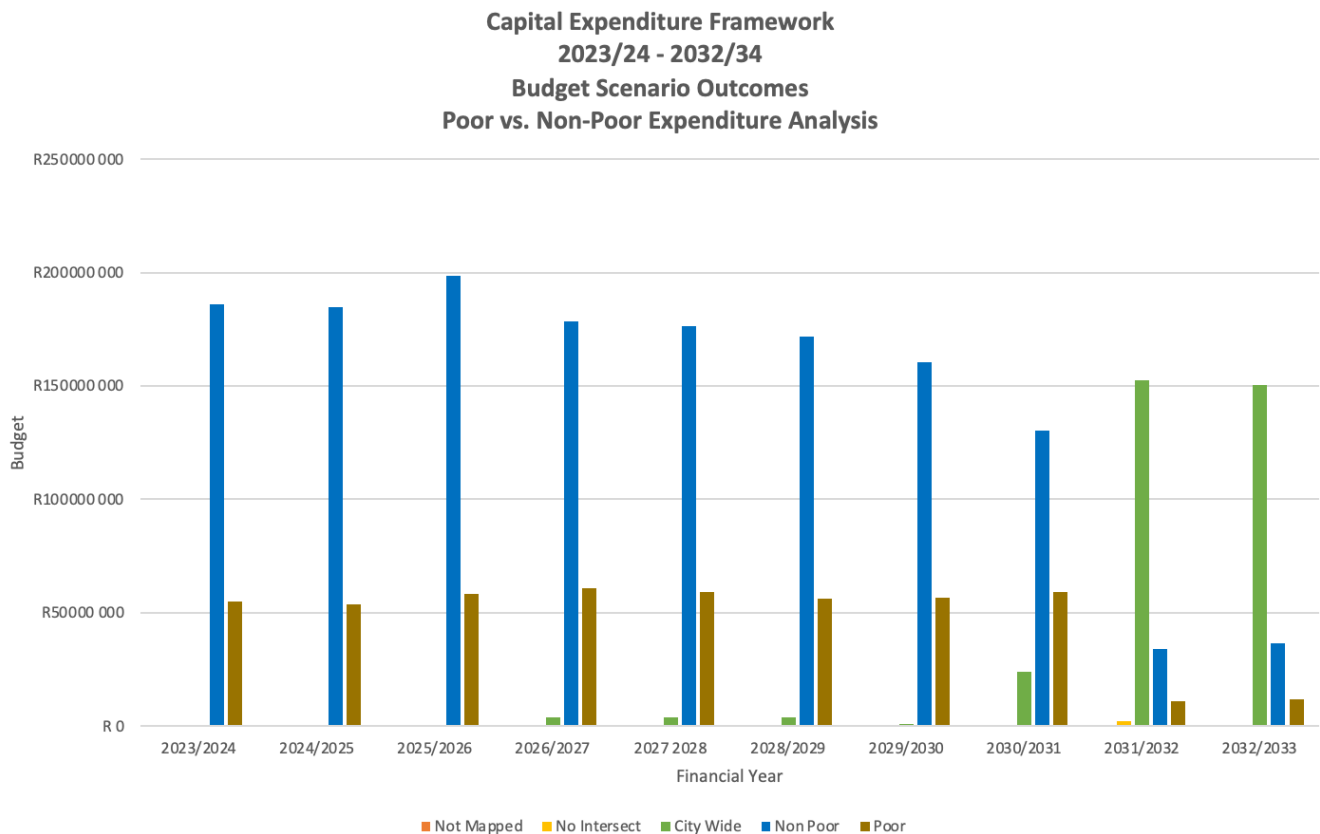
Asset Type and Sub-type	2029/2030	2030/2031	2031/2032	2032/2033	Total	Total %
Waste Processing Facilities	R0	R0	R0	R0	R5 000 000	0,2%
Waste Drop-off Points	R0	R0	R0	R0	R10 000 000	0,4%
Water Supply Infrastructure	R20 250 000	R42 201 795	R94 000 000	R85 500 000	R375 201 795	16%
Reservoirs	R0	R23 000 000	R26 250 000	R26 250 000	R75 500 000	3%
Distribution	R7 500 000	R0	R44 500 000	R40 000 000	R146 000 000	6%
Pump Station	R0	R0	R0	R0	R5 000 000	0,2%
Capital Spares	R2 250 000	R2 250 000	R23 250 000	R19 250 000	R53 750 000	2%
Water Treatment Works	R10 500 000	R16 951 795	R0	R0	R94 951 795	4%
Machinery and Equipment	R0	R0	R0	R50 000	R50 000	0,0%
No Selection	R0	R0	R0	R50 000	R50 000	0,0%
Community Assets	R52 702 128	R36 846 572	R42 822 858	R47 156 191	R336 515 409	15%
Community Facilities	R49 368 795	R33 513 239	R42 822 858	R47 156 191	R309 848 745	13%
Sport and Recreation Facilities	R3 333 333	R3 333 333	R0	R0	R26 666 664	1%
Furniture and Office Equipment	R0	R0	R0	R194 148	R274 148	0,012%
No Selection	R0	R0	R0	R194 148	R274 148	0,012%
Stormwater Infrastructure	R5 628 402	R5 909 822	R10 800 000	R18 000 000	R102 007 508	4%
Stormwater Conveyance	R5 628 402	R5 909 822	R10 800 000	R18 000 000	R102 007 508	4%
Computer Equipment	R329 000	R273 000	R273 000	R273 000	R1 192 000	0,1%
No Selection	R329 000	R273 000	R273 000	R273 000	R1 192 000	0,1%
Investment Properties	R200 338	R200 338	R200 338	R200 338	R1 402 366	0,1%
Revenue Generating	R200 338	R200 338	R200 338	R200 338	R1 402 366	0,1%
Grand Total	R220 545 951	R216 279 744	R209 096 196	R211 536 177	R2 308 126 243	100%

10.6 Poor vs Non-Poor Expenditure

Figure 10-6 and Table 10-11 illustrate the budget scenario outcome by poor vs non-poor expenditure. The figure indicates that a large percentage (63%) of the capital budget is spatially targeted toward the non-poor areas and only 21% of the capital budget is spatially targeted for the poor areas.

The outcome suggests that the non-poor areas, as a result of the higher capital demand, will be in a better position to pay for the infrastructure services provided by the municipality resulting in better income generation or return on investment for the municipality. Poorer areas as a result of lower income may generally struggle to pay for infrastructure services which results in poor return on investment.

There is a sharp decrease in the year 2031 / 2032 in the total planned capital expenditure and an increase in the projects classified as "City Wide". The drastic drop in the poor and non-poor planned budget infers that most of the planned capital expenditure captured was for immediate implementation. Alternatively, services required within the outer years may not yet be known. For "City Wide", these are projects that benefit both the poor and non-poor which the municipality has recognised as necessary for the future.

Figure 10-6: Budget scenario by poor vs. non-poor expenditure analysis

Table 10-11: Budget scenario by poor vs. non-poor expenditure analysis

	2023/2024	2024/2025	2025/2026	2026/2027	2027/2028	2028/2029
Not Mapped	R0	R0	R100 000	R0	R0	R0
No Intersect	R4	R3	R4	R4	R4	R4
City Wide	R0	R0	R0	R3 750 000	R3 750 000	R3 750 000
Administrative HQ	R54 000	R0	R30 000	R40 000	R0	R0
Non-Poor	R185 852 011	R184 830 291	R198 731 660	R178 375 381	R176 373 568	R171 766 326
Poor	R55 090 491	R53 447 212	R58 133 704	R60 829 063	R59 075 989	R56 111 382
Total	R240 996 507	R238 277 507	R256 995 368	R242 994 447	R239 199 560	R231 627 711
Poor: Non-Poor	1 : 0,3	1 : 0,3	1 : 0,3	1 : 0,3	1 : 0,3	1 : 0,3

Table 10-12: Budget scenario by poor vs. non-poor expenditure analysis continued

	2029/2030	2030/2031	2031/2032	2032/2033	Total	%
Not Mapped	R0	R0	R0	R20 000	R120 000	0%
No Intersect	R3	R2	R2 000 000	R0	R2 000 027	0%
City Wide	R750 000	R23 750 000	R152 550 000	R150 412 500	R338 712 500	15%
Administrative HQ	R329 000	R273 000	R10 273 000	R10 517 148	R21 516 148	1%
Non-Poor	R160 402 161	R130 464 670	R33 886 920	R36 370 493	R1 457 053 480	63%
Poor	R56 504 699	R59 234 050	R10 941 716	R11 679 505	R481 047 811	21%
Total	R217 985 862	R213 721 722	R209 651 635	R208 999 646	R2 300 449 965	100%
Poor: Non-Poor	1 : 0,4	1 : 0,5	1 : 0,3	1 : 0,3		



Capital Expenditure Implementation Plan

11 Capital Expenditure Implementation Plan

11.1 What is a Capital Expenditure Implementation Plan

A Capital Expenditure Implementation Plan (CEIP) refers to a detailed programme that outlines the municipality's list of projects that is required to be implemented over a multi-year period. This program is the municipality's list of projects that are prioritised according to the strategic prioritisation process in which projects were given a ranking. Using the budget scenario tool, these projects were allocated resources efficiently whilst ensuring that their capital spending aligns with the affordability envelope and demand quantification of the municipality.

There are multiple benefits of having this overview, some of which are listed below:

- **Improved service delivery:** A Capital Expenditure Programme identifies the most essential projects required to improve service delivery in the municipality. It allows for more effective planning and allocation of resources to meet the needs of the population.
- **Strategic planning:** A Capital Expenditure Programme enables the municipality with a strategic plan, based on an understanding of the projects that are necessary to meet the needs of the municipality. It allows for a long-term vision to be developed that is aligned with the goals of the municipality.
- **Increased efficiency:** By understanding the essential projects, the municipality can ensure that resources are used efficiently. Projects are already prioritised based on their importance, and resources have been allocated accordingly.
- **Attraction of investment:** A comprehensive overview of necessary projects can help attract investment to the municipality. It provides potential investors with a clear understanding of the opportunities that exist in the area and the projects that are necessary to support growth and development.
- **Attraction and retention of residents:** By addressing the needs of the population through these essential projects, the municipality can attract new residents whilst retaining the current population. This can lead to increased economic activity and a higher quality of life for those living in the region.

In essence, the CEP furnishes the municipality with a comprehensive perspective on the essential undertakings it must carry out to fulfil its service delivery responsibilities, while concurrently enticing investment, commerce, and inhabitants from throughout the province.

11.2 2023/24 MTREF Budget Scenario Outcome Analysis

To manage the Capital Expenditure Implementation; National Government, through the MFMA has established the Medium-Term Revenue and Expenditure Framework (MTREF). The MTREF is a rolling three-year expenditure planning tool and defines the expenditure priorities for three years.

This section explores the first three years of implementation as per the Budget Scenario Outcome. It shows an estimation of the following implementation frameworks, however, one must take into cognisance the fact that the municipal planning and implementation process is ongoing and that the implementation framework could be adjusted by the municipality as new capital demand is introduced to the CEF.

It is important to note that the CEF process must be aligned with the municipal budgeting process. This document will be submitted for approval with the final MTREF budget.

11.2.1 2023/24 – 2025/26 MTREF Capital Budget by Financial Year

Given that the whole budgeting process up to this point has been done with the assistance of the CP³ platform, it is now possible to analyse the budget not only in terms of the total CEF but also in terms of key project-related information such as location, asset type, actions, departmental ownership etc. This analysis is therefore a stark reminder that project-level data attribution is critical for sound analysis.

A consistent increase in capital budget allocation over the three financial years within the MTREF is representative of the LTFM that was developed in this CEF and used within the Budget Scenario. The outer year has the largest amount within MTREF, with the highest probability of change, due to Master Planning input, Priority changes and new

developments that may be included during each financial year's planning cycle. These cycles occur annually and can add to better planning of budgets once priority and affordability have been established within the municipality.

Figure 11-1: MTREF Capital Budget by Financial Year

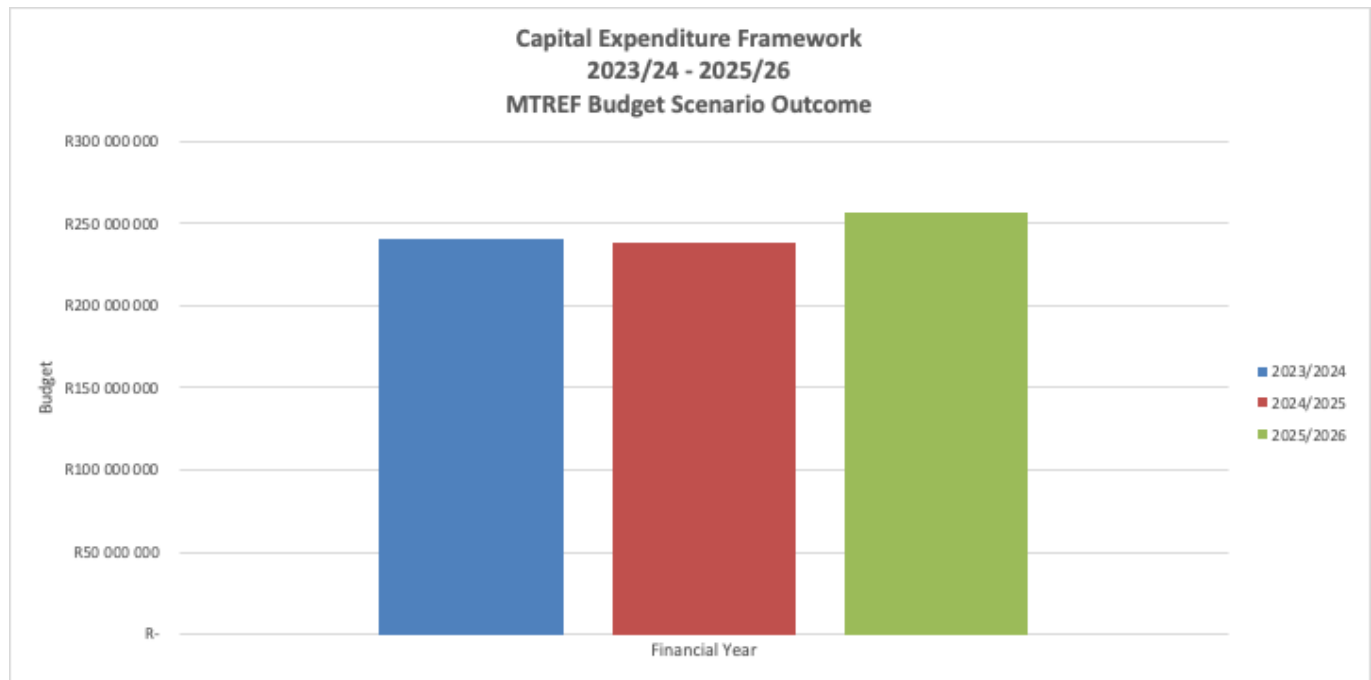


Table 11-1: MTREF Capital Budget by Financial Year

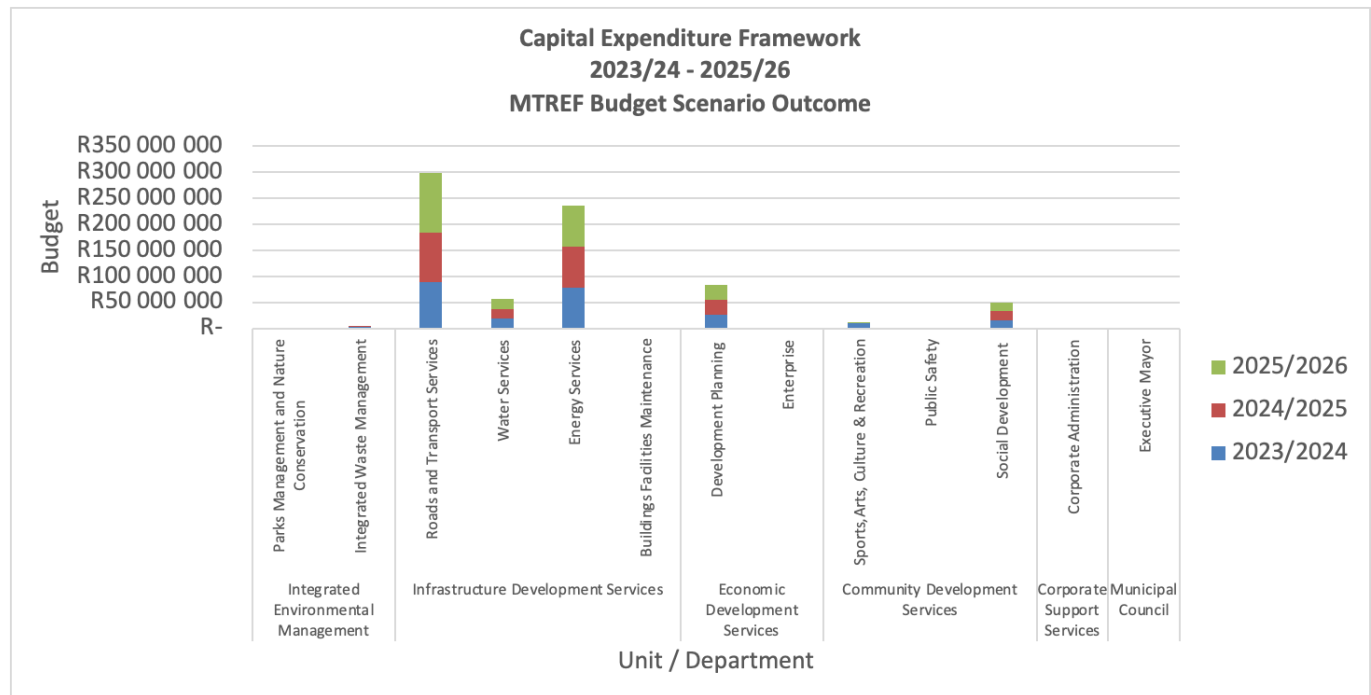
Financial year	Total	Percentage
2023/2024	R240 996 505	33%
2024/2025	R238 277 505	32%
2025/2026	R256 995 366	35%
MTREF Total	R736 269 376	100%

Figure 11-1 indicates a slight deviation in the total budget amount over the three years, with a slight increase towards the outer year. This is indicative of the hope to be able to implement more capital projects as time goes on, whilst facing severe constraints in the first financial years, and the restrictions by the total affordability of the municipality currently as per the LTFM findings as part of the CEF. The affordability envelope limits the number of capital projects significantly and there for several projects will be unfunded in the first 3 financial years. The rest of this chapter will investigate the project-level impacts of this Budget Scenario Outcome within the MTREF with multiple lenses to gain further insight.

11.3 2023/24 MTREF Budget Scenario Outcome by Unit/Department

For this part of the section, the 2023/2024 capital expenditure framework looks at the Unit/Department analysis for the 2023/2024 MTREF Budget Scenario Outcome. A total of 80% of the capital expenditure in the MTREF is allocated to Infrastructure Development Services. This relates to the immediate issues in the municipality as highlighted in the Rapid Assessment of Mogale City.

Corporate Support Services at the time of drafting the budget. This may be due to the operational nature of the function of these departments. Community Services has an 8% of the total capital budget over the MTREF, these capital projects usually take up less of the capital budget allocation due to the nature of the projects, the impact of the projects should not be devalued based on the amount allocated towards a specific unit, investment in community services will ensure an improvement in that the well-being and development of the community.

Figure 11-2: 2023/24 MTREF Budget Scenario Outcome by Unit/Department

Table 11-2: 2023/24 MTREF Budget Scenario Outcome by Unit/Department

Unit/Department	2023/2024	2024/2025	2025/2026	MTREF Total	Total %
Infrastructure Development Services	R185 350 000	R191 422 500	R212 153 625	R588 926 125	80%
Roads and Transport Services	R88 950 000	R94 022 500	R114 723 625	R297 696 125	40%
Energy Services	R77 650 000	R78 650 000	R78 650 000	R234 950 000	32%
Water Services	R18 750 000	R18 750 000	R18 750 000	R56 250 000	8%
Buildings Facilities Maintenance	R0	R0	R30 000	R30 000	0%
Economic Development Services	R26 750 000	R28 012 500	R28 288 125	R83 050 625	11%
Development Planning	R26 750 000	R28 012 500	R28 288 125	R83 050 625	11%
Enterprise	R0	R0	R0	R0	0%
Community Development Services	R26 396 505	R16 342 505	R16 442 505	R59 181 515	8%
Social Development	R16 382 505	R16 342 505	R16 342 505	R49 067 515	7%
Sports, Arts, Culture & Recreation	R10 000 000	R0	R100 000	R10 100 000	1%
Public Safety	R14 000	R0	R0	R14 000	0%
Integrated Environmental Management	R2 500 000	R2 500 000	R111 111	R5 111 111	0,7%
Integrated Waste Management	R2 500 000	R2 500 000	R0	R5 000 000	1%
Parks Management and Nature Conservation	R0	R0	R111 111	R111 111	0%
Municipal Council	R0	R0	R0	R0	0%
Executive Mayor	R0	R0	R0	R0	0%
Corporate Support Services	R0	R0	R0	R0	0%
Corporate Administration	R0	R0	R0	R0	0%
Total	R240 996 505	R238 277 505	R256 995 366	R736 269 376	100%

11.4 Spatial Targeting of the 2023/24 MTREF Budget Scenario Outcome

This section will focus on the spatial, and otherwise defined, implications of the budget scenario developed in the previous section. The spatial analysis is on Mogale City Functional Areas (FAs), Priority Development Areas (PDAs) and Wards. Within the three categories of analysis, please take note of the following:

- Duplication of a project budget is possible as geometric shapes could overlap, which may result in double calculation;
- No intersect refers to a portion of projects that fall outside of the analysis area;
- Administrative HQ contributes to the effective running and management of the municipality throughout the demarcated area, does not necessarily benefit any specific region or ward; and:

- City Wide refers to an investment that benefits more than one service area.

11.4.1 2023/24 MTREF Budget Scenario Outcome Spatial Targeting on Functional Area

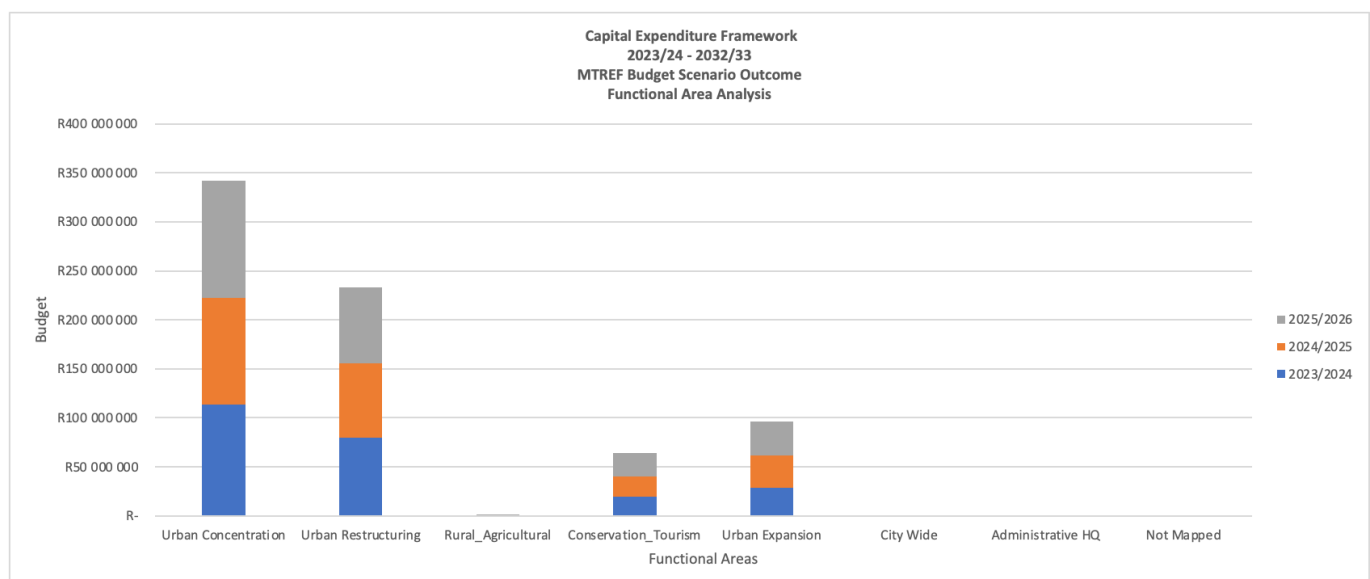
For this part of the section, the 2023/2024 MTREF capital expenditure framework has been expressed in terms of the Functional Areas. It seeks to identify the degree of spatial targeting for Functional Areas achieved in the municipality based on the Budget Scenario Outcome.

Figure 11-3 and Table 11-3 are indicative of 46% in the Urban Concentration; 32% in Urban Restructuring 13% in Urban Expansion. The Urban Concentration, Restructuring and Expansion FAs are inclusive of settlement areas that have programmes planned, that seek to address infrastructure-led services. The third highest spatial component is Conservation Tourism at 9%, this FA is a significant structuring element for the municipality and consists of the conservation as well as the leisure and tourist activities homogenous elements.

Table 11-3: 2023/24 MTREF Budget Scenario Outcome by Functional Area

Functional Areas	2023/2024	2024/2025	2025/2026	MTREF Total	Percentage
Urban Concentration	R113 610 646	R108 611 522	R120 136 398	R342 358 566	46%
Urban Restructuring	R79 383 333	R75 933 333	R77 535 833	R232 852 499	32%
Rural_Agricultural	R137 707	R172 133	R344 267	R654 106	0,1%
Conservation_Tourism	R19 381 710	R20 632 693	R23 776 983	R63 791 385	9%
Urban Expansion	R28 429 109	R32 927 824	R35 071 886	R96 428 820	13%
City Wide	R0	R0	R0	R0	0%
Administrative HQ	R54 000	R0	R30 000	R84 000	0,01%
Not Mapped	R0	R0	R100 000	R100 000	0,01%
No Intersect	R0	R0	R0	R0	0%
Total	R240 996 505	R238 277 505	R256 995 366	R736 269 376	100%

Figure 11-3: 2023/24 MTREF Budget Scenario Outcome per Functional Area



11.5 2023/24 MTREF Budget Scenario Analysis per Priority Development Area

In this section, the 2023/2024 MTREF Budget Scenario Outcome has been expressed in terms of the Priority Development Areas. It seeks to identify the degree of spatial targeting achieved by the municipality for the Priority Development Areas, as identified in the SDF.

A total of 51% of the total MTREF in Mogale City, is not spatially targeted to the priority development areas. This means that 51% of the MTREF will target areas that are not regarded as Priority Development

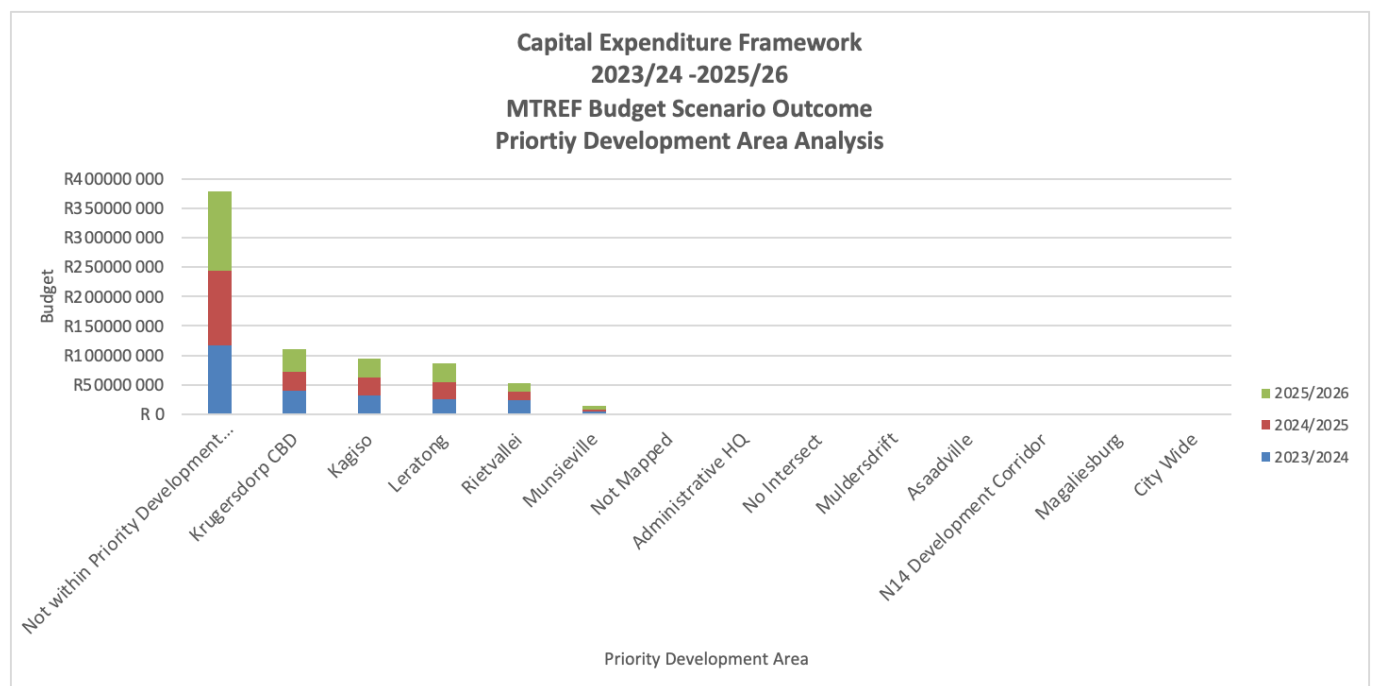
The priority area that has the highest spatial target in terms of capital value is Krugersdorp CBD at 15%, as with the 10-year budget view it is 16%, where multiple Road upgrade projects are committed for in the 2023/2024 MTREF period.

From Table 11-4, Kagiso has the second highest capital expenditure in the short term at 13% of the MTREF targeting this PDA.

Table 11-4: 2023/24 MTREF Budget Scenario Outcome by Priority Development Area

Priority Development Areas	2023/2024	2024/2025	2025/2026	MTREF Total	Percentage
Not within Priority Development Area	R117 277 173,4	R125 960 337,4	R135 374 367,4	R378 611 878,2	51%
Krugersdorp CBD	R40 405 637,8	R32 100 883,7	R37 528 152,7	R110 034 674,2	15%
Kagiso	R31 000 000,0	R32 050 000,0	R30 652 500,0	R93 702 500,0	13%
Leratong	R25 250 000,0	R28 750 000,0	R31 750 000,0	R85 750 000,0	12%
Rietvallei	R23 133 333,0	R15 133 333,0	R15 133 333,0	R53 399 999,0	7%
Munsieville	R3 876 360,7	R4 282 950,9	R6 427 012,8	R14 586 324,4	2%
Not Mapped	R0,0	R0,0	R100 000,0	R100 000,0	0,014%
Administrative HQ	R54 000,0	R0,0	R30 000,0	R84 000,0	0,011%
No Intersect	R0,1	R0,1	R0,1	R0,3	0%
Muldersdrift	R0,0	R0,0	R0,0	R0,0	0%
Asaadvile	R0,0	R0,0	R0,0	R0,0	0%
N14 Development Corridor	R0,0	R0,0	R0,0	R0,0	0%
Magaliesburg	R0,0	R0,0	R0,0	R0,0	0%
City Wide	R0,0	R0,0	R0,0	R0,0	0%
Total	R240 996 505	R238 277 505	R256 995 366	R736 269 376	100%

Figure 11-4: 2023/24 MTREF Budget Scenario Outcome per Priority Development Area



11.6 2023/24 MTREF Budget Scenario Analysis per Discipline

National Treasury has implemented Integrated Financial Management and Internal Control System processes for local government. Key to this is the implementation of the Regulation of a Standard Chart of Accounts, commonly referred to as the Municipal Standard Chart of Accounts (mSCOA). mSCOA makes provision for a uniform and standardised financial transaction classification framework as per the Municipal Regulations and Standard Chart of Accounts as

gazetted on 22 April 2014 (GazetteNo 37577). The following section aims to provide insight into the MTREF Budget Scenario Outcome based on the mSCOA Classification and provide a discipline-based understanding of the MTREF.

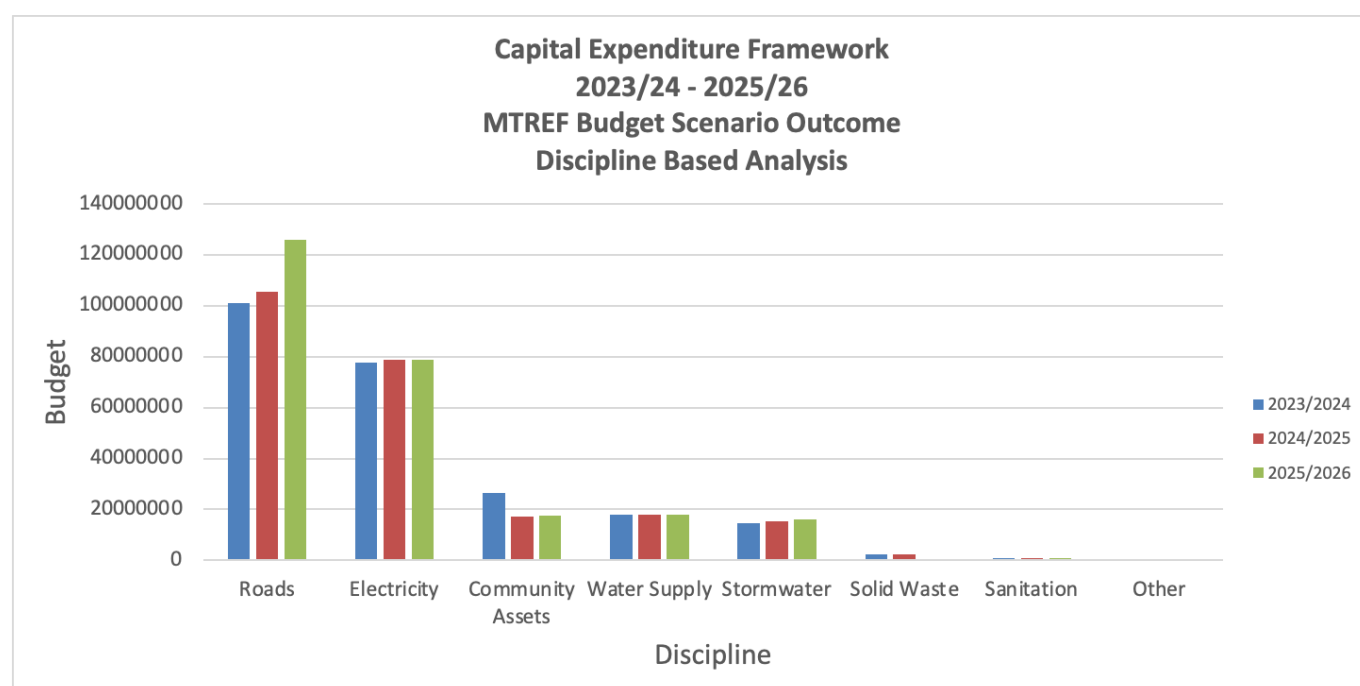
11.6.1 2023/2024 MTREF Budget Scenario Outcome by Discipline

In Figure 11-5 the tower totals at 45% assigned to Roads and 32% on Electricity disciplines. The MTREF Budget Scenario Outcome is indicative of the most affordable and best priority-aligned disciplines in the short term. The two disciplines that had the least capital amounts are Stormwater and Solid Waste, however, this could be a function of classification within Stormwater, rather than actual projects not having any capital in this discipline. Solid Waste is more geared towards operational budgets in the short term, but there are no capital projects planned for this discipline in the long term either.

Table 11-5: 2023/24 MTREF Budget Scenario Outcome by Discipline

Discipline	2023/2024	2024/2025	2025/2026	MTREF Total	Percentage
Roads	R101 053 585	R105 666 465	R125 935 863	R332 655 913	45%
Electricity	R77 650 000	R78 650 000	R78 650 000	R234 950 000	32%
Community Assets	R26 342 505	R17 343 997	R17 455 108	R61 141 610	8%
Water Supply	R18 000 000	R18 000 000	R18 000 000	R54 000 000	7%
Stormwater	R14 700 000	R15 435 000	R16 206 750	R46 341 750	6%
Solid Waste	R2 500 000	R2 500 000	R0	R5 000 000	1%
Sanitation	R750 000	R750 000	R750 000	R2 250 000	0,3%
Other	R54 000	R0	R30 000	R84 000	0,01%
Total	R241 050 090	R238 345 462	R257 027 721	R736 423 273	100%

Figure 11-5: 2023/24 MTREF Budget Scenario Outcome per Discipline



11.7 2023/24 MTREF Budget Scenario Analysis per Asset Type

The mSCOA asset classification is shown in Figure 11-6. From the diagram the Roads and Electrical Infrastructure make up the largest capital spending of the municipality within the MTREF, this correlates to the 10-year horizon view. The Stormwater Infrastructure group benefits the least.

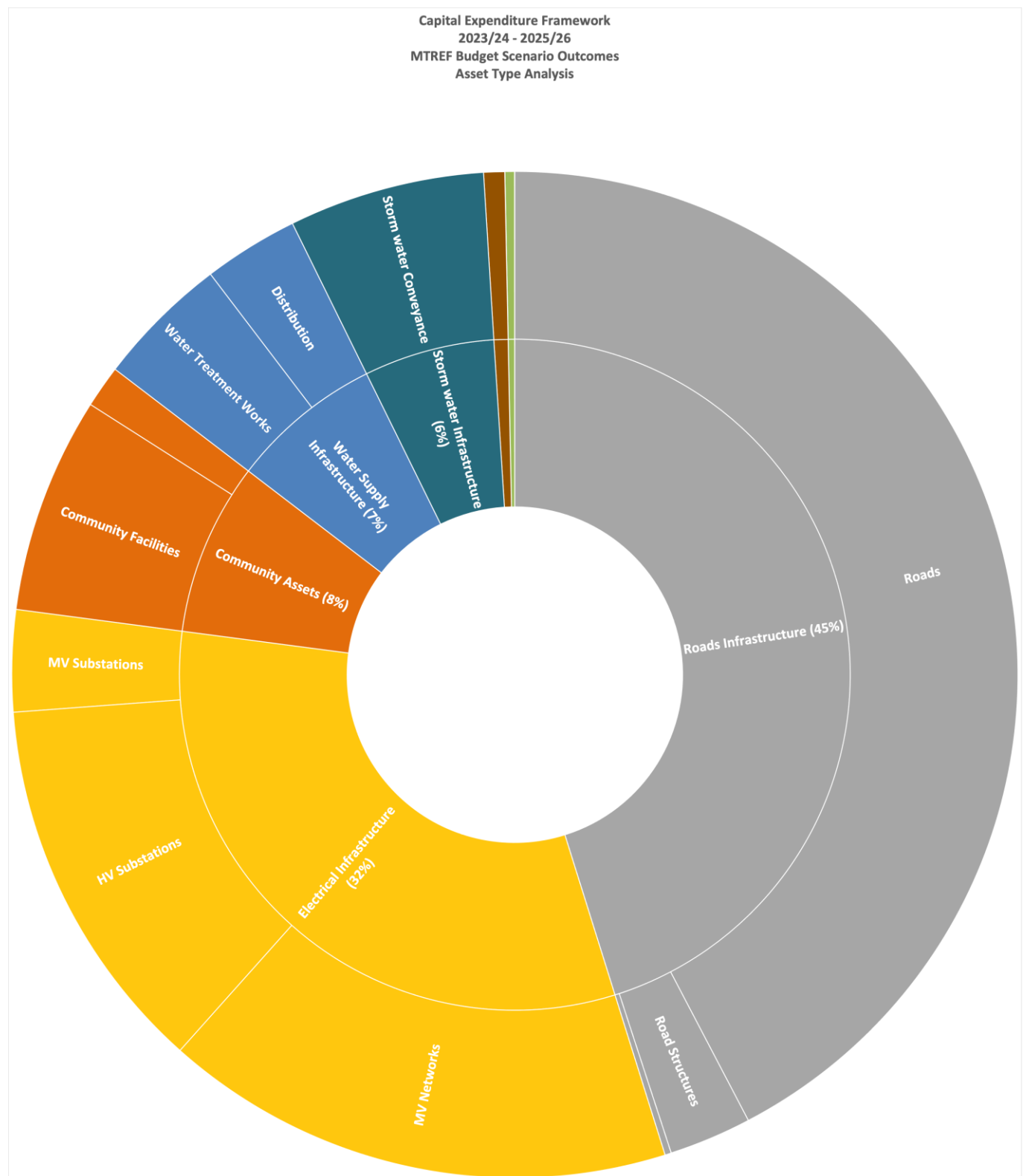
The road asset capital project that is the most expensive within the MTREF is:

- Arterial Roads Construction (N14/Leratong Development). The three-year financial total amount to, R70 000 000.

Table 11-6: 2023/24 MTREF Budget Scenario Outcome by Asset Type

Asset Type and sub-Type	2023/2024	2024/2025	2025/2026	MTREF Total	Percentage
Electrical Infrastructure	R77 650 000	R78 650 000	R78 650 000	R234 950 000	32%
MV Networks	R39 625 000	R40 625 000	R40 625 000	R120 875 000	16%
MV Substations	R8 025 000	R8 025 000	R8 025 000	R24 075 000	3%
LV Networks	R0	R0	R0	R0	0%
Capital Spares	R0	R0	R0	R0	0%
HV Substations	R30 000 000	R30 000 000	R30 000 000	R90 000 000	12%
Roads Infrastructure	R101 053 585	R105 666 465	R125 935 863	R332 655 913	45%
Road Structures	R6 250 000	R6 512 500	R6 788 125	R19 550 625	3%
Roads	R94 301 518	R98 651 898	R118 645 671	R311 599 087	42%
Road Furniture	R502 067	R502 067	R502 067	R1 506 201	0,2%
Sanitation Infrastructure	R750 000	R750 000	R750 000	R2 250 000	0,3%
Retification	R0	R0	R0	R0	0%
Waste Water Treatment Works	R750 000	R750 000	R750 000	R2 250 000	0,3%
Pump Station	R0	R0	R0	R0	0%
Outfall Sewers	R0	R0	R0	R0	0%
Solid Waste Infrastructure	R2 500 000	R2 500 000	R0	R5 000 000	1%
Waste Processing Facilities	R2 500 000	R2 500 000	R0	R5 000 000	1%
Waste Drop-off Points	R0	R0	R0	R0	0%
Water Supply Infrastructure	R18 000 000	R18 000 000	R18 000 000	R54 000 000	7%
Reservoirs	R0	R0	R0	R0	0%
Distribution	R7 500 000	R7 500 000	R7 500 000	R22 500 000	3%
Pump Station	R0	R0	R0	R0	0%
Capital Spares	R0	R0	R0	R0	0%
Water Treatment Works	R10 500 000	R10 500 000	R10 500 000	R31 500 000	4%
Machinery and Equipment	R0	R0	R0	R0	0%
No Selection	R0	R0	R0	R0	0%
Community Assets	R26 342 505	R17 343 997	R17 455 108	R61 141 610	8%
Community Facilities	R23 009 172	R14 010 664	R14 121 775	R51 141 611	7%
Sport and Recreation Facilities	R3 333 333	R3 333 333	R3 333 333	R9 999 999	1%
Furniture and Office Equipment	R40 000	R0	R0	R40 000	0,01%
No Selection	R40 000	R0	R0	R40 000	0,01%
Stormwater Infrastructure	R14 700 000	R15 435 000	R16 206 750	R46 341 750	6%
Stormwater Conveyance	R14 700 000	R15 435 000	R16 206 750	R46 341 750	6%
Computer Equipment	R14 000	R0	R30 000	R44 000	0,01%
No Selection	R14 000	R0	R30 000	R44 000	0,01%
Investment Properties	R0	R0	R0	R0	0%
Revenue Generating	R0	R0	R0	R0	0%
Total	R241 050 090	R238 345 462	R257 027 721	R736 423 273	100%

Figure 11-6: 2023/24 MTREF Budget Scenario Outcome per Asset Type



11.8 2023/24 MTREF Budget Scenario Analysis per Ward

In this section, the 2023/2024 MTREF Budget Scenario Outcome has been expressed in terms of the electoral ward. It seeks to identify the degree of spatial targeting achieved by the municipality in terms of electoral wards.

Table 11-7 and Figure 11-7 indicate capital spend within specific wards, where almost all the capital is distributed over 29 wards, out of the possible 39 wards. That means almost all (99,99%) of the capital expenditure over the three years, is allocated towards approximately 75% of the wards.

Table 11-7: 2023/24 MTREF Budget Scenario Outcome by Ward

Wards	2023/2024	2024/2025	2025/2026	MTREF Total	Percentage
Ward 21	R29 770 811	R34 732 613	R34 732 613	R99 236 037	13%
Ward 26	R30 420 775	R30 525 969	R31 051 937	R91 998 680	12%
Ward 20	R34 274 243	R25 845 429	R29 986 884	R90 106 556	12%
Ward 37	R24 521 561	R25 554 118	R28 643 154	R78 718 834	11%
Ward 7	R23 560 579	R27 060 579	R28 000 000	R78 621 158	11%
Ward 10	R21 439 421	R22 489 421	R23 152 500	R67 081 342	9%
Ward 32	R15 750 000	R16 537 500	R17 364 375	R49 651 875	7%
Ward 2	R11 567 701	R11 565 294	R11 565 294	R34 698 290	5%
Ward 18	R8 432 074	R8 540 093	R9 080 186	R26 052 352	4%
Ward 9	R7 500 000	R7 500 000	R7 500 000	R22 500 000	3%
Ward 39	R3 618 395	R4 078 550	R6 379 321	R14 076 266	2%
Ward 22	R4 429 189	R4 677 387	R4 897 887	R14 004 463	2%
Ward 16	R3 770 917	R3 869 897	R4 364 793	R12 005 607	2%
Ward 38	R2 235 990	R3 128 218	R5 266 956	R10 631 165	1%
Ward 35	R2 879 150	R2 879 150	R2 879 150	R8 637 450	1%
Ward 36	R2 857 321	R1 760 922	R1 760 922	R6 379 165	1%
Ward 34	R6 034 237	R0	R0	R6 034 237	1%
Ward 4	R1 989 078	R1 989 078	R1 989 078	R5 967 235	1%
Ward 25	R1 785 331	R1 840 092	R2 113 893	R5 739 316	1%
Ward 24	R1 019 634	R1 103 615	R1 523 521	R3 646 771	0,5%
Ward 17	R759 189	R948 987	R1 897 973	R3 606 150	0,5%
Ward 1	R688 889	R688 889	R688 889	R2 066 667	0,3%
Ward 14	R326 547	R406 064	R803 646	R1 536 257	0,2%
Ward 29	R226 343	R282 929	R676 969	R1 186 242	0,2%
Ward 27	R218 170	R272 712	R545 425	R1 036 307	0,1%
Ward 3	R865 091	R0	R0	R865 091	0,1%
Not Mapped	R0	R0	R100 000	R100 000	0,01%
Administrative HQ	R54 000	R0	R30 000	R84 000	0,01%
Ward 11	R1 867	R0	R0	R1 867	0,0003%
No Intersect	R0	R0	R0	R0	0%
Ward 31	R0	R0	R0	R0	0%
City Wide	R0	R0	R0	R0	0%
Ward 23	R0	R0	R0	R0	0%
Ward 30	R0	R0	R0	R0	0%
Total	R240 996 506	R238 277 506	R256 995 367	R736 269 378	100%

Figure 11-7: 2023/24 MTREF Budget Scenario Outcome per Ward

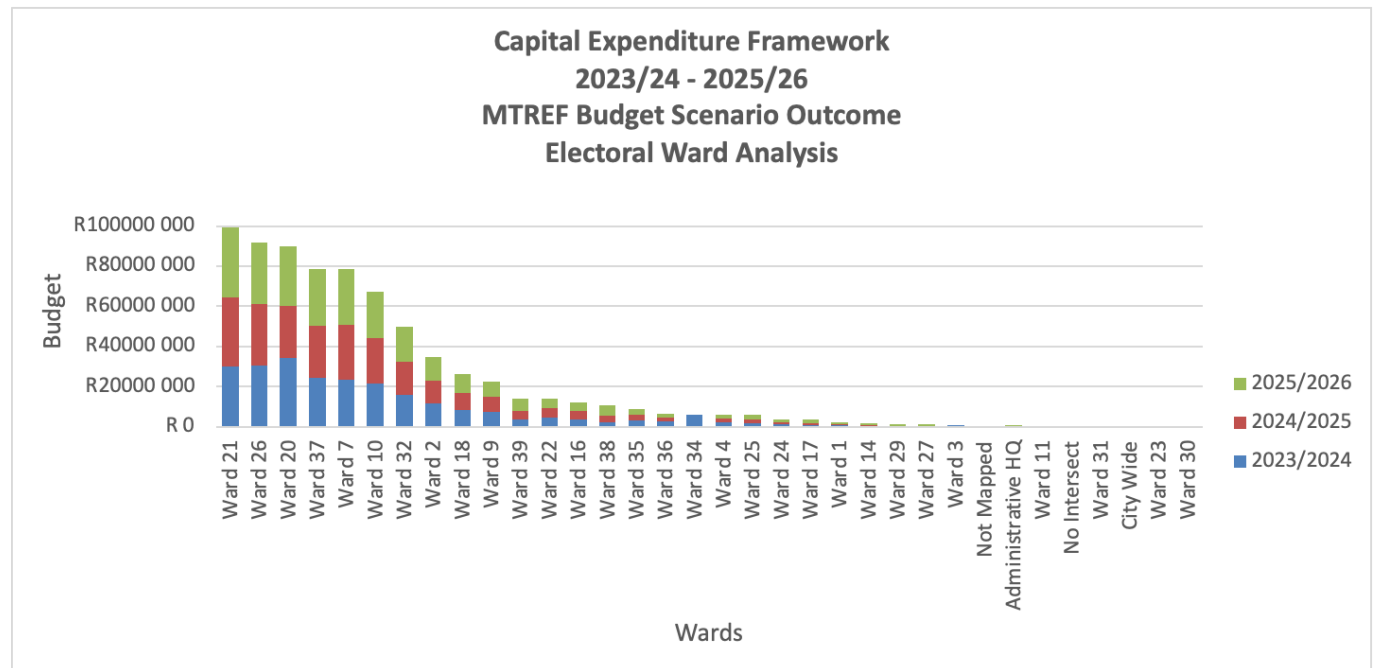


Table 11-8: 2023/2024 MTREF Budget Project List

Unit	Department	Project Name	CP3 ID	2023/2024	2024 2025	2025/2026
Community Development Services	Public Safety	Cds-Desktops x2_PS	978	R14 000	R0	R0
		Cds-Desktops x8_PS	979	R0	R0	R0
	Social Development	Elderly Service Centre Rietvalei Ext 2&3	453	R4 111 111	R4 111 111	R4 111 111
		Mogale City Old Age Home	461	R4 111 111	R4 111 111	R4 111 111
		Rietvalei 2 &3 MPCC	427	R3 333 333	R3 333 333	R3 333 333
		PRT-Burgershoop MPCC rehabilitation and upgrading	92	R1 986 950	R1 986 950	R1 986 950
		Kromdraai Community Hall	458	R1 777 778	R1 777 778	R1 777 778
		Swanneville ECDC	454	R688 889	R688 889	R688 889
		West Krugersdorp Community Hall	457	R333 333	R333 333	R333 333
		Cds-Filling cabinets_SD	984	R40 000	R0	R0
		Tarlton ECDC	459	R0	R0	R0
		Elderly and Youth Centre Magaliesburg	455	R0	R0	R0
		Muldersdrift ECDC	448	R0	R0	R0
	Sports,Arts, Culture & Recreation	Mogale City Museum	425	R10 000 000	R0	R0
		CDS_Upgrade Of ICT Infrastructure in Libraries_LS	204	R0	R0	R100 000
		Ga Mogale Sport Complex	429	R0	R0	R0
		Cds-DJ Sound system Museum	981	R0	R0	R0
		Cds-Rectangular foldable tables x35 Museum	999	R0	R0	R0
Corporate Support Services	Corporate Administration	CSS- Leave Administration (Chairs x12)_HCA	506	R0	R0	R0
Economic Development Services	Development Planning	Upgrade of R28 between Market and Coronation Streets	360	R20 000 000	R20 000 000	R20 000 000
		Traffic calming	355	R5 250 000	R5 512 500	R5 788 125
		Pedestrianizing Monumnet Street from the train station to the Civic Centre	359	R1 000 000	R1 000 000	R1 000 000
		Canal green space near Canal Housing	350	R0	R1 000 000	R1 000 000
		Public Art and Creative Street Furniture	365	R500 000	R500 000	R500 000
		New Civic Square	330	R0	R0	R0
		Public Square	327	R0	R0	R0
		New Industrial Development	302	R0	R0	R0
		Station forecourt/ Public Square	348	R0	R0	R0
		Bus Stops	358	R0	R0	R0
		Upgrade the Taxi Rank	320	R0	R0	R0
		New Public Park	317	R0	R0	R0
		BRT Station	321	R0	R0	R0
		New Taxi Rank	319	R0	R0	R0
	Enterprise	EDS-Projector	1038	R0	R0	R0
Infrastructure Development Services	Buildings Facilities Maintenance	IDS_Laptops_EM	746	R0	R0	R30 000
		PRT-Kromdraai : Community Hall Refurbishment	566	R0	R0	R0
	Energy Services	Factoria & Libertas Transmission line & Upgrade	337	R30 000 000	R35 000 000	R35 000 000
		Refurbish aging inefficient supply systems- Boltania	342	R30 000 000	R30 000 000	R30 000 000

Unit	Department	Project Name	CP3 ID	2023/2024	2024 2025	2025/2026
		Refurbish aging inefficient supply systems- Chamdor	345	R7 500 000	R7 500 000	R7 500 000
		Lusaka 2&3 Renewals	340	R4 500 000	R4 500 000	R4 500 000
		Chamdor & Leratong 2X 20 MVA Transformers	370	R4 000 000	R0	R0
		Refurbish aging inefficient supply systems- Facteria	344	R1 125 000	R1 125 000	R1 125 000
		Refurbish aging inefficient supply systems- Delporton	343	R525 000	R525 000	R525 000
		Replacement of Low Voltage Assests	313	R0	R0	R0
		Meterbox for pre-payment installations	336	R0	R0	R0
		Refurbish aging inefficient supply systems- Emergency projects	346	R0	R0	R0
		Replacement overhead bare conductors with cable	324	R0	R0	R0
		Indigent Pre-payment Instalallation	335	R0	R0	R0
		UMS-High Mastlights in Tudor Shaft/Soul City_EDS	176	R0	R0	R0
		High & Medium Voltage Capital Spares	332	R0	R0	R0
		Conversion from 6 to 11kv	322	R0	R0	R0
	Roads and Transport Services	Arterial Roads Construction(N14/Leratong Development)	477	R17 500 000	R25 000 000	R28 000 000
		Sidewalks, kerbing and road upgrades	478	R21 000 000	R22 050 000	R23 152 500
		Roads Infrastructure	407	R12 000 000	R15 000 000	R30 000 000
		Rural areas grading, gravelling and Construction	476	R15 750 000	R16 537 500	R17 364 375
		Coronation Dam and Channel Upgrade	479	R10 500 000	R11 025 000	R11 576 250
		Storm water networks Upgrading	480	R4 200 000	R4 410 000	R4 630 500
		Pr 2: Rietvallei Ext 2 - Roads and SW Add Funds	577	R8 000 000	R0	R0
		Traffic Engineering/Public Transport	472	R0	R0	R0
		Pr 10: Rietvallei Proper and 1 Roads and SW Ph 2	578	R0	R0	R0
		Planning and management information systems	405	R0	R0	R0
		Roads and surface water drainage works	406	R0	R0	R0
	Water Services	Reduction of water losses- Kenmare Monument & Kagiso	414	R5 250 000	R5 250 000	R5 250 000
		Reduction of water losses- Kagiso	408	R3 750 000	R3 750 000	R3 750 000
		Reduction of water losses- Lewisham	415	R2 250 000	R2 250 000	R2 250 000
		Reduction of water losses- Munsieville	399	R2 250 000	R2 250 000	R2 250 000
		Reduction of water losses- Kenmare	410	R2 250 000	R2 250 000	R2 250 000
		Reduction of water losses- Reitvallei	409	R2 250 000	R2 250 000	R2 250 000
		Waste Water and Sewerage Network - Breunanda	376	R250 000	R250 000	R250 000
		Waste Water and Sewerage Network - Kenmare	375	R250 000	R250 000	R250 000
		Waste Water and Sewerage Network - Reitvallei	377	R250 000	R250 000	R250 000
		UMS-Waste Water Treatment Works - Magalies Bulk Outfall Sewer - Tarlton to MWWTW_WWMS	120	R0	R0	R0
		Sewer pipeline replacement	631	R0	R0	R0
		Pressure Management	651	R0	R0	R0
		Magaliesburg Bulk Water and Sewer	367	R0	R0	R0
		Supply and install of pre-paid water meters	420	R0	R0	R0
		Major Stormwater Catchments area	389	R0	R0	R0

Unit	Department	Project Name	CP3 ID	2023/2024	2024 2025	2025/2026
		Urgent Rural areas water storage and supply-MCLM rural areas	418	R0	R0	R0
		Muldersdrift bulk Sewer	368	R0	R0	R0
		Rural Water and Sanitation	369	R0	R0	R0
		Reduction of water losses- MCLM	411	R0	R0	R0
		Smart (AMR) Prepaid Communal Water Standpipes	658	R0	R0	R0
		Muldersdrift outfall sewer	372	R0	R0	R0
		UMS-Magalies bulk outfall sewer line from Koster to MWWTW_WWMS	170	R0	R0	R0
		Zonal Valves	647	R0	R0	R0
		Urgent Rural areas water storage and supply-MCLM Pango Township	417	R0	R0	R0
		Bulk Stormwater	388	R0	R0	R0
		Network Schematics	653	R0	R0	R0
		Waste Water and Sewerage Network - Lusaka	378	R0	R0	R0
		Chancliff Bulk Sewer	366	R0	R0	R0
		Water pipeline replacement	656	R0	R0	R0
		Refurbishment of Sewer Pump Stations	645	R0	R0	R0
		Muldersdrift Reservoir Tes Odie	397	R0	R0	R0
		Rietvalei Ext 5 Pump station	394	R0	R0	R0
		Refurbishment of Reservoirs	648	R0	R0	R0
Integrated Environmental Management	Integrated Waste Management	Builders' rubble facility	444	R2 500 000	R2 500 000	R0
		Azaadeville Drop-off facility	447	R0	R0	R0
	Parks Management and Nature Conservation	IEM-Kagiso Cemetery Upgrading Phase 2	239	R0	R0	R111 111
		"IEM_P&C (8) Capex (18/19IDP) Upgrade of Munsieville Park (Phase 3) "	469	R0	R0	R0
		IEM-Coronation Park Development_PM	230	R0	R0	R0
		IEM_P&C (4) Capex (18/19IDP) Magaliesburg Cemetery Extension.	466	R0	R0	R0
		IEM-West Haven Cemetery (Phase 3)_PM	240	R0	R0	R0
		IEM_P&C (7) Capex (18/19IDP) Development of new park (Chief Mogale)	468	R0	R0	R0
		IEM_P&C (9) Capex (18/19IDP) Upgrade of MagaliesburgPark	483	R0	R0	R0
Municipal Council	Executive Mayor	MC-Projector Mayors office_02	731	R0	R0	R0
Total				R240 996 505	R238 277 505	R256 995 366

