



Knysna Local Municipality

Knysna Capital Expenditure Framework as an informant to the Knysna MSDF

Final report

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pdg

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1 Introduction

This document presents the Knysna Capital Expenditure Framework (CEF) as is required to be included in the MSDF in terms of SPLUMA. This is set out in Section 21(n) of SPLUMA which requires an MSDF to include a capital expenditure framework for the municipality's development programmes, depicted spatially. The reason for this provision is to ensure that capital investment in infrastructure supports the long-term spatial vision of the municipality, as described in the MSDF. The CEF is also intended to be informed by the capital finance available to the municipality in order to project a picture of realistic expenditure over the long term. As such, this strategically-determined capital framework can then inform detailed capital project planning and subsequent iterations of the Medium-Term Revenue and Expenditure Framework (MTREF).

2 Methodology

The Capital Expenditure Framework (CEF) was developed using the Municipal Services Finance Model (MSFM), an excel-based strategic capital planning tool developed for the DBSA, National Treasury and the Department of Cooperative Governance. Growth projections for Knysna Municipality over a 10-year period were used to generate the capital requirement by service and the capital costs were then apportioned in space according to the source of demand for services.

The MSFM projects the full operating and capital accounts associated with infrastructure provision in a municipal area over 10 years, although for the purposes of this undertaking only the capital costs are presented. The MSFM is based on a user-defined service delivery programme. This is used to project the numbers of consumers with different levels of service in each year of the model run, as well as the numbers of consumers that are provided with different levels of service in each year. The approach is illustrated in the figure below. Once the service delivery programme is known, the model estimates bulk costs, operating costs and capital costs using unit consumptions, operating costs per consumer and capital costs per new consumer connected for each level of service.

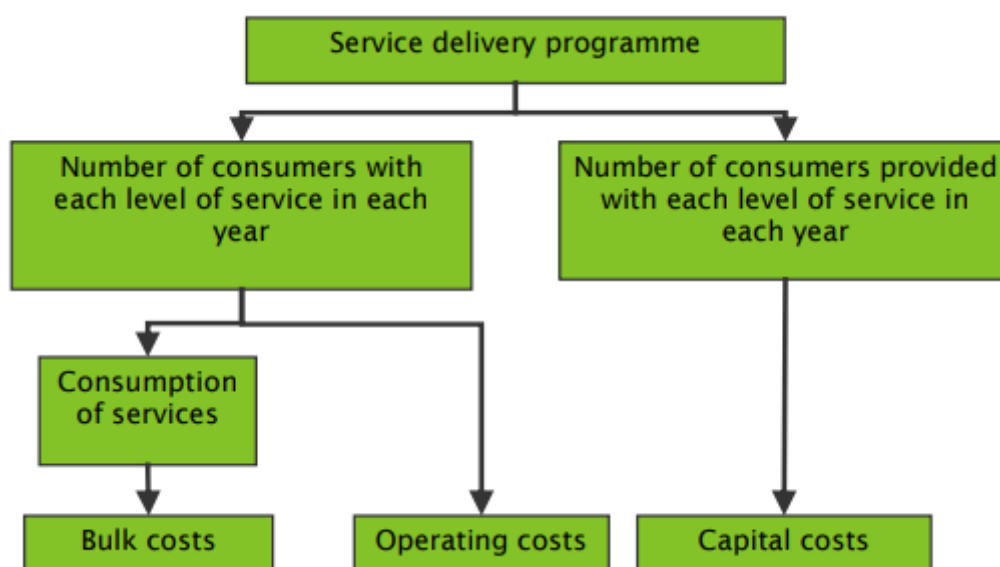


Figure 1: MSFM Model Approach

2.1 Capital expenditure

In the case of capital expenditure, the model considers expenditure on new infrastructure (bulk and connector as well as internal infrastructure financed through housing subsidies) and on the renewal of existing infrastructure.

New infrastructure need is driven by backlog eradication through providing service to currently unserved residents, and by new services demanded by a growing population and economy.

Renewal expenditure is based on an estimate of existing asset current replacement costs (CRC) and asset condition, plus the cost of renewing any additional assets created over time.

The model for Knysna was run on the assumption that infrastructure backlogs will be eliminated in 10 years (by 2028), with the exception of housing, where the modelled delivery is based on proposed figures by the Housing Development Agency (HDA).

Capital expenditure is also categorised as Social (for poor households defined as earning less than R3 500 per month) and Economic (non-poor residential and non-residential).

2.2 Capital finance

The MSFM estimates the capital expenditure need over the 10-year period. The actual capital finance available to the municipality may be less than this need. For the purposes of the CEF, the available capital finance figures have been sourced from the Knysna Long Term Financial Plan (LTFP) produced by INCA Portfolio Managers (IPM) in 2018. The LTFP presents an affordable capital envelope for the next 10 years of R1.236 billion. This available finance is broken down in the table below. This projection has not been interrogated and has been accepted as is¹.

Source	Rm	%
Public & Developers' Contributions	0	0%
Capital Grants	436	35%
Financing	435	35%
Cash Reserves and Funds	365	30%
Capital Expenditure	1 236	100%

Figure 2: Capital funding mix from Long-Term Financial Plan (Source: IPM, 2018, Table 5)

2.3 Spatial definition

The CEF is intended to depict capital programmes spatially, and a practical means to do this is to divide the municipal area into functional areas based on common

¹ It is noted that the LTFP makes no provision for development contributions (development charges) revenue, despite the municipality having a development charges policy. The available capital may therefore be underestimated.

functional characteristics (space economy), infrastructure service catchment areas² and infrastructure cost profiles. For the purposes of the CEF, five discrete functional areas have been defined, as shown in Figure 3. These areas are as follows:

- **Knysna Town:** includes the urban formal residential areas, informal urban residential areas and the commercial/industrial nodes of Knysna Town. Geographically it stretches along the coast from Pezula in the South-East to The Heads in the South-East and covers inland up to Simola at the North-Western periphery and across to Bongani in the North-East.
- **Karatara and Rheenendal:** includes only the residential boundaries of the two towns.
- **Specialised Coastal Settlements:** is made up of the coastal settlements of Brenton and Buffelsbaai as well as the adjacent inland settlements of Belvidere Estate, Nirvana and Phantom Pass.
- **Sedgefield:** includes the traditional centre of Sedgefield town as well as the contiguous areas of Myoli Beach and Montmere.
- **Knysna Rural:** represents all of Knysna Municipality not included in the above areas. This includes the small rural settlements classed as 'Bosdorpies'. All households within this functional area are classed as either rural formal or rural informal by StatsSA.

² Functional areas need to accommodate infrastructure service catchments, such as that of a water treatment works, as upgrading this facility provides additional capacity to the functional region as a whole or vice versa if the facility is constrained. Thus, capital expenditure for such an upgrade should be reflected as the functional area as a whole.

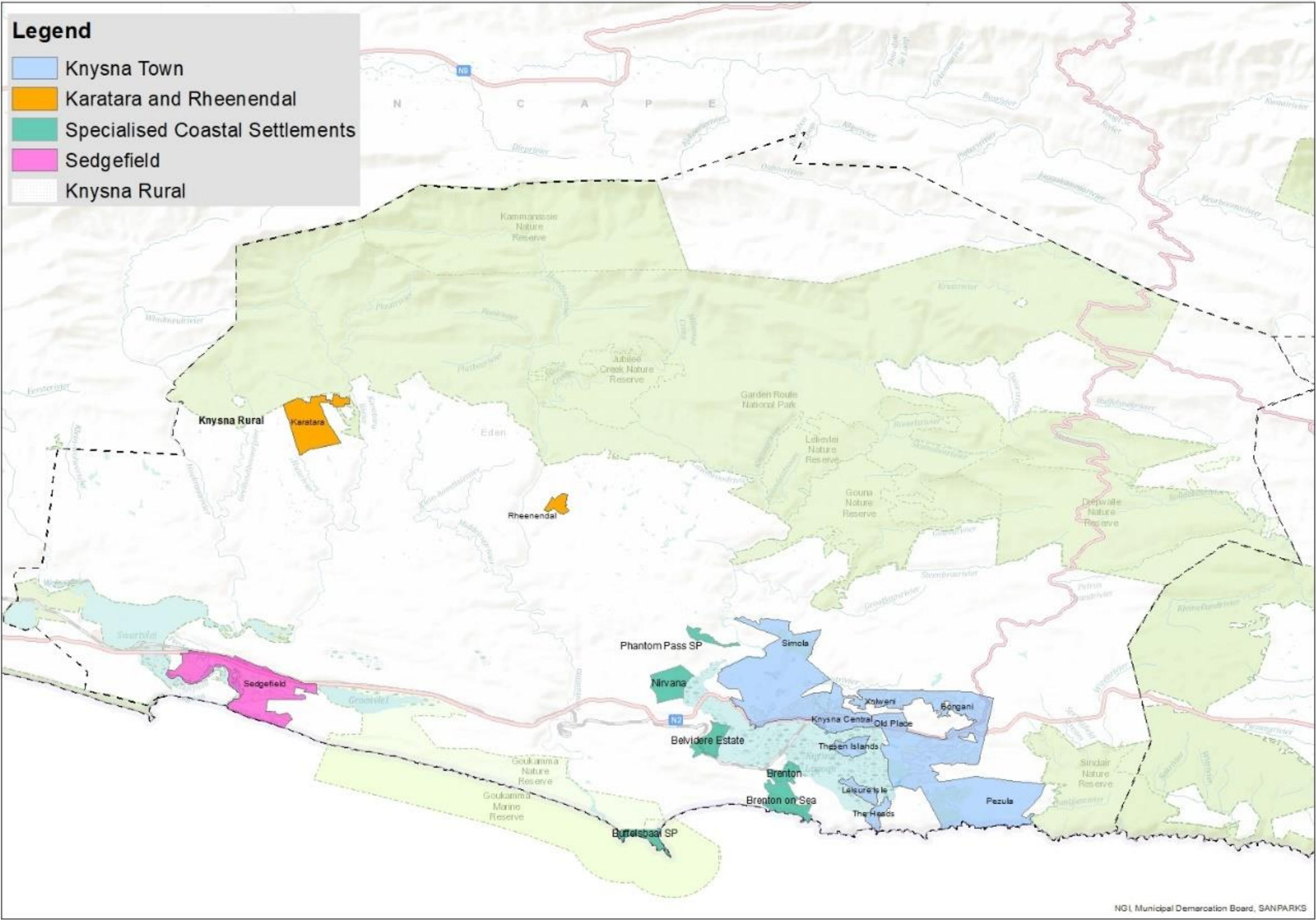


Figure 3: Knysna functional areas

2.4 Demographic projections

Demographic projections are critical to the development of the CEF in two ways:

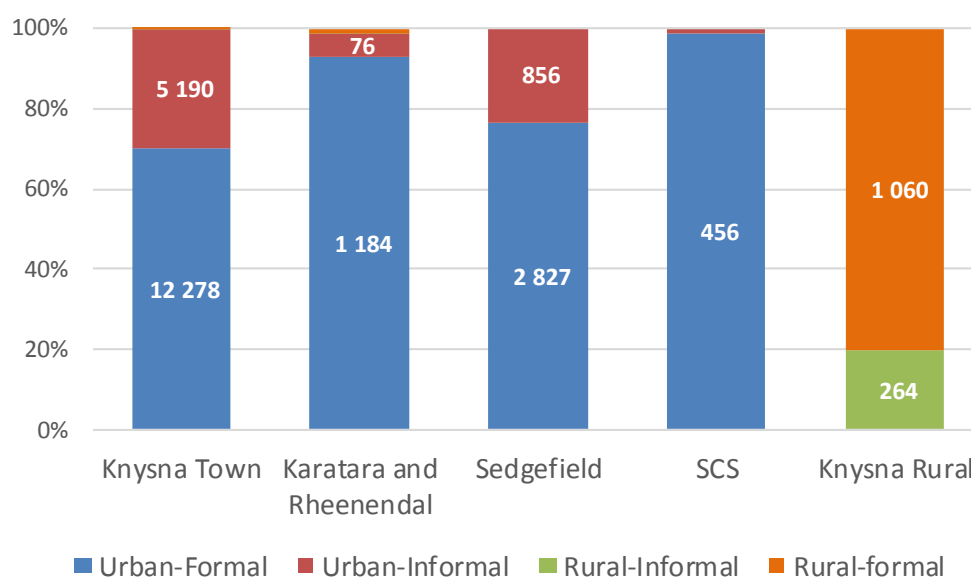
1. The total future population growth of Knysna directly informs the future infrastructure need for the municipality as a whole; and
2. The spatial distribution of this growth (as guided by the MSDf) determines the location of such need and therefore the accompanying capital expenditure in response to demand.

The future total population growth projections used in the MSFM were primarily based on the Western Cape Provincial Government municipal population projections (2018). The data projects the population growth of Knysna as a whole, as well as individual settlements, over the next 10 years to grow at a rate of 1.7% per annum. It is therefore currently assumed that the population of all areas of Knysna will grow at 1.7% per annum over the next ten years³.

The MSFM requires not only population projections for the municipality as a whole but also broken down into four categories based on location and dwelling characteristics:

- Urban formal (rateable serviced formal dwelling in an urban settlement);
- Urban informal (informal dwelling located in an urban settlement);
- Rural formal (formal dwelling located in a rural area); and
- Rural informal (informal dwelling located in a rural area).

Each of the five functional areas have different mixes of these four settlement types as shown in Figure 4. The Knysna Rural functional area comprises only rural households, as defined by StatsSA, and the only other functional area to include rural households is the Karatara and Rheenendal FA and this is a very minor proportion of the population.



³ This assumption may need to be refined based on the spatial vision arising out of the MSDf.

Figure 4: functional area household demographic mix

The breakdown of the population (and households) into these four categories is done using census data. For the CEF census data was analysed for 1996, 2001, 2011 and from the 2016 community survey. This showed a clear trend in terms of a slowly declining rural formal population and a rapid rural informal growth, albeit the latter being from a very small base. This dynamic is critical due to the significantly differing respective unit costs and service levels associated with rural formal and rural informal growth. Therefore no future growth in rural-formal dwellings are projected and this is juxtaposed to an annual growth of 7.3% per annum for rural-informal households⁴. Cumulatively these two rates of growth result in a combined rural dwelling growth rate of 1.7% per annum. The resultant growth in households per functional area over the 10-year period is shown in Figure 5.

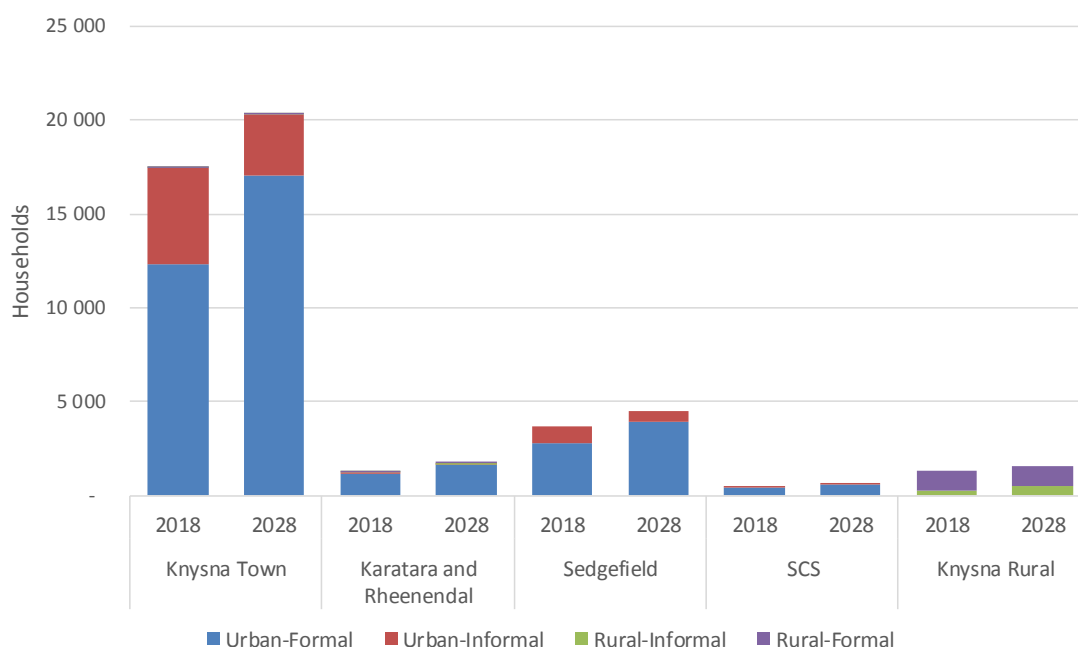


Figure 5: Household growth per functional area 2018 -2028

2.5 Economic projections

Economic projections are necessary to determine the growth in non-residential activity and related infrastructure demand within the municipality. For the Knysna CEF, economic projections from IHS Global Insight (2018) were used which average approximately 2% growth per annum over the next ten years. This is close to the 1.9% historic 15-year average growth rate but is significantly higher than the five-year (2013 – 2017) average of 0.9% growth per annum. Therefore it is likely this represents a relatively optimistic economic growth projection. The implication of an optimistic economic growth scenario is that it projects a capital need for infrastructure that may not materialise, but also projects municipal revenue and increased household affordability that may also not materialise.

⁴ The reason the 0% and 7.3% respective growth rates average to 1.7% per annum is due to the significantly smaller current rural-informal population relative to rural-informal.

It was assumed that economic growth will be distributed in space proportionally to the current distribution of economic activity, which was estimated per functional area using non-residential account and sales data for water and electricity.

The socio-economic household projections, resulting from population and economic driver assumptions, are shown in Figure 6 and are broken down by settlement type and income.



Figure 6: Population projection by settlement type and income

2.6 Spatial apportionment

The total calculated capital investment need over the next ten years was apportioned in space to the five functional areas shown in Figure 3. The MSFM produces required capital expenditure per settlement type (urban-formal/informal etc.) by type backlog/growth/rehab for social, non-poor and non-residential services. The proportional share of each of these settlement types was then apportioned between the functional areas by service, settlement type and capital expenditure type. The drivers of spatial apportionment are shown in the table below.

Capital expenditure type (from MSFM)	Allocation driver per functional area
Social: backlog	Proportion of existing informal dwellings per functional area by locational characteristic (e.g. urban informal)
Social: growth	New poor households per functional area by locational characteristic
Social: renewal	Proportion of existing informal dwellings per functional area by locational characteristic (e.g. urban informal)

Non-poor res: growth	New non-poor households by locational characteristic
Non-poor res: renewal	Proportion of existing non-poor households per functional area by locational characteristic
Non-res: growth	New non-res growth per locational characteristic by current spatial distribution
Non res: renewal	Existing non-res demand per locational characteristic by current spatial distribution

Non-residential expenditure for electricity and water are distributed by actual non-res sales figures, sanitation by non-res water sales, and other services by distribution of non-res water accounts. It is noted that Knysna has a large number of unmetered residential and non-residential water connections which will affect the distribution of non-residential demand. However, electricity must be treated separately due to Eskom service provision in the municipal boundary and therefore would not serve as a strong indicator of non-residential demand across services.

3 Results

3.1 Overall capital need based on growth projections

Total projected capital need over 10 years is R2.69 billion⁵. However, this excludes land and top structures for housing, which are assumed to be funded by external parties. The annual need, broken down by service, is shown in Figure 7, with the current MTREF budget indicated as black diamonds.

⁵ This is substantially lower than the capital need of R7.35 billion indicated in the LTFP, although the LTFP does note that this figure will have changed. We believe the R2.69 billion figure is more realistic.

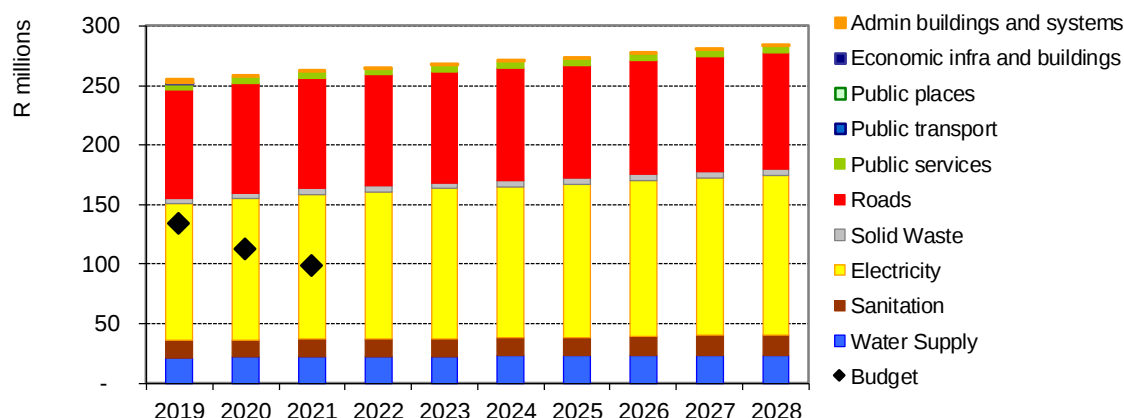


Figure 7: Annual capital requirement before fitting to the budget

As can be seen, the largest drivers of capital need are electricity and roads over the next 10 years. Roads expenditure is driven heavily by growth in non-poor urban residential households and renewal of existing infrastructure servicing non-poor urban residents. Electricity expenditure is most largely driven by non-residential urban growth and to a lesser but still significant extent social household growth in the municipality.

3.2 Fitting capital need to available funding

The LTFP determined the affordable capital over the next 10 year to be R1.236 billion, which is only 46% of the calculated need. Figure 7 indicates that the current MTREF budget is only 46% of the required need over the same period. Capital expenditure therefore needs to be cut to fit the available funding. There are multiple methods of prioritising a limited capital budget, as discussed in section 5.

Ideally, this should be done as a strategic prioritisation process by the municipal council but is beyond the scope of this framework. However, the integration of this strategic financial planning should be part of the CEF development process in future. For the purposes of this iteration of the CEF, capital need for all categories of expenditure have been cut by 46% (i.e. proportionally) (Figure 8). It is important to note that, as the affordable capital envelope was proportionally reduced equally across all sectors, the proportional breakdown of new vs renewal and spatial location of investment is proportionally the same for need and affordable programme, although the absolute figures differ significantly.

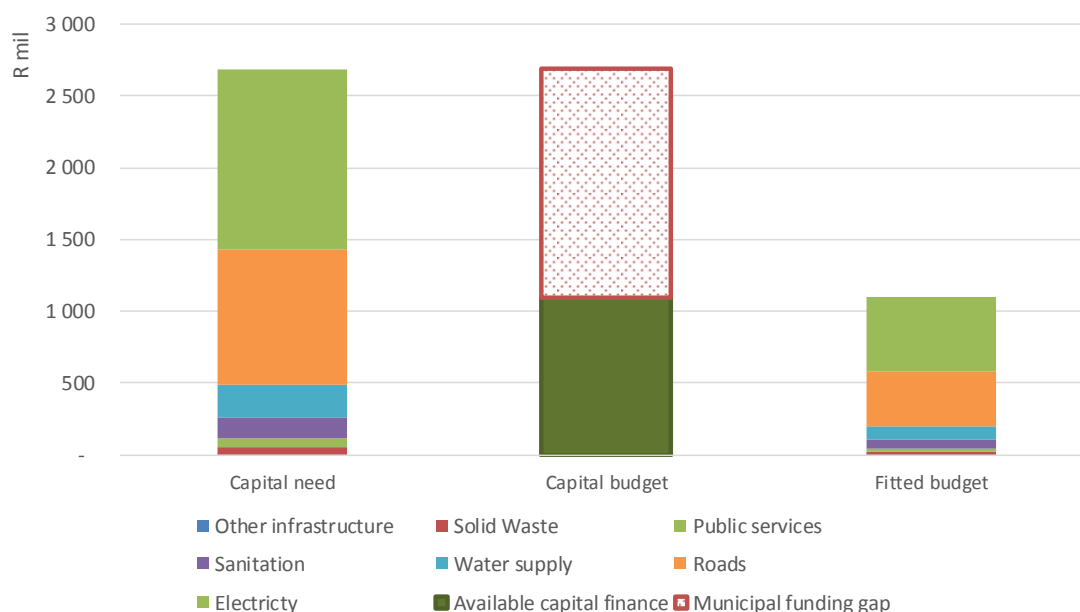


Figure 8: Capital need fitted to capital budget

The capital expenditure that is presented spatially therefore depicts a 'fair' allocation of capital, with all things being equal. However, there are other important considerations that the municipality may need to make in this allocation. These considerations are discussed in the final section of this report.

3.3 Affordable capital programme by service

The total affordable expenditure, broken down per service is shown in Figure 9.

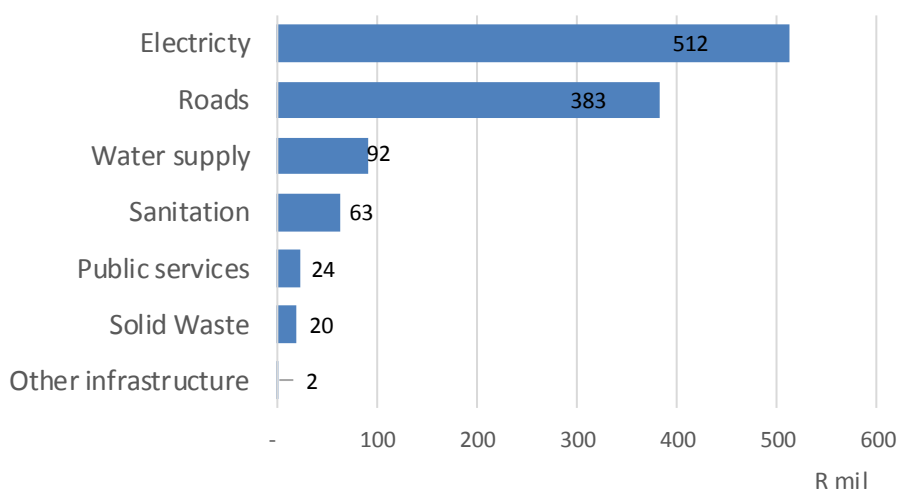


Figure 9: Allocation of affordable expenditure per service over 10 years (R million)

It is worth noting here that the Knysna Municipality has identified the need for a new dam on the Knysna River to address current resource shortages. A project feasibility study is earmarked to be undertaken in the current financial year, but initial cost estimates are in the region of R200 million. This cost need has not been included in the above as the provision of water resource infrastructure such as new dams is a

National DWS mandate. However, if Knysna Municipality were to self-fund this project it would mean the capital need over the period would increase by 7.5%, and water need would represent a far larger proportional sector demand. Therefore, it is imperative that municipality engage with DWS on appropriate funding mechanisms for such a project.

3.4 Capital expenditure by type

Figure 10 shows the breakdown of capital expenditure need (which is proportionally the same as that which is determined affordable) in terms of servicing new growth, renewing existing infrastructure and meeting the needs of future growth across the municipality. As can be seen, the majority of expenditure need is to cater for new future growth in the municipality, indicating relatively good infrastructure condition and service levels.

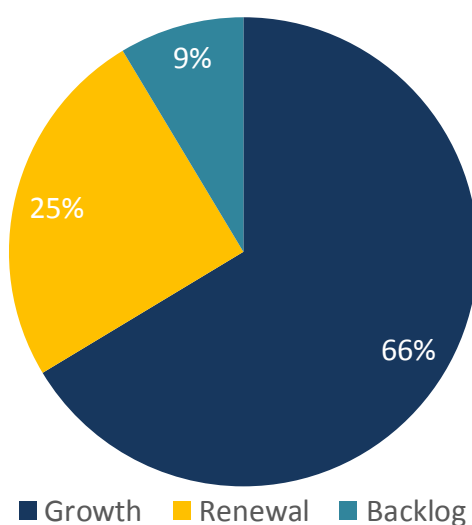


Figure 10: Affordable expenditure by infrastructure investment type

Figure 11 shows the comparison of capital need against the affordable capital programme in terms of growth, renewal and backlog infrastructure investment.

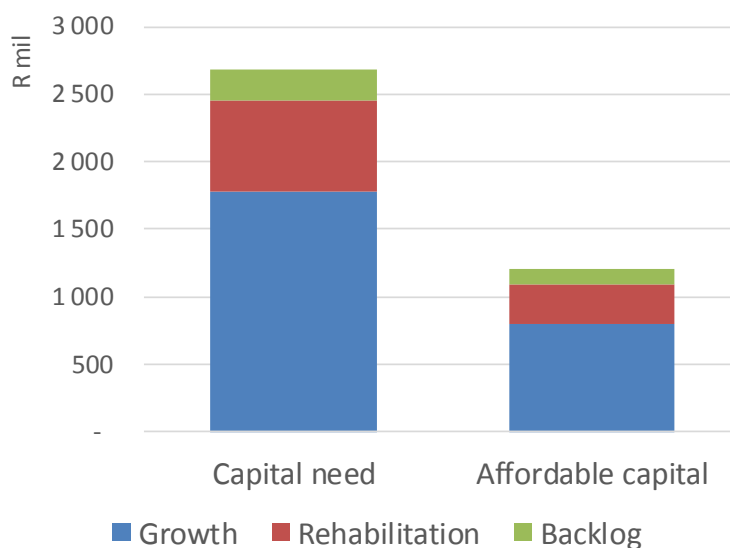


Figure 11: Capital need versus affordable capital programme by infrastructure investment type

The cutting of capital expenditure for each category of expenditure has different implications for the municipality, as follows:

Growth: The municipality will not be able to provide the necessary infrastructure to support all types of growth – anticipated commercial and industrial growth, non-poor residential growth and growth created through subsidised housing provision.

Rehabilitation: The condition of municipal infrastructure will deteriorate if not renewed and will extend beyond the useful life of assets. This elevates the level of risk of infrastructure failure, which may be severe in the case of critical infrastructure like water and wastewater treatment works and road structures. It may also compromise the quality of service provided to existing municipal customers (power and water outages, potholes, etc.) which in turn may impact on revenue collection rates.

Backlog: The municipality will not be able to provide all unserved households with basic services over the 10-year period.

3.5 Affordable capital expenditure by customer type

Total affordable expenditure (excluding land and top structures) is broken down into social, non-poor residential and non-residential (economic) expenditure in Figure 12. This indicates that in order to provide for adequate renewal, new growth and current backlogs Knysna should be spending the largest share of capital (43%) on social infrastructure, i.e. on the current and future indigent households of the municipality. Most of this social expenditure is on new growth (Figure 13), which is driven by the ambitious housing programme outlined by the HDA. The housing programme would require a substantial investment from the municipality in addition to the Human Settlement Development Grant funding. The remaining expenditure need, after social investment, is divided roughly equally between non-poor households and economic (non-residential) demand.

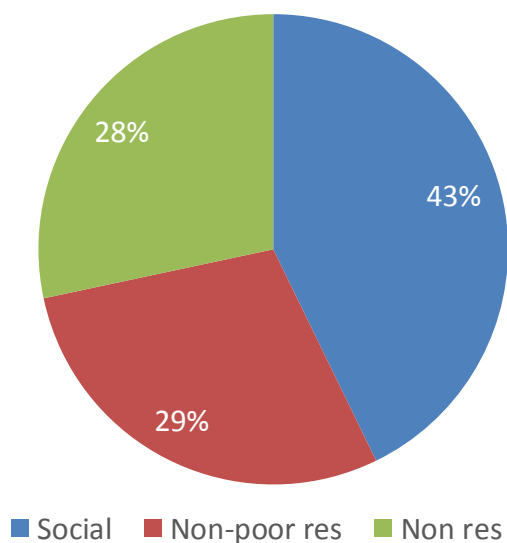


Figure 12: Affordable expenditure by customer type

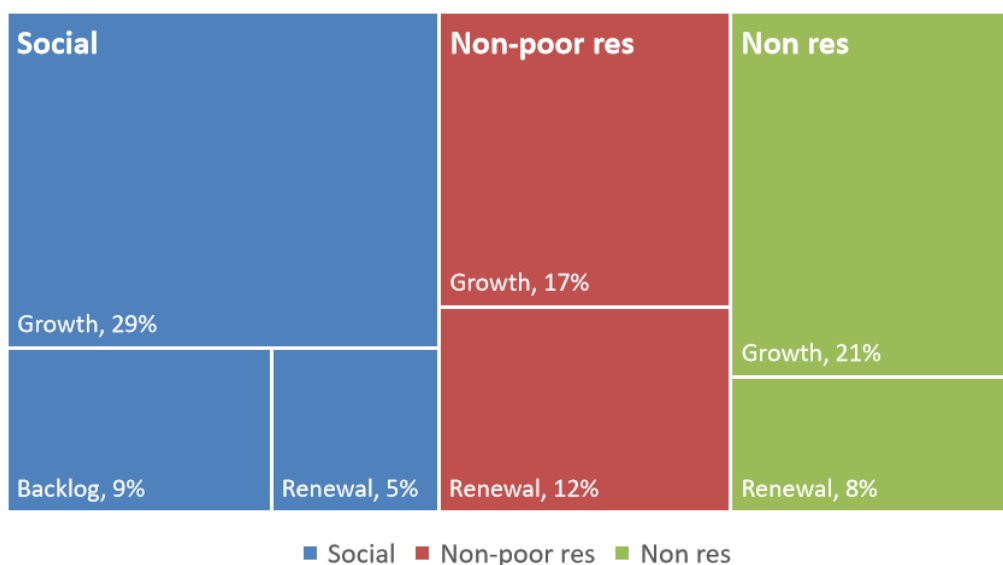


Figure 13: Affordable capital expenditure disaggregated by customer and infrastructure investment type

Overall it can be seen that new future growth will account for 67% of all capital investment need while renewal of existing infrastructure accounts for 25% of future need.

In addition to the above, R3.2 billion in grant funding is required for land and top structures as part of the proposed housing programme. If this is added to the above figures, then social investment which would make social backlog account for 74% of total investment in the municipality. The relatively high land and top structure costs are partly due to an ambitious delivery target and partly due to a high level of service planned in terms of product mix.

Figure 14 indicates the absolute figures of future capital need and affordable capital expenditure by customer type.

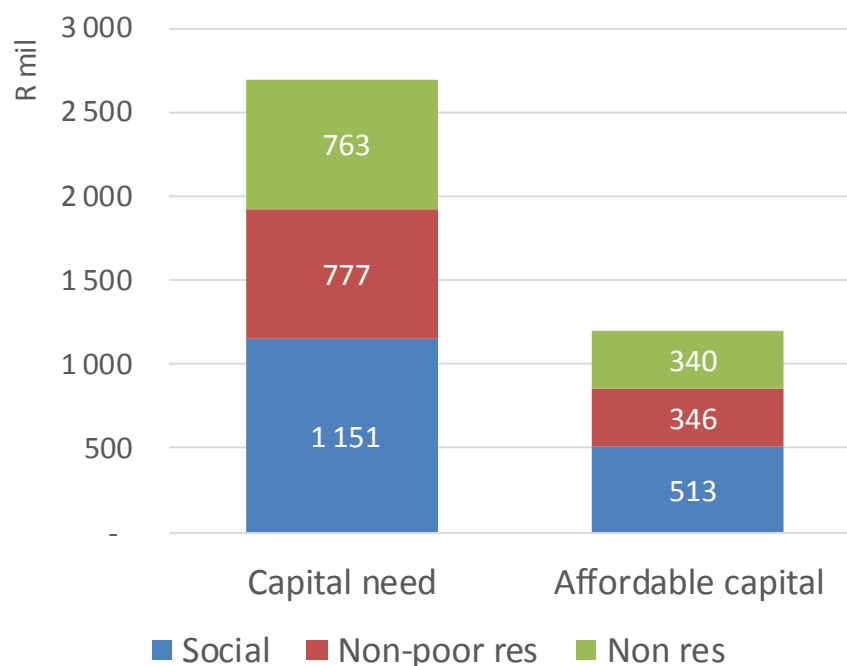


Figure 14: Capital need versus affordable capital programme by customer investment type

3.6 Affordable capital expenditure in space

Figure 15 shows the capital need per functional area by municipal service compared to the affordable capital programme. Knysna Town, as the most populous and most developed region, requires by far the most capital investment over the next 10 years, amounting to just under R2 billion, representing 73% of capital investment need (excluding land and top structures for housing). Of the R878 million *affordable* expenditure in Knysna, 50% is required for electricity investment and 32% for roads. Sedgefield represents 12% of affordable capital need and Knysna Rural 8%. The Karatara/Rheenendal area and the Specialised Coastal Settlement (SCS) areas represent 5% and 2% of affordable capital expenditure need respectively.

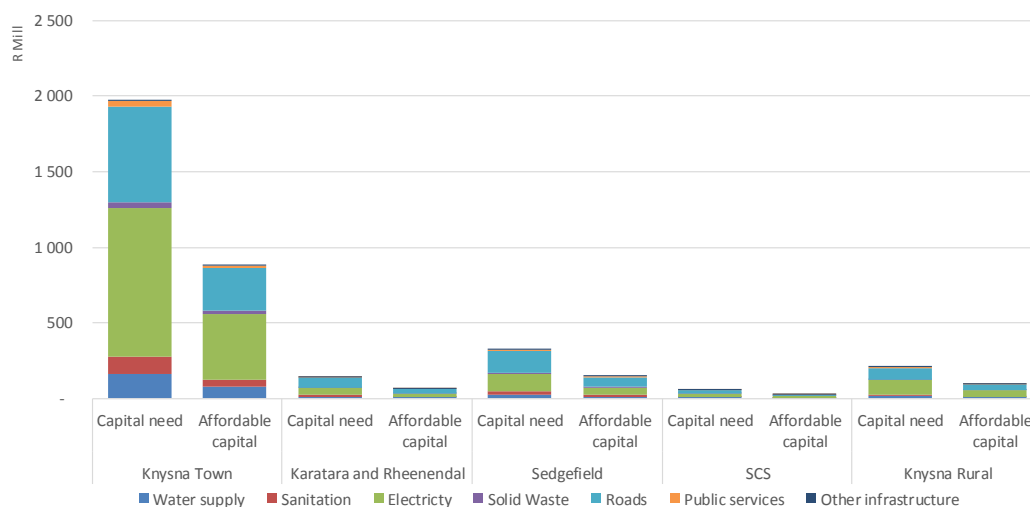


Figure 15: Capital need and affordable expenditure per functional area and by service

However, if land and top structure costs are added to this then the Karatara/Rheenendal functional area requires 17% of capital investment and Sedgfield 11%.

Figure 16 shows the proportional breakdown of the above figures by need per functional area in terms of demand and infrastructure investment type. What can be inferred from the charts in Figure 16 is that if backlogs are prioritised, then spending would be shifted towards Knysna Rural, Knysna Town and Sedgfield. A similar spending shift would happen if renewal was prioritised. However, if social growth (driven by subsidised housing) is prioritised, then spending would shift to Karatara and Rheenendal, Sedgfield and SCS.

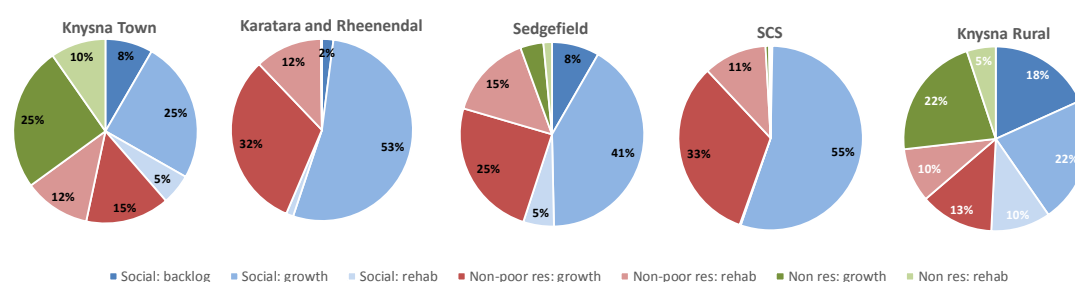


Figure 16: proportional capital investment need per functional area

The largest criteria of need in terms of absolute figures are the social growth and non-residential growth requirements in Knysna Town, accounting for 50% of the functional area need over the next 10 years. Although the absolute values of the three other majority urban functional areas are relatively minor compared to Knysna Town, these areas will all require proportionally significant capital investment in social growth over the next ten years, ranging from 41% - 55% of all capital in the respective areas.

4 Comparison between capital expenditure framework and current Knysna MTREF budget (2018/19-2020/21)

The CEF presents expenditure over 10 years, which will not be undertaken in equal instalments every year and some 'lumpiness' is expected. However, it is informative to compare the relative proportions of expenditure between the CEF and the MTREF. As the MTREF is not spatialised⁶, the comparison is only undertaken by service and by expenditure type. The affordable capital expenditure determined for 3 years is R360 million, which is similar to the MTREF total capital budget of R389 million. Figure 17 indicates that water supply and sanitation is a priority at present, while electricity and roads are not being allocated as much as would be expected. This may be because of recent expenditure on these services. Anticipated solid waste expenditure on transfer stations and recycling facilities is not present in the MTREF, while public services expenditure is larger than would be expected.

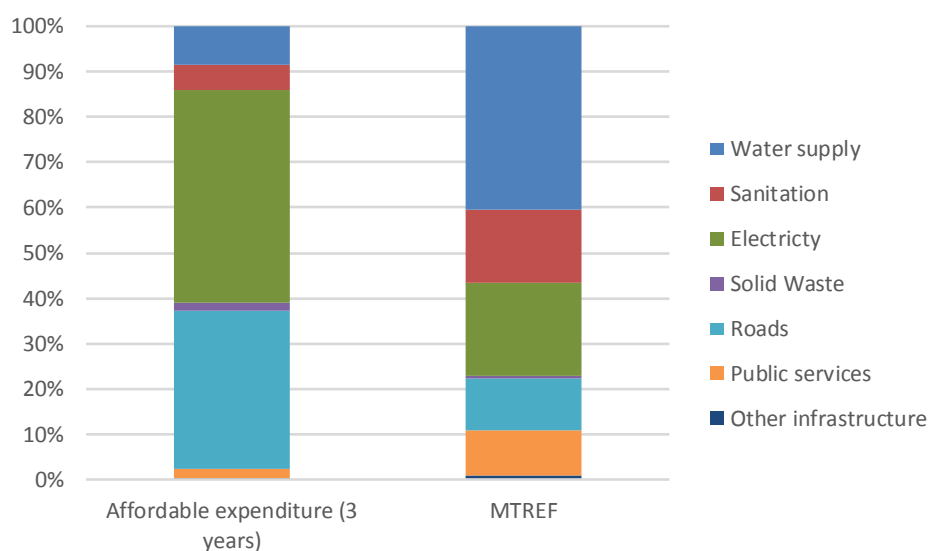


Figure 17: Comparison between the CEF allocation of expenditure and MTREF (2018/19-2020/21)

Figure 17 indicates that the current MTREF is allocating 27% of the capital budget to renewal, which is slightly higher than expected in terms of the CEF.

⁶ Only 5% of capital projects are assigned to wards in the National Treasury MBRR tables.

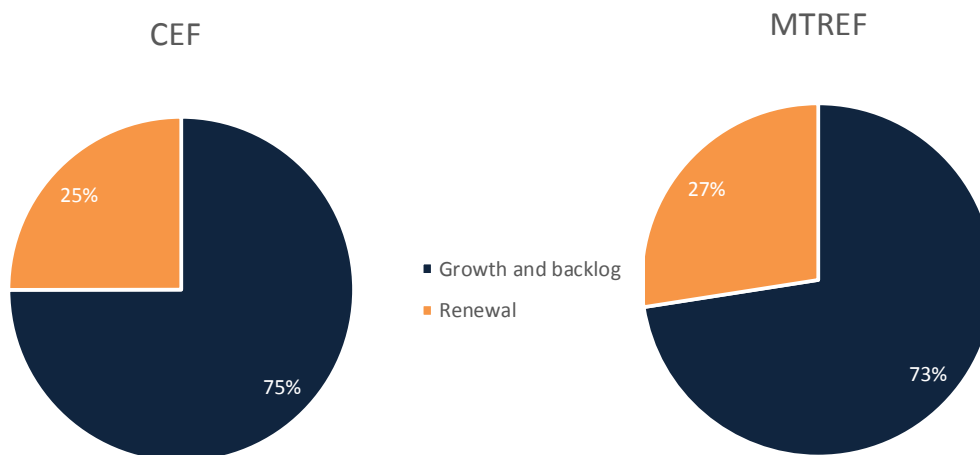


Figure 18: Comparison between growth and renewal allocations in CEF and MTREF (2018/19-2020/21)

However, the proportional allocation of budget towards renewal should not obfuscate the fact that the actual need (in absolute numbers) of R673 million over 10 years is calculated based on the estimated value of assets owned by the municipality and that exist. This expenditure would amount to R202 million over the MTREF period, compared with the R107 million that has been allocated to renewal in the MTREF (Figure 19).

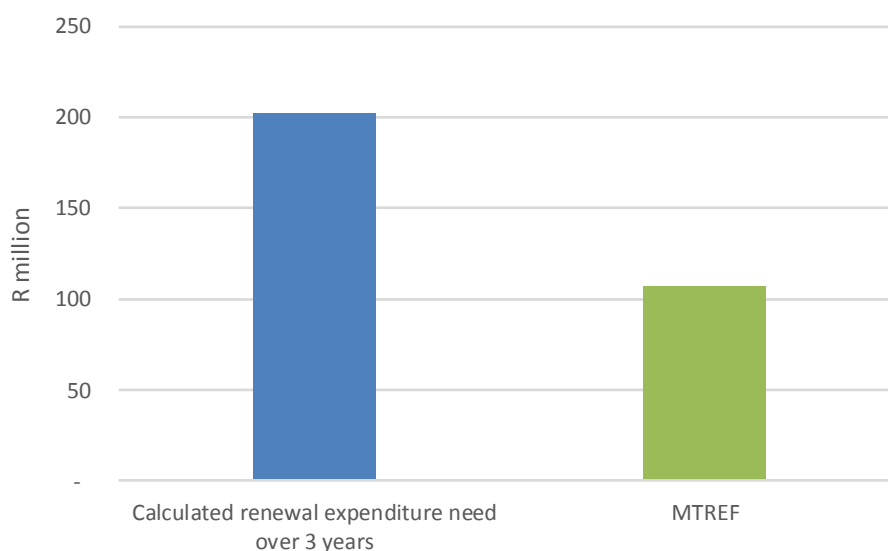


Figure 19: Calculated renewal expenditure need over 3 years compared with allocated renewal expenditure in the MTREF (2018/19-2020/21)

5 Strategic spatial budgeting considerations

The allocation of available capital funding to programmes or projects can be done a number of ways. At a fundamental level, a municipality may choose to focus on

increasing revenue to increase the funding available, cut expenditure, or (most likely), to do both.

Some possible means of allocating capital in the short term include:

- Prioritising service backlogs to achieve social objectives and political mandates;
- Prioritising economic infrastructure to grow the economy and revenue base;
- Prioritising renewal of assets to sustain services to ratepaying customers to protect existing revenue base;
- Prioritising non-poor residential growth to grow the revenue base;
- Prioritising investment in specific areas where costs are lowest or where other, non-financial returns on investment are achieved; or
- Any combination of the above.

The important factor from the perspective of the CEF is that all this expenditure happens in space and the strategic intent of the prioritisation will convert into projects in particular areas. Given that the allocated expenditure, particularly if it is on economic infrastructure, will impact on operating costs and revenue, which in turn will impact on the available funding, it is necessary to revisit both the capital funding envelope and the expenditure allocation regularly as part as the CEF/MSDF preparation process.

6 References

INCA Portfolio Managers (IPM). 2018. Knysna Municipality Long Term Financial Plan – Update 2017, Update March 2018.

Knysna Local Municipality. 2018. MTREF Budget Schedules 2018/19 MSCoA V6.2. Electronic Excel spreadsheet supplied by Finance Department.