5.1 WHAT IS A CAPITAL EXPENDITURE FRAMEWORK

Both the Municipal Systems Act, 2000 (Act 32 of 2000) and the Spatial Planning and Land Use Management Act, 2013 (Act 16 of 2013) requires that a municipal spatial development framework "determine a Capital Expenditure Framework for the municipality's development programmes, depicted spatially". The intention is to more effectively link the municipality's spatial development strategies with the municipality's budget and the budgets of other government stakeholders, grounded in the existing and future infrastructure backlogs and demands, as well as the affordability envelope as defined by the Long Term Financial Plan, as illustrated in Figure 5.1 below



Figure 5.1: The Capital Expenditure Framework as the meeting point between Spatial Planning, Infrastructure Planning and Financial Planning (Knysna, 2019)

Figure 5.2, below, illustrates the point that infrastructure investment need generally exceeds available capital finance. It is therefore imperative for the municipality to undertake a prioritisation process to determine that which is affordable.



Figure 5.2: The Capital Expenditure Framework assists in determining what is affordable, within the 'affordability envelope' that is set out in the Long-Term Financial Plan (Knysna, 2019)

The CEF aims to set the financial parameters, and a prioritised capital expenditure programme must be defined. The CEF section of the MSDF seeks to better bridge the translation of the MSDF into capital programmes for implementation through the IDP and related municipal budgeting process.

Figure 5.3 across articulates the ideal relationship between the MSDF, infrastructure master plans, IDP and municipal budgets from a built environment perspective.

One of the contributing factors to the lack of spatial transformation is that strategic policy seldom leads the implementation agenda of municipalities. Rather, implementation, and more specifically budget spending, tends to focus on the short-term which is further entrenched in the 5-year programme of the "term of office" political structure (contained in the Integrated Development Plan) and the 3-year budget cycles (contained in the Medium-Term Revenue and Expenditure Framework). Ideally, the infrastructure and built environment programmes articulated in the 5-year Integrated Development Plan should align with the spatial objectives of the MSDF, which is a 20-year plan for the management of the physical growth and development of the municipality.

Annual assessments of municipal IDP's have generally shown a poor linkage between the spatial strategies and proposals articulated in MSDF's, and the proposed location of investment of budgeted infrastructure and built environment programmes within municipalities. This misalignment, while not apparent in all municipalities, is fundamentally problematic and must be addressed.

It is worth noting that the "problem" itself does not only sit with the IDP content and process itself, but also in the lack of clear articulation of the clarity that the MSDF provides to various infrastructure investment programmes required to implement the MSDF, in the MSDF, as well as the routine annual systems of budgeting that do little to link the budget decision-making process back to the plans and strategies of the municipality.

There is an overwhelming need to lengthen planning horizons and to encourage decision makers to take a longer-term view. A view that appreciates that decisions taken today are the foundation upon which the municipality's spatial form, infrastructure network and financial standing will be based in the years and decades ahead.

The Capital Expenditure Framework (CEF) offers a mechanism through which the municipality's long-term strategic development vision truly directs infrastructure implementation whilst remaining conscious of the municipality's financial position and infrastructure planning needs.



Figure 5.3: Articulating the ideal relationship between municipal planning tools from a built environment perspective

The outputs of this process are a portfolio of capital projects required and a prioritised capital infrastructure programme, which is responsive to the MSDF, the engineering needs and the affordability of the municipality.

5.2 CAPITAL EXPENDITURE FRAMEWORK METHODOLGOGY

An adapted version of COGTA's "Guide to Preparing a CEF" has been adopted for this CEF. The method will include 3 Main Stages (Demand, Funding Envelope and Budget Scenario) and 5 phases as shown in Figure 5.4.

STAGE 1: DEMAND

Phase 1: Is about determining the current infrastructure investment by firstly gathering status quo information lists of projects from master plans, community needs, sector plans) and then creating a consolidated list of projects (budgeted and unbudgeted) over the next 10 years.

Phase 2a: Phase 2 is about determining future population, housing and land demand. It then introduces functional areas for priority investment which are defined and mapped to indicate the spatial strategy depicted in the MSDF (linked to the MSDF proposals).

Phase 2b: Quantifies the investment requirements per functional area (operational and maintenance per asset class). The phase will further aim to reconcile the future optimal yield scenarios with the infrastructure investments needed to deal with backlogs and to ensure asset care and maintenance of infrastructure systems

STAGE 2: FUNDING ENVELOPE

Phase 3: A reflection on the Municipality's financial health and long-term financial plan. This must include a re-assessment of the Long-Term Financial Plan's credibility to determine an appropriate affordability envelop.

STAGE 3: BUDGET SCENARIO

Phase 4: Geo-locate all projects on a map. Capture the projects against the sub/main place boundaries. Changes to the Standard Chart of Accounts on the Basic Accounting System (BAS) introduced a "region" segment [customisable to "Main Place"]. This will further enhance the ability to analyse budgets and expenditure spatially. Test the projects against the functional area and determine spatial scoring or best fit based on the extent to which they achieve the MSDF objectives.

Phase 5: Applying a prioritisation framework, which uses the spatial scoring from Phase 4 and adds this to a scoring of projects against engineering and financial

criterion to determine a composite score. Following the prioritization and budget fit process, it can then be determined how capital should be best spent in which sector and in what time period.

This CEF is currently in development phases and is by no means a comprehensive CEF as outlined above. Further work is still required to complete Phase 2b, Phase 3, update Phase 4 and gain further input from engineering and financial discplines on all phases. Nonetheless, the following pages describe what has come out of the CEF thus far. Further collaboration will be needed between DEA&DP, PAM, District engineers and Provincial Treasury.



Figure 5.4: Overview of the Adopted CEF Methodology

5.3 STAGE 1: DEMAND

5.3.1 PHASE 1: Engineering, Infrastructure and Risk Informants

The apex priority for PAM as per the MM's foreword in the 20/21 PAM IDP is:

"to protect and improve infrastructure, with specific focus on water resources and roads, and look at collaboration on services to ensure maximum impact"

PAM is battling to maintain its existing infrastructure network, without even considering expansion of this network. PAM must therefore prioritize the current road and water network more cost-effectively and prevent costly outward urban expansion of this network.

Annexure A provides a detailed breakdown of the infrastructure informants for each town as taken from the 2014 Infrastructure and Growth Plan (2014). Annexures B and C also provided a SWOT analysis per ward and a list of Ward Needs and Wants to which budgets may be assigned.

Figures 5.5 to 5.8 on the next page show the infrastructure informant maps taken from the 2014 PAM Infrastructure and Growth Plan (IGP). Thereafter the community based risk assessment from Chapter 4 is shown.

Below is a summary of the main engineering and infrastructure issues.

Bulk water: Significant challenges are the augmentation of the existing water sources of the Central Karoo District Municipality and the upgrading of the bulk water supply infrastructure.

Ground water: Over-abstraction of boreholes has taken place, which together with drought can lead to a critical situation as far as groundwater sources are concerned. Water restrictions must continue to be implemented and borehole abstraction rates dropped based on the recommendations for drought conditions.

Numerous boreholes are not operating optimally due to a lack of maintenance, and therefore it was recommended that the correct O&M measures be implemented.

There is a current lack of adequate groundwater management by Prince Albert Local Municipality and it is advised that the groundwater management recommendations set out in the Groundwater Management and Artificial Recharge Feasibility Study be implemented immediately. PAM must ensure that the surface water allocation, as per the agreement between the municipality and the Kweekvallei Irrigation Board, has been implemented accordingly. PAM must ensure that the groundwater is not pumped to the reservoirs during its allocation to prevent overflowing of reservoirs.

Water Network Infrastructure: The town depends mainly on borehole water with a 10% DWA allocation from the river. The reticulation system is outdated, with 24% water lost due to leakages, particularly in lower income areas (PA Risk Assessment, 2019).

Stormwater: The following storm water problems appear in all towns:

- Poor conditions, slopes and gradients of channels
- Poor drainage in open spaces between households
- Poor maintenance of existing storm water infrastructure which cause blockages of inlets and outlets

Further detail on where these issues take place is found in the IDP as well as the Community Based Disaster Risk Assessment 2019 for PAM. Specific needs include:

- Additional hydraulic capacity in Prince Albert South
- Additional detention ponds for future development
- Storm water flow diversion structures in North End
- Detention storage areas and formalising unlined channels in Klaarstroom
- Building larger channels and diverting storm water flow in Leeu Gamka

Waste:

WDFs in Prince albert Town, Klaarstroom and Leeu Gamka are a concern and licensing issues need to be addressed.

Roads:

Only 15% of the municipal road network is tarred and given the limited budget, it is important to prioritize maintenance and upgrading of roads where necessary and therefore continued implementation of the Central Karoo Mobility Strategy and the Prince Albert Integrated Transport Plan is important.



Figure 5.5: Infrastructure Informants Map for Prince Albert Town (IGP 2014)



Figure 5.6: Infrastructure Informants Map for Leeu Gamka Town (IGP 2014)



Figure 5.7: Infrastructure Informants Map for Klaarstroom Town (IGP 2014)

Figure 5.8: Infrastructure Informants Map for Prince Albert Road (IGP 2014)

2019 COMMUNITY BASED RISK ASSESSMENT FOR PRINCE ALBERT TOWN

Flooding & Storm Water: Ponding in Botterblom and Dahlia Streets. Supercritical flow storm water problems Buitekant, Kronkel Weg & Church Street. Water generally rundowns from the West. WWTW is in a Flood and Fire Zone.

Electricity: Supply disruption during storms with strong winds. Aging infrastructure problematic.

Sewage: Blockage is an annual occurrence in Prince Albert North-End.

Population: Highest growth pressure is North End

Transportation: Services for the elderly and disabled are needed

Education: High cost of traveling to educational facilities outside the boundaries of the municipality makes further education unaffordable/encourages early drop-out in schools.

Fire: Risk comes from the Swartberg Mountain and Pass. Last veld fire almost damaged the reservoir. Only have a limited amount of fire trucks.

Community Based Risk Assessment Profile for Prince Albert Town (source: Prince Albert Disaster Risk Assessment 2019)

2019 COMUNITY BASED RISK ASSESSMENT FOR LEEU GAMKA

Flooding & Storm Water: Main storm water problems are the culverts in Aster Street, Botteblom Street Gnaap and Aalwyn Street, Pepperboom Street, Gousblom Street, Springbok Street, Ambulance station area and Leeu-Gamka Primary.

Wind: Lies mainly in an open-plain exposing most of the town to strong winds local Primary School.

Electricity: Supply disruption during storms with strong winds.

Population: Highest growth pressure is Bitterwater

Transportation: No school learner transport routes

Education: Secondary school wanted children must be transported to Beaufort-West at huge cost to both government and parents

Fire: Risk along Koekemoers and Gamka River (high fuel loads generated by alien invasive species Fluitjiesriet). A lack of Fire Services and landfill site is also considered a fire risk

Road Accidents: Pedestrians accidents at Leeu Gamka along the N1. Residents cross N1 to draw cash at the Shell Garage ATM. Contributing factors include lack of street lighting and a lack of truck stops close.

Community Based Risk Assessment Profile for Leeu Gamka (source: Prince Albert Disaster Risk Assessment 2019)

2019 COMMUNITY BSED RISK ASSESSMENT FOR KLAARSTROOM

Flooding & Storm Water: Main storm water problems are the stormwater flows on Aalwyn Street into properties on other side of street (Bloekom Street). Ponding at cemetery, informal structures and low lying bridge located in flooding areas. Poor maintenance of existing stormwater infrastructure

Wind: Has caused structural damage in the past between Skool and Bloekom Roads.

Electricity: Supply disruption during storms with strong winds.

Fire: Areas that were damaged in the past includes Witrivier (a farm in Klaarstroom)

Road Accidents: Pedestrians and Kudu accidents along the N12.

Community Based Risk Assessment Profile for Leeu Gamka (source: Prince Albert Disaster Risk Assessment 2019)

5.3.2 Economic Informants

To explicitly link the core revenue stream of a municipality to the overall economic performance of a region is best captured through the economic implications (sector performance and employment prospects) of expansion/contraction of GVA and anticipated consumption of municipal services. Three key sectors in the Prince Albert Municipal area are community services (27%); finance (19%); and agriculture (17.2%). The largest contributing sectors to overall employment is agriculture (46.4%), community services (14.4%) and the construction (6.5%) sectors. Figure 5.9 shows the MERO 2019 12 month GVA forecast for PAM.

The overall impact of COVID-19 and the resultant lockdown on the economy of Prince Albert is likely to be quite harsh, with GVA contracting by 14.9 % by the end of the first year (year 1), while the CKDM economy will contract slightly less by 14.3% across the same period. Both economies will recover, but still register a net GVA loss of 5.6 % and 5.2% for respectively Prince Albert and the broader CKDM.

In the first 12 months following the lockdown, overall employment losses in Prince Albert will amount to 7.9 %. Employment is expected to make a significant recovery in year-2 of the post-lockdown period, but will not yet be enough to get to return to the pre-lockdown employment level.

In terms of sectoral impact, the sectors where GVA will be hardest hit by the pandemic over the initial 12-month period is tourism (84.1 %), construction (40.7 %) and mining (20.3 %). In terms of employment, most job losses will come from the tourism (60.0 %), construction (25.9 %) and informal (12.7 %) sectors.

In terms of municipal revenue impact, the knock-on effect of the lockdown measures and general subdued restrictions placed on the regional economy will place a massive strain on municipal finances. As disposable incomes decline across a specific region, the knock-on effect will be absorbed by lower than normal demand for basic services, an increase in the number of households that need to be subsidized with free basic services, and an increase in households that are unable to pay for property rates and services consumed.

Given the shutdown of industrial activity, especially in the sectors of manufacturing, construction and trade, the overall consumption of this key line item (electricity and to a lesser extent water) is sure to constrain municipal finances in the short-term with annual projections severely impacted in this regard.

		Post 1-2	Post 3-6	Post 7-12		Net loss as	Net loss as	Post 13 - 24	Net loss
	Total GVA in	months GVA	months GVA	months GVA	Net GVA	a % of sub	a % of total	months GVA	as a % of
	2019	loss	loss	loss	loss	sector	GVA	loss	GVA
Tourism	34 395	4 159	11 007	13 758	28 924	84.1%	4.3%	17 198	50.0%
Agriculture	114 927	4 331	3 831	850	9 012	7.8%	1.4%	2	0.0%
Mining	34	3	3	1	7	20.3%	0.0%	2	5.8%
Manufacturing	15 360	898	989	449	2 336	15.2%	0.4%	1 058	6.9%
Electricity	5 769	78	131	58	267	4.6%	0.0%	288	5.0%
Construction	77 674	5 826	10 323	15 472	31 620	40.7%	4.7%	7 767	10.0%
Trade	85 445	4 043	4 076	4 481	12 599	14.7%	1.9%	5 526	6.5%
Transport (incl telecomms)	26 755	1 545	788	430	2 763	10.3%	0.4%	-209	-0.8%
Finance (finance, insurance, real estate and other services)	126 725	2 129	2 112	2 423	6 664	5.3%	1.0%	5 182	4.1%
Community services (Public admin, defence, health & social work, other community services)	180 016	1 253	2 644	1 628	5 525	3.1%	0.8%	477	0.3%
	667 101	24 265	35 903	39 550	99 718			37 291	
		3.64%	5.38%	5.93%	14.95%			5.59%	

Figure 5.9: 12-month GVA Forecast for PAM (MERO, 2019)

		Post I-2	Post 3-6			Net		Post 13 - 24	
		months	months	Post 7-12	Net	employment	Net loss as a %	months	
	Total employed	Employment	Employment	months	Employment	loss % of	of total	Employment	Net loss as a %
	in 2019	loss	loss	Employment	Losses	subsector	Employment	loss	of Employment
Informal	555	29	31	- 11	71	12.7%	1.5%	4	0.8%
Tourism	212	17	49	61	127	60.0%	2.7%	51	24.0%
Agriculture	2 193	4	18	5	27	1.2%	0.6%	0	0.0%
Mining	1	0	0	0	0	4.4%	0.0%	0	2.1%
Manufacturing	86	1	2	1	4	4.2%	0.1%	2	2.3%
Electricity	30	0	0	0	0	0.7%	0.0%	1	1.8%
Construction	307	18	23	39	79	25.9%	1.7%	15	4.8%
Trade	302	3	7	9	18	6.1%	0.4%	9	2.9%
Transport (incl telecomms)	96	1	1	2	4	4.1%	0.1%	1	1.2%
Finance (finance, insurance, real estate and other services)	269	1	2	3	6	2.3%	0.1%	5	1.9%
Community services (Public admin, defence, health & social work, other community services)	680	1	14	21	37	5.4%	0.8%	4	0.6%
Total	4 7 3 1	74	147	153	373			92	
		1.56%	3.10%	3.23%	7.89%	-7.9%		1.93%	

Figure 5.10: 24-month Employment Forecast for PAM (MERO, 2019)

5.3.3 Consolidated List of Project Needs and Wants

The purpose of phase 1 is to document all infrastructure investment projects (new, renewal and maintenance) for the 10-year period 2020 - 2030 into a single consolidated table. Once input has been provided on the whether the correct information is being used or not, this will be included as an annexure and excel table in this CEF at a later stage. The information is derived from:

- 1. The PAM IDP 2020/21
- 2. Infrastructure Master Plans
- 3. Sector plans
- 4. MSCOA and OPMI Reports
- 5. The PAM 5 year Capital Plan

Table 5.1 across shows the status of both Master and Sector Plans in PAM. Many of the plans, shown in orange, are outdated and require updating to enhance the credibility of this CEF. The master plans in most urgent need of updating are:

- 2008 The Water Services Development Plan;
- 2013 Storm Water Master Plan

The CEF recognises that PAM has compiled a 5-year consolidated capital plan to assist in prioritising projects (See Annexure A). The total cost **is R 123.1 mil** over the 5 year period.

The aim of this CEF is to extend this to a 10 year time horizon and provide assistance on how best to prioritize projects in relation to the budget of the municipality. The ultimate goal is to put the municipality in a better position to do 3 - 10 year budgeting and to ensure that the most critical and beneficial projects are addressed.

It is worth disclaiming that councillors will likely change approved Capital Plans on an annual basis, pending the needs of their ward. However, given the limited budget that is likely to arise in the future, this CEF aims to assist this process in future.

Table 5.1: PAM and CKDM related Sector Plan Status	(Source PAM 19/20 IDP
--	-----------------------

Sector Plan		Status
1	CKDM Bulk Infrastructure Master Plan 2010	Needs updating
2	CKDM Bulk Integrated Transport Plan	Under Review
3	Water Master Plan (Draft) 2010	Needs updating
4	Sanitation Master Plan (Draft) 2010	Needs updating
5	Water Service Development Plan 2008	Urgently needs updating
6	Water Conservation and water demand management strategy	Needs updating
7	Pavement Management System 2010	Needs updating
8	Storm Water Master Plan Aurecon 2013	Need R 1.5m to be updated
9	Roads Master Plan 2009	Needs updating
10	Local Integrated Transport Plan	-
11	Integrated Waste Management Plan 2015	To be tabled with IDP
12	Electricity Master Plan 2016	-
13	Integrated Human Settlement Plan	Drafted
14	Integrated Infrastructure Maintenance Plan	To be developed
15	Asset management Plan	Adopted
16	Communication Strategy	Adopted
17	Performance Management Policy Framework	Adopted
18	Risk Management Strategy	Adopted
19	Long Term Financial Plan 2017- 2027	Drafted to be tabled with IDP
21	Local Economic Development Strategy	Drafted to be tabled with IDP
21	Air Quality Master Plan	To be tabled with IDP
22	Disaster Management Plan 2019	To be tabled with IDP
23	Law enforcement strategy	To be developed
24	Employment Equity Plan	Adopted
25	Skills Development Plan	Adopted
26	Integrated HIV/Aids Plan	To be developed
27	Climate Change Response Strategy	In process of development with CKDM

Table 5.2 shows the list of **Provincial Infrastructure Projects**, for the 2020/21 to 2022/23 MTEF. The total amount is roughly **R 34.8 mil** divided over three years is **R 11.6 mil** per year.

Table 5.3 shows the Funded **MIG & CRR Projects** for the MTREF totalling **R 28.4 mil**. There is **R 12.8 mil** in 20/21, **R 9 mil** in 21/22 and **R 6.6 mil** in the 22/23.

Table 5.4 shows the unfunded list of projects from 19/20 onward which total **R 17.4m** (19/20), **R 13m** (20/21) and **R 6.2m** (21/22). It is expected that this unfunded is carried over in the5 year capital plan.

Table 5.5 on the following page provides a list of sanitation and water infrastructure projects taken from the Prince Albert 2014 Infrastructure and Growth Plan. These are divided as short, medium and long term, although no exact time periods were given.

Table 5.6 thereafter shows the list of all unfunded projects, which stands at a current total of R 587 mil required.

Table 5.7 shows the list of projects taken from all sector plans, including the 5 year Capital Plan.

Table 5.2: Provincial Infrastructure Investments for 2020/21 to 2022/23 MTEF (Source: PAM Draf
20/21 IDP)

Department	Project Programme Name	Infrastructure type	Nature of Investment	2020/21 MTEF	2021/22 MTEF	2022/23 MTEF	TOTAL 3 YEARS
Health	CH820034 : Prince Albert - Prince Albert Ambulance Station - HT - Upgrade and Additions incl wash bay	Health Technology	Non Infrastructure	300	0	0	300
Health	CI820034 : Prince Albert - Prince Albert Ambulance Station - Upgrade and Additions incl wash bay	Ambulance/EMS station	Upgrades and additions	737	169	0	906
Transport and Public Works	C1104 Reseal of Meirings Poort	Resealing	Refurbishment and rehabilitation	25000	0	0	25000
Transport and Public Works	C1037.1 Prince Albert Road reseal	Resealing	Refurbishment and rehabilitation	4000	4600	0	8600
TOTAL				30037	4769	0	34806

Table 5.3: Funded MIG & CRR Projects for 2020/21 to 2022/23 MTEF (Source: PAM Draft 20/21 IDP)

WC052 Prince Albert - Supporting Ta	ble SA36 Detailed capital budget			
R thousand		2020/21 Medium 1	erm Revenue & Expendit	ure Framework
Function	Project Description	Budget Year 2020/21	Budget Year +1 2021/22	Budget Year +2 2022/23
Parent municipality:				
List all capital projects grouped by Function				
Sports Grounds and Stadiums	Prince Albert Upgrade Sportfields	-	2 242	-
Sports Grounds and Stadiums	L/G Upgrade Sportfields	425.958	-	-
Sewerage	Klaarstroom Upgrade WWTW (MIG)	-	-	3 544
Electricity	Upgrade LV Reticulation/Opgradeer LS Reikulasie	-	1 739	-
Water Distribution	Refurbish iron removal plant	1 130	-	-
Corporate Services	Regional socia economic project / New municipal offices	3 913	870	-
Finance	PMU - New Laptops	17	20	27
Finance	CRR: IT Back - Up Sisteem in Admin Gebou	8	-	-
Roads	MIG - L/G Nuwe Sypaadjies	1 317	-	-
Roads	MIG - P/A Nuwe Sypaadjies	968	-	-
Roads	MIG - K/S Access road	1 092	991	1 266
Roads	MIG - L/G Access road	1 090	1 529	1 763
Water Distribution	MIG - L/G Storm Water	981	1 665	-
Water Distribution	MIG - P/A Upgrade Storm Water	356	-	-
Water Distribution	DLG: Manage Aquifer Recharge (Drought Relief)	522	-	-
Water Distribution	DLG: Supply and Install Stand-by Generators (Drought Relief)	450	-	-
Water Distribution	CRR: Refurbish Iron removal plant (Co-funding)	159	-	-
Water Distribution	CRR: Manage Aquifer Recharge (Co-funding)	127	-	-
Water Distribution	CRR: Supply and Install Stand-by Generators (Co-funding)	220	-	-
Parent Capital expenditure		12 778	9 056	6 600

Table 5.4: Funded MIG & CRR Projects for 2020/21 to 2022/23 MTEF (Source: PAM Draft 20/21 IDP)

	UNFUNDED LIST	FOF PROJECTS FOR T	HE MTREF	
PROJECT DESCRIPTION	2019/20	2020/21	2021/22	SOURCE OF FUNDING
WATER RESTRICTION DEVICES	500 000.00	500 000.00	500 000.00	DLG/MIG
LOWER BOREHOLE PUMPS	500 000.00			DLG
ARTIFICIAL RECHARGE OF AQUAFER	700 000.00	1 300 000.00	-	DLG/CRR/WSIG
UPGRADE OF NORTH END TRANSFORMER INFRASTRUCTURE	2 000 000.00	-	-	MUNICIPALITY/DE
UPGRADE GROUND WATER MANAGEMENT PLAN	200 000.00	200 000.00	-	DLG/WSIG
KLAARSTROOM RESERVOIR			700 000.00	MIG
UPGRADE SEWERAGE RETICULATION NETWORK PA SOUTH END	4 000 000.00	4 000 000.00	2 000 000.00	WSIG/CRR
REHABILITATION OF LANDFILL SITE	3 000 000.00	3 000 000.00	3 000 000.00	MIG/DLG/MISA
REVIEW AND UPDATE WATER MASTER PLANS- WATER AD SEWAGE	500 000.00	-	-	
BOOSTER PUMP STATION PA	-	2 500 000.00	-	MIG/CRR
BULK SANITATION LEEU- GAMKA SPOORNET AREAS	4 500 000.00	-	-	MIG/CRR
PRELIMINARY INVESTIGATION FOR RAW WATER STORAGE DAM	1 500 000.00	1 500 000.00		WSIG/MISA
SUB TOTAL	17 400 000.00	13 000 000.00	6 200 000.00	

TOWN	TIME FRAME	PROPOSED SANITATION PROJECT	PROPOSED WATER INFRATRUCTURE PROJECT
PRINCE ALBERT	Short term	 New inlet works and anaerobic tank. Basic Repairs and maintenance: Inlet works, screen and maturation ponds. Convert aerobic ponds to install aerators. Aeration of the aerobic ponds 	 Do yield study on source. Do active recharge of ground water system during winter months. In-depth investigation on water rights from all users. Purchase of Water Rights from Irrigators Water demand management is critical in terms of using the limited water resources more efficiently. Borehole telemetry system must be fixed to assist in proper WDM.
	Medium term	 Upgrade the aerobic dams with more aerators Possible relocation solid waste site to eliminate waste blown into WWTW or ensure timely covering of waste. 	 Increase Raw Water Storage Capacity by looking at alternative storage dams. Find Additional Sources of Surface Water. All components of the WTW must be fixed so that plant can operate at its full design capacity.
	Long Term	 Upgrade plant capacity to 1.5 Ml/d. Activated sludge technology in parallel with aerobic dams. 	10. Build additional off canal dam near source
KLAARSTROOM	Short term	 Construct hydraulic grit channels at the foot of the new inlet works. Construct new chlorine contact tank. Apply for approval to irrigate the effluent up to a plant flow of 500 m³/d Construct irrigation pump station, rising main and effluent storage reservoir (200 kl) 	 Utilize all the existing boreholes effectively according to pre-determined pumping schedule
	Medium term	10. Aeration of maturation ponds.	12. Construct new reservoir to replace existing.
	Long Term	11. Additional oxidation ponds	13. Upgrade WTW and investigate re-use of effluent.
LEEU GAMKA (BITTERWATER)	Short term	 Construct hydraulic grit channels at the foot of the new inlet works. Construct a 600 m³ anaerobic tank ahead of the Primary Ponds. Rectify inlet pipework at dams to discharge at the bottom of ponds Construct new flow splitter boxes, 6.5 m³ Chlorine contact tank and 3 l/s recycle pump station. Repair leak at final oxidation pond. 	 Repair or provide new bulk water meters at the abstraction points, and also at outlets from reservoirs. Safeguarding of all the boreholes to prevent vandalism and contamination. Replace AC pipes from boreholes to WTW with uPVC pipes installed underground.
	Medium term	 Apply for approval to irrigate the effluent up to a plant flow of 500 m³/d 	 Investigate and implement borehole pumping schedules. Metering of all consumers as well as bulk metering to do proper WDM. Transnet transferred properties. Determine yield of Transnet boreholes. Investigate the condition of the elevated water storage tank. Investigate the condition of the internal and bulk supply lines.
	Long Term	18. Aerations of maturation ponds.	22. Investigate re-use of effluent for potable water as well as irrigation of sports fields.
PRINCE ALBERT	Short term	 Urgent repairs needed at overfull septic tank. Construct new soak-away system. Eradication of buckets. 	 Determine yield of borehole. Investigate the condition of the elevated water storage tank. Investigate the condition of the internal and bulk supply lines.
ROAD	Medium term	 Construct new WWTW or alternatively investigate the use of package plant. Investigate the condition of the internal and bulk sewer lines. 	26. Metering of all consumers as well as bulk metering to do proper WDM.

 Table 5.5: List of Sanitation and Water Infrastructure Project Needs taken from the Prince Albert 2014 Infrastructure and Growth Plan.

Table 5.6: All unfunded List of Projects (Source: PAM Draft 19/20 IDP)

Project Name	Ward	Project Description	Estimate Budget
riojectivanie	Waru	Project Description	
Bulk Infrastructu	re		
Bulk sanitation	Prince Albert Road	Upgrade of WWTW	R 2 100 000
Water Provision	Prince Albert Road	Boreholes and Mains, including pump station	R 1 570 000
Water Provision	Prince Albert Road	Reservoir, including upgrade of WTW	R 980 000
Bulk sanitation	Prince Albert	Upgrade of WWTW phase 3, air raisin, including intake	R 2 500 000
Water Provision	Prince Albert	Upgrade of WTW, including and larger soda Ash plant, and Filtering, including borehole	R 6 000 000
Bulk water purification	Klaarstroom	Upgrade of WTW	R 2 500 000
Bulk Water	All wards	Telemetric system for WTW & WWTW	R 3 200 000
Sportfield	Prince Albert	Completion of effluent waste water pipeline to Sport fields	
Upgrade of andfill sites	Prince Albert	Material recover system	R4 000 000
Water Provision	Leeu-Gamka	Upgrade mains and water supply lines, upgrading of reticulation of asbestos pipeline	R 3 500 000
Bulk sanitation	Leeu-Gamka	Bulk sanitation connection to previous Spoornet areas	R 4 000 000
Water Provision	Leeu-Gamka	Bulk water connection, including mains and supply line to previous Spoornet area + Welgemoed + Newton Park	R 6 000 000
Bulk sanitation	Leeu-Gamka	Newton Park eradication of buckets with septic tanks	R 3 000 000
Bulk sanitation	Prince Albert	Bulk Sanitation effluent re-use, reservoir pump station and pipeline for irrigation + upgrade of inflow to WWTW, and reticulation pump stations	R 8 000 000
Bulk Sanitation	Leeu-Gamka	Bulk Sanitation, WWTW, chlorination, septic tank, and pump station for irrigation of effluent	R 3 000 000
Storm water Upgrade	Prince Albert & Leeu-Gamka	Storm water upgrade, including drainage and curbing, Adderley Street, North End and Bitterwater	R 5 000 000
Bulk Sanitation	Prince Albert	Internal bulk sanitation, including upgrading of septic tank system to waterborne systems	R 3 340 000
Water provision	Prince Albert	Storage dam	R 15 000 000
Water provision	Prince Albert	Boreholes and Mains + development of borehole field + reservoir	R 10 000 000
Street Lighting	Leeu-Gamka	Community Lighting	R 2 000 000
Public Transport	All wards	Upgrade of municipal roads	R 5 000 000
Public Transport	All Wards	Pavements and Terminus	R 9 000 000
Non-motorized transport projects	All Wards	Bicycle friendly roads	R 600 000
Electricity provision	All Wards	Kiosk and upgrade of Transformers	R 3 200 000
Electronic water metering	All Wards	Installation of prepaid water meters	R 4 000 000

Renewable	All Wards	Replacement of conventional lightning with renewable street lightning	R 25 000 000
Electricity metering system	All Wards	Upgrade of electricity meters + Back office	R 2 000 000
Prince Albert Integrated Environmental Precinct	Prince Albert	Pedestrian walkway and the upgrade of reserve from EE-Centre to town along the furrow. Alongside the pedestrian spline, trees and flowers endemic to the area will be planted. Construction of a 100-seat amphitheatre for community events as well as environmental exhibitions and open-air education and awareness.	R 17 000 000
Sport and recreation	Prince Albert	Sport precinct	R102 000 000
Economic Development	Klaarstroom	Integrated LED & Tourism Plan/ Strategy & Destination Marketing, SMME Tourism Development	R 1 300 000
Economic Development	Prince Albert	Integrated LED & Tourism Plan/ Strategy & Destination Marketing, SMME Tourism Development	R 3 100 000
Working for Water	All Wards	Alien clearing populars, prosopis, satansbos, cactuses	R 1 000 000
Human Settlements Development, 2121 units (backlog)	All Wards	Construction of new houses	R 104 100 000
Early Childhood Development	Leeu-Gamka	Facilitate the Construction of an ECD Centre that's safe & accessibly	R 2 000 000
Development Services	Prince Albert	Multi-purpose centre. ECD, offices for emerging farmers and SMME's	R 12 000 000
Landfill Sites	All Wards	Rehabilitation & Registration of Landfill Sites	R 9 000 000
SMME Development	All Wards	Development of SMME trading Hubs	R 5 000 000
Sector Plan's Development	All Wards	Professional Fees for Socio-economic, Township Plans, Transport Plan, Housing Plan and Poverty Strategy, WSDP, Water safety plan, sewerage plan	R 8 000 000
Neighborhood & Urban Design	All Wards	Settlements Integration	R 5 000 000
Special Projects			
Swartberg Pass Project Phase 2	Prince Albert	proposal serves as motivation for the Swartberg Pass Project, a community-based job creation initiative under the auspices of the Central Karoo's Strategic Framework for Economic Regeneration.	R 7,000,000
Pont over Gamka Dam	Prince Albert	The project aims to develop eco-cultural adventure tourism in the rural areas & link up with other tourism route 66	R 5,000,000
Gamkapoort	Prince Albert	Develop a resting or eco park, with overnight facilities	R 4 500 000

Table 5.6: All unfunded List of Projects continued...

2 nd Phase Thusong Service Centre	Prince Albert	The project aims to bring government services closer to the people.	R 5,100,000
Municipal Office	Prince Albert, Leeu Gamka and Klaarstroom	Develop new offices, at the Thusong centre, in order to have all government services at one point. Equip and extend satellite offices	R 7 800 000
Community hall	Prince Albert	Establish a centre for community activity	R 3 700 000
Gap Housing & Low Cost Housing	PAM area; Leeu-Gamka Prince Albert Klaarstroom	The project aims to reduce the housing backlog and development of shacks.	R 26,900,000
Vehicle Testing Centre	Prince Albert	To bring services closer to the community & more accessible.	R 2,300,000
10. Alternative Energy (Solar)	Prince Albert	To provide cost effective electricity. Job creation, Viability in terms of energy source.	R 25,000,000
Business Hives	PAM area; Leeu-Gamka Prince Albert Klaarstroom	The project aims to development an environment or space for upcoming entrepreneurs, create employment opportunities & contribute to the economy.	R 8,000,000
Community Tourism Plan	Prince Albert Area	Provide employment opportunities for HDI's guidelines for the development for community tourism opportunities	R 1 000 000
Treintjies river Green Resort	Prince Albert	Provide a Tourism product, recreational facilities, including renovation and development of new structures, to enhance wellness of community and an alternative to nature tourism. A hub for Recreational tourism, including hiking, mountain biking, camping, etc	R 53 000 000
Fencing for commange	All wards	Treintjiesrivier, Leeu-Gamka & Klaarstroom	R 5 000 000
Tourism Development Centres	Prince Albert, Klaarstroom Leeu Gamka	Renovation of Municipal Buildings, equipping of Centres, Training of Personnel, operation	R 1 200 000
Community Learning Centre	Prince Albert	The development of Centre at the Thusong centre, where inhabitants can be trained w.r.t. life skills, basic skills, ABET, also online wit FET colleges and Universities, for formal training. Including negotiations with Higher Education and the equipment to handle online services	R 5 200 000
The upgrade of the furrow pipeline	Leeu Gamka	To minimize the loss in the furrow, currently estimated to be 50%, and thus ensuring additional water for domestic use. Creating opportunity for effective farming through ensured water supply	R 36 000 000
Filling station, with facilities	Klaarstroom	Preparing the environment and getting all the relevant permissions, drafting the documentation	R 1 700 000
Agri Tourism Hub	Prince Albert	Draft model and facilitate establishment thereof	R 1 500 000
Upgrading of the Airfield	Prince Albert	In order to ensure that the produce for export are secured, including storage facilities and cooling facilities	R 25 000 000
Weigh bridge on N1 and N12	Prince Albert Road Klaarstroom	To ensure effective and efficient law enforcement	R 15 000 000
Community Food gardens	All Wards	To create food gardens including security and markets	R 3 000 000
Artificial recharge	All wards	To investigate and implement artificial recharge of all our boreholes.	R 15 000 000
Total cost			R 587 960 000

 Table 5.7: Projects Derived from Sector Plans

Ар	
	pointed BKS(Pty) Ltd (BKS) for Phase 2 for the CKDM. Status unknown.
Ain	n is to identify and quantify backlogs in infrastructure the needs and
del	livery challenges. The update must link to the proposals for investment
alig	gnment in this MSDF.
Pric	prity bulk water infrastructure projects:
-	New 500 kl and 2 500 kl reservoirs &pipeline:
-	Prince Albert New 3.25 MI/day WTW Prince Albert
-	WDMC project Leeu Gamka
-	Development of three boreholes in Leeu Gamka.
-	Development of two boreholes in Klaarstroom Priority bulk wastewater
	infrastructure projects
-	New standby pump unit for sewer outfall pump station Leeu-Gamka
-	Uparade/replace main sewer pump station and rising main
	Klagistroom
_	New gravity outfall sewer Prince Albert Road
_	New 2.1 kl/day package plant WWTW Prince Albert Poad

CKDM Integrated Transport Plan (LITP)

The LITP is the responsibility of the CKDM. It was Finalised in 2016. Projects identified include:

- Extension of non-motorised transport network (underway)
- Public transport infrastructure development in Prince Albert.
- Street pavements in Prince Albert (underway)
- Roads for the proposed Gap housing development
- Maintenance of remainder of TR33/5 between Klaarstroom and Beaufort-West, km 0-55 (N12)
- Paving of Primary access roads in Prince Albert and Leeu-Gamka
- Upgrade of low-water bridge North End & Rondomskrik (Completed)

Mobility Strategy for the Central Karoo District Municipality

This is the responsibility of the CKDM. While many services have been proposed, it is clear through the 2019 Community Risk Assessment and the IDP Ward Needs that more work can be done to include local pedestrian surveys to produce data

Integrated Waste Management Plan (IWMP) and Info from IDP

The main issue is licensing and adhering to standards.

The total cost of required infrastructure to enable the Prince Albert WDF to comply with conditions of the permit/waste management license will be approximately R3 996 656.17.

The total cost of required infrastructure to enable the Leeu Gamka WDF to comply with conditions of their permit/waste management licence will be approximately R3 564 900.00.

The total cost of required infrastructure to enable the Klaarstroom WDF to comply with conditions of the permit/waste management licence will be approximately R2 226 497.92.

The composting facility near Prince Albert would cost an estimated R3 750 000.

The cost to construct such a Public Drop-Off in Leeu Gamka is estimated at R2 513 000 and Klaarstroom's cost will be the same.

Electrical Master Plan 2016

Notified Maximum Demand (NMD) to ESKOM is based on a projected population growth of 2%, which is larger than the high growth scenario (1.76%) projected in this MSDF. The NMD 2 652 x 2.5 kVA (ADMD) = 6 630 kVA. The municipality also needs to still secure electricity rate from Klaarstroom and Leeu Gamka who purchase directly from Eskom.

Numerous transformers need refurbishment with regards to oil leakage, transformer heating up, etc. In summary, the following needs to be implemented:

- Replace/Installation of a new transformer
- Refurbishment of mini-sun, pole mounted and ground transformers Installation of fuses

Local Economic Development Plan

Projects:

- 1. Swartberg Circle
- 2. Tourism Sector Support Project
- 3. Development of a Tourism Strategy
- 4. Neighbourhood Revitalisation and Urban Design Project
- 5. Branding and Marketing Project
- 6. Youth Entrepreneurship Mentoring Scheme

- 7. N12 Treasure Route.
- 8. Package Prince Albert Town and Klaarstroom as part of the garden route region.

Central Karoo District Rural Development Plan, 2015 (CRDP) Projects:

- 1. Upgrading of the existing Abattoir, existing dairy, leather tannery (Leeu Gamka) food gardens in Klaarstroom and North End, Prince Albert;
- 2. Extension of the Weavery;
- 3. Development of a Fruit Drying Facility with communal plantations;
- 4. Pomegranate project in Leeu-Gamka;
- 5. Vegetable Enhancing Facilities in Prince Albert;
- 6. Development of a Seeding Production Facility in Prince Albert;
- 7. Expansion of the existing Onion Seed and Olive Production Facility in Prince Albert;
- 8. Development of a new Dry Fruit Facility or Project in Leeu-Gamka; and
- 9. Development of an Agri-Processing Facility in Prince Albert.

Disaster Risk Management Plan 2019

Newly proposed (not in other sector plans already):

- 1. Awareness and management strategy on stray animals:
- 2. Develop an Animal Disease Disaster Preparedness Plan:
- 3. Develop a Smallscale Farming Monitoring System
- 4. Strategy aimed at combating women abuse
- 5. Multi-disciplinary and multi-sectoral strategy to address the problem of substance abuse in the area
- 6. Develop a strategy and plan aimed at inspection, upgrading, improving services, monitoring and evalution of community clinics in surrounding outlying/rural areas Structured, professional and sustainable youth development programmes should be implemented
- 7. Youth access to contraceptive and reproductive health care services
- 8. Alien invasive clearance and management strategy
- 9. Early warning strategies to wildland fires be revised and updated
- 10. Standardize fire hydrant couplings within the Municipality
- 11. Establish a satellite fire station in Leeu-Gamka
- 12. Develop a drought management plan for commonages
- 13. Develop a Prince Albert Seismic Preparedness Plan
- 14. Severe weather disaster risk reduction public awareness and preparedness campaign.
- 15. Develop a water resources zoning plan

- 16. An integrated programme to educate the general public in antilittering and responsible domestic waste management and disposal.
- 17. Improve Inadequate street lighting in rural/informal areas
- 18. Establish a secondary school in Leeu-Gamka
- 19. Implement subsidized transport scheme for school children.
- 20. Create a database of all unemployed and employed skills in the area. Approach MQA SETA to assist with the development of such as programme.
- 21. Develop a structured programme based on the needs identified in the remote areas to recruit, train and equip volunteers to assist with area based fire prevention and response teams. Hold regular fire equipment inspections.
- 22. Host fire drills

CRDP in Leeu Gamka and DRDLR NARYSEC programme

- 1. Newly proposed (not in other sector plans already):
- 2. Upgrading of the current school to Grade 12
- 3. Paving of all gravel roads
- 4. Lights on the N1
- 5. Paving of all gravel roads
- 6. Lights on the N1
- 7. Crèche relocation to Bitterwater & Development of new Crèche at Prince Albert Road
- 8. Cemetery at Prince Albert
- 9. Road
- 10. Swimming Pool
- 11. Youth Centre
- 12. Animal Control/ Veterinary Services
- 13. Development of vacant business plots
- 14. Youth training centre
- 15. Recycling project
- 16. Financial assistance for Nursery project
- 17. Ablution facilities at sport facilities
- 18. Weigh Bridge

SDF Projects

- Prince Albert Town heritage overlay zone
- Revision of the ITP for urban design input into the NMT network i.e. cycle lanes, Church Street beautification etc.
- Local Area/precinct plans for all local investment nodes (3 in Prince Albert Town and 3 in Leeu Gamka)
- Establishment of Community Safety Kiosks and lighting at nodes;

- Prince Albert Town Integration Precinct consisting of:
 - 1. Extend Thusong Centre to house the council and finance offices
 - 2. Sport and recreational sub-area (Funding through DCAS)
 - 3. Enhanced public spaces (Amphitheatre and safer streetscape improvements;
 - 4. New Development Areas (GAP and BNG Sites A, B and C)
 - 5. Extension of Mecuur Street to Hospital.
 - 6. New post office, ATMS, zebra crossing to SPAR
- Continued tree planting, signage and landscaping at all town entrances
- Proposed street lighting for safer pathways;
- Investment programme to evaluate carrying capacity of the Dorps river
- Development of Agri Parks hub and plantation in Prince Albert alongside the air strip
- Extension of the Leeu Gamka High School (Potentially double up with AET, Youth Centre and creche);
- Establishment of ablution facilities at cemeteries;
- Shelter for patients awaiting EMS at Leeu Gamka

PAM 5 Year Capital plan

Prioritized and funded in the 5 year 2020-2024 period.

- Upgrade Council chambers
- Prince Albert Sports Field Upgrade: Co Funding
- Klaarstroom Upgrade WWTW: Co Funding
- Office Equipment
- New Front End Loader and Tipper Truck
- Office Equipment
- New Tractor- Leeu Gamka
- New Pumps
- Sewer Unblocking Trailer
- New Tractor- Klaarstroom
- New 1 Tonner Bakkie (Technical Services)
- Desktop Computers x 2
- Office Furniture & Equipment
- Chlorine Gas Dosage Pumps
- Gereedskap en Toerusting vir Tegnies
- IT Equipment
- Access Control Furniture and Equipment
- Signage, Banners & Billboards

- Office Equipment
- Chainsaws
- Brushcutters
- Irrigation equipment for parks
- Office Equipment
- Op Die Berg Public Toilets
- Co-Funding Stormwater Upgrade Prince Albert
- Tables for Community Halls
- Laptop x 2
- Portable PA System (All in One)
- Water Meter Replacement-Smart Meters
- Upgrade of LV Network
- Prince Albert Sports Field Upgrade
- Klaarstroom Upgrade WWTW
- Leeu Gamka: Sidewalks
- Leeu Gamka: Sportfield Fencing
- Prince Albert: Sports Field Upgrade
- Klaarstroom Access Roads
- Leeu Gamka Access Roads
- Insurance Replacements
- Prince Albert: Kerb and Sidewalks
- Leeu Gamka Stormwater
- Material Recovery Facility
- Prince Albert Road: New Storage Tank and WTW
- Klaarstroom: Upgrade Waste Disposal Facility
- Prince Albert Stormwater Upgrade
- Truck 1.3 ton
- Expanding of Cemetery
- PMU
- Klaarstroom Upgrade of WTW and liftpump station
- Leeu Gamka Bulk Sanitation Package Plant
- Containers x 2
- Capex Test Centre
- Capex: Fire Arms
- Prince Albert Road: Borehole and Mains
- Leeu Gamka: Upgrade Mains and supply lines
- Prince Albert: Boreholes
- Prince Albert South End Sewer Upgrade
- Fencing
- Johns Steyn Library Upgrade
- Refurbishment Iron Removal Plant
- Tools & Equipment
- Groundwater Management Interventions

- Klaarstroom Upgrade WWTW
- Economic Hub
- Leeu Gamka: Borehole Equipp
- Prince Albert: New Storage Dam
- New regional cemetery
- Kliprug sportfield change rooms
- Sportsground development
- Resurface netball courts
- Landscaping of parks
- Chalet Furniture
- Camera equipment

There are several questions that must be asked going forward:

1. Are we capturing all the right projects in the master plans?

The master plans are outdated, and the needs will most likely have changed. Some master Plans do not list projects and are still up for interpretation by engineers. Further work is needed to renew the master plans which need to draw upon this CEF.

2. How do these projects relate to each other?

Projects are labelled differently i.e. a master plan may give a full breakdown, but the individual projects are grouped and tabled as one item in the budget. Some are capital based and some a are programme based.

Some projects could be better grouped as part a broader precinct development approach such as the Prince Albert Integration Precinct.

Municipal infrastructure capital projects often comprise of incremental upgrades to water supply, sanitation or electrical networks, where incremental revenue cannot be ringfenced and break-even may only be reached somewhere in future. Such projects will not be bankable on their own but are acceptable underlying assets to fund on balance sheet.

3. What will be invested in infrastructure over short term?

The short term can be considered the 5-year capital plan while the long term could be the not yet budgeted for on the capital plan. The question is also what should be budgeted for on the capital plan that is not currently budgeted for? The capital plan will need to be continually revised in relation to the needs above,

4. Which projects should be prioritized first and how will capital be spent, in which sector and over what time period?

Typically, the only bankable municipal projects will be the more substantial investments in solid waste management, water or wastewater treatment plants, or perhaps electricity generation where costs and revenue (unitary charges) could be ring fenced, and project finance considered via a PPP arrangement.

Project finance can however occur at a municipality that are unable to take on more debt, but where a bankable project such as a bio-gas from waste plant, or similar project proves viable.

5.4 PHASE 2A: FUTURE DEMAND PROFILING AND SPATIAL PRIORITISATION

This section has 2 components. The first component re-introduces the population, housing and land demand forecasts from Chapter 4 of this MSDF. The second component introduces the functional areas for different investment priority.

5.4.1 Population, Housing and Land Demand 2020-2030

As described in Chapter 4, the Sub Place boundaries will be used as a defendable means of determining the 10-year population, housing and land demand.

The SP's are mapped per town on the following page in Figures 5.X - 5.X. They are labelled with 2020 population estimates. Below the map a table is provided showing 10-year (2020-2030) population and household projections for what is considered in this MSDF as a low (0.67%), medium (1.1%) and high (1.73%) growth scenarios.

The third last column in below each map shows the 2020 housing waiting list per town. This is considered the 'backlog' which is added to the 'natural growth' to determine the total housing demand and future potential land requirements. The housing waiting list for PAM, at July 2020, is 1201 applicants :

•	Prince Albert Town:	718
•	Leeu Gamka Town:	335
•	Klaarstroom Town:	144
•	Prince Albert Road	4

Prince Albert Road

It should be recognized that the population, household and land projections are based on several assumptions, such as:

- the population growth rate scenarios continuing in a linear manner
- the 2020 housing waiting list remaining its current size and not been cleaned up to remove or add applicants,
- that all households average 3.8 people per household and
- that the average gross dwelling unit density will be 25 dwelling units per hectare in all areas.

5.4.1.1 Prince Albert Town

By 2030 the total population of Prince Albert Town is projected to be between

- 8285 (low growth),
- 8649 (medium growth) and
- 9212 people (high growth).

By 2030, Prince Albert main town (Purple), with a 2020 population of 1153 people will naturally grow by between

- 80 (low growth), ٠
- 134 (medium growth) and •
- 218 (high growth) additional people ٠

By 2030, North End (Green), with a 2020 population of 6595 people, will naturally grow by between:

- 457 (low growth), •
- 767 (medium growth) and •
- 1246 additional people (high growth) ٠

At an average household size of 3.8, this would imply between roughly 21-50 additional households in the main town and 120-328 additional houses in North End.

When reconciling with the 2020 housing waiting list (718 applicants for Prince Albert town), the 2020-2030 total housing demand for Prince Albert Town is between 859 and 1103 houses which, at 25 du/ha, will require between 34-44 hectares of additional land for housing. Even if the gross dwelling unit density is halved to 12.5du/ha (which is too low and should not be aspired to), the new land requirements would be 64-88ha of land.

Total: 7738

0.4 0.8

Data Source: WCG DSD 2020

Area	Growth Rate %	Rank	Base Population 2020	Base No. of Households 2020 (Household size 3.8)	Projected Population 2025	No. of Households 2025	Projected Population 2030	No. of Households 2030	Additional People 2020- 2030	Additional Households 2020-2030	Land Required @ 25duha	2020 Housing Waiting List	2020-2030 Total Housing Demand	Land Required (ha)												
Prince Albert Town SP	0.67	Low	1153		1192	314	1233	324	80	21	0.84		850	34												
	1.1	Med		303	1218	321	1287	339	134	35	1.41	710	007													
	1.73	High			1257	331	1371	361	218	57	2.29		055	39												
North End SP	0.67	Low	6595											1			6820	1795	7052	1856	457	120	4.81	/10	755	50
	1.1	Med		1736	6968	1834	7362	1937	767	202	8.07		1103													
	1.73	High			7191	1892	7841	2063	1246	328	13.11			44												

Figure 5.11: Map of Prince Albert Projected 2020-2030 Sub-Place Population (Data Source: WCG DSD, 2020)

5.4.1.2 Leeu Gamka Town

By 2030 the total population of Leeu Gamka/Welgemoed/Bitterwater is projected to be between

- 3148 (low growth),
- 3286 (medium growth) and
- 3501 people (high growth).

By 2030 Leeu Gamka/Welgemoed areas will naturally grow by between

- 45 (low growth),
- 76 (medium growth) and
- 124 (high growth) additional people

By 2030 Bitterwater will naturally grow by between

- 159 (low growth),
- 266 medium growth and
- 433 (high growth) additional people

At an average household size of 3.8, this would imply between roughly 12-33 additional households in Leeu Gamka/Welgemoed and between 42 to 114 additional houses in Bitterwater.

When reconciling with the 2020 housing waiting list (335 applicants for this area), the 2020-2030 total housing demand for this area is between 389 to 481 houses which, at 25 du/ha, will require between 16 to 19 hectares of additional land for housing. Even if the gross dwelling unit density is halved to 12.5du/ha (which is too low and should not be aspired to), the new land requirements would be 32-38ha of land.

Data Source: WCG DSD 2020

0 0.375 0.75 1.5 Kilometers

Area	Growth Rate %	Growth Scenario Rank	Base Population 2020	Base No. of Households 2020 (Household size 3.44)	Projected Population 2025	Projected No. of Households 2025	Projected Population 2030	Projected No. of Households 2030	Additional People 2020- 2030	Additional Households 2020-2030	Land Required @ 25du/ha	2020 Housing Waiting List	2020-2030 Total Housing Demand	Land Required (ha) @ 25 du/ha
Bittewater SP	0.67	Low	2290		2368	623	2449	644	159	42	1.67		389	16
	1.1	Med		603	2419	637	2556	673	266	70	2.80			
	1.73	High			2497	657	2723	716	433	114	4.55	225		17
Welgemoed & Leeu Gamka SP	0.67	Low			676	178	699	184	45	12	0.48	335	425	17
	1.1	Med	654	172	691	182	730	192	76	20	0.80		101	10
	1.73	High			713	188	778	205	124	33	1.30		481	19

Figure 5.12: Map of Leeu Gamka/Bitterwater/Welgemoed Projected 2020-2030 Sub-Place Population (Data Source: WCG DSD, 2020)

5.4.1.3 Klaarstroom Town

By 2030 the total population of Klaarstroom is projected to be between

- 689 (low growth),
- 719 (medium growth) and
- 766 (high growth) people.

By 2030, Klaarstroom will naturally grow by between

- 45 (low growth),
- 75 (medium growth) and
- 122 (high growth) additional people

At an average household size of 3.8, this would imply between roughly 12-32 additional households.

When reconciling with the 2020 housing waiting list (144 applicants for this area), the 2020-2030 total housing demand for Klaarstroom is between 156 and 176 houses which, at 25 du/ha, will require between 6-7 hectares of additional land for housing. Even if the gross dwelling unit density is halved to 12.5du/ha (which is too low and should not be aspired to), the new land requirements would be 12-14ha of land.

Klaarstroom 2020 Population
Klaarstroom SP

Total: 644

Data Source: WCG DSD 2020

San 1 1

0 0.1250.25 0.5 Kilometers

		A REAL	No.			the t						
DSD 20	120				Y							
						Klaarstr	room: 640					
ters			K	P			X					
Growth	Base	Base No. of Households	Projected	Projected	Projected	Projected	Additional	Additional	Land	2020	2020-2030	Land

Area	Growt h Rate %	Growth Scenario Rank	Base Population 2020	Base No. of Households 2020 (Household size 3.44)	Projected Population 2025	Projected No. of Households 2025	Projected Population 2030	Projected No. of Households 2030	Additional People 2020-2030	Additional Households 2020-2030	Land Required @ 25du/ha	2020 Housing Waiting List	2020-2030 Total Housing Demand	Land Required (ha) @ 25 du/ha
Klaarstroom	0.67	Low			666	175	689	181	45	12	0.47		156	6
	1.1	Med	644	169	680	179	719	189	75	20	0.79	144	164	7
	1.73	High			702	185	766	201	122	32	1.28		176	7

Figure 5.13: Map of Klaarstroom Projected 2020-2030 Sub-Place Population (Data Source: WCG DSD, 2020)

5.4.1.3 Prince Albert Non-Urban (PAM NU)

PAM NU includes Prince Albert Road, Kruidfontein, Seekoegat and all surrounding areas. By 2030 the total population of PAM NU is projected to be between

- 3256 (low growth), ٠
- 3399 (medium growth) and •
- 3620 (high growth) people. ٠

By 2030, PAM NU will naturally grow by between

- 211 (low growth), ٠
- 354 (medium growth) and ٠
- 575 (high growth) additional people ٠

At an average household size of 3.8, this would imply between roughly 56-151 additional households. It would be assumed that given the arid conditions of liveability in these remote areas, the most likely scenario would be the low growth.

When reconciling with the 2020 housing waiting list (4 applicants for this area), the 2020-2030 total housing demand from PAM NU is between 60 and 155 houses which will require between 2-6 hectares of additional land for housing.

It can be assumed that housing waiting list will be accommodated in urban areas, particularly Klaarstroom.

Total: 3045 Data Source: WCG DSD 2020

20 Kilometers

.

Area	Growth Rate %	Rank	Base Population 2020	Base No. of Households 2020 (Household size 3.8)	Projected Population 2025	No. of Households 2025	Projected Population 2030	No. of Households 2030	Additional People 2020- 2030	Additional Households 2020-2030	Land Required @ 25duha	2020 Housing Waiting List	2020-2030 Total Housing Demand	Land Required (ha)
	0.67 Low	Low			3149	829	3256	857	211	56	2.22		60	2
Non-urba	n 1.1	Med	3045	801	3217	847	3399	894	354	93	3.73	4	97	4
	1.73	High			3320	874	3620	953	575	151	6.05		155	6

Figure 5.14: Map of Klaarstroom Projected 2020-2030 Sub-Place Population (Data Source: WCG DSD, 2020)

Table 5.8: Sub Place Population, Household and Land demand Projection per sub place in Prince Albert Municipality

Area	Growth Rate %	Rank	Base Population 2020	Base No. of Households 2020 (Household size 3.8)	Projected Population 2025	No. of Households 2025	Projected Population 2030	No. of Households 2030	Additional People 2020- 2030	Additional Households 2020-2030	Land Required @ 25duha	2020 Housing Waiting List	2020-2030 Total Housing Demand	Land Required (ha)
Prince	0.67	Low			1192	314	1233	324	80	21	0.84		850	34
Albert Town	1.1	Med	1153	303	1218	321	1287	339	134	35	1.41		0.57	54
51	1.73	High			1257	331	1371	361	218	57	2.29	718	955	38
	0.67	Low	-		6820	1795	7052	1856	457	120	4.81	710	/00	
North End SP	1.1	Med	6595	1736	6968	1834	7362	1937	767	202	8.07		1103	44
	1.73	High			7191	1892	7841	2063	1246	328	13.11		1103	44
	0.67	Low	-		2368	623	2449	644	159	42	1.67		389	16
Bittewater SP	1.1	Med	2290	603	2419	637	2556	673	266	70	2.80			10
	1.73	High			2497	657	2723	716	433	114	4.55	335	425	17
Welgemoed	0.67	Low	-		676	178	699	184	45	12	0.48	300	420	
& Leeu	1.1	Med	654	172	691	182	730	192	76	20	0.80		481	19
Outrika Si	1.73	High			713	188	778	205	124	33	1.30			17
	0.67	Low	_		666	175	689	181	45	12	0.47		156	6
Klaarstroom	1.1	Med	644	169	680	179	719	189	75	20	0.79	144	164	7
	1.73	High			702	185	766	201	122	32	1.28		176	7
	0.67	Low			3149	829	3256	857	211	56	2.22		60	2
Non-urban	1.1	Med	3045	801	3217	847	3399	894	354	93	3.73	4	97	4
	1.73	High			3320	874	3620	953	575	151	6.05		155	6
Tabal	0.67	Low			14871	3913	15378	4047	997	262	10.49		1463	59
Municipal	1.1	Med	14381	3784	15194	3998	16053	4225	1672	440	17.60	1201	1641	66
Area	1.73	High		3784	15680	4126	17097	4499	2716	715	28.59		1916	77

Note: The Sub Place (SP) and Enumerator Area (EA) spatial population data from WCG: DSD Provincial Population Unit 2020 is used as a baseline. Three scenarios are projected from each baseline. The average household size 3.8 and the land required is based on 25 dwelling units per hectare. The 'estimated' Total Housing Demand was calculated by taking the number of additional households 2020-30 per scenario and adding this to the 2020 housing waiting list (backlog).

When adopting the Medium 1.1% growth scenario and **reconciling this with the 2020** housing waiting list (1201 applicants for the entire municipality), the municipal wide total future housing demand is:

- 17.6 ha for new growth, and
- 66 ha housing backlog + new growth.

By 2030 Prince Albert Town will need

- 9.48 ha of land for new growth and
- 38 ha for new growth + backlog.

By 2030 Leeu Gamka will need:

- 3.6 hectares for new growth, and
- 17 ha for new growth + backlog.

By 2030 Klaarstroom will need:

- 0.8 ha for new growth, and
- 7 ha for new growth + backlog.

By 2030 Non-urban will need

- 3.73 ha for new growth, and
- 4 ha for new growth + backlog.

The current **projected housing allocation for Prince Albert is zero for the 20/21-23 MTEF** period. The total Housing Waiting List of 1201 equates to approximately R228 mil of housing subsidies required from 2020 to 2030. This will likely not happen i.e. an annual allocation of approximately R22 million for the Prince Albert area is not on the cards (approximately 115 houses per year)

The challenge remains to get Town Planners and Engineers (doing the Master Planning) to change their methods and thinking. A Housing Waiting List is not always a true reflection of the extent of low-cost housing. It is therefore important to consider the "new growth" as a **baseline parameter** and the "housing backlog + new growth" as a **ceiling parameter**.

It is worth noting that National Human Settlements are currently adopting a new housing policy model which will see the state, rather than build houses for people, instead provide them with land so that they can build their own houses.

This policy is called the rapid land release policy where land is released, cut out, fenced off and given to beneficiaries.

5.5 FUTURE FACILITY DEMAND

Much of the population and housing growth is likely to take place in the town of Prince Albert (particularly North End) and Leeu Gamka (particularly Bitterwater). Applying the total municipal population size and housing demand figures to the CSIR social facility demand and cost calculator, the facilities listed below will be required per growth scenario and will need to be largely located in the town of Prince Albert.

Low Growth Scenario (0.67%):

- + 2 new ECD facilities
- + 1 Primary School
- + 1 Community Sports field
- + 2.5 New open spaces / parks
- + 1 New cemetery
- Total Cost: R 102 mil

Medium Growth (1.1%) Scenario:

- + 2.5 ECD facilities
- + 2 Primary Schools
- + 1 Community Sports field
- + 3 New open spaces / parks
- + 1 New cemetery

Total Cost: R 168 mil

High Growth (1.73%) Scenario:

- + 3 ECD facilities
- + 1 Secondary School
- + 2 Primary Schools
- + 1.5 Community Sports field
- + 3.5 New open spaces / parks
- + 1.5 Cemeteries

Total Cost: R 241 mil

5.6 PHASE 2B FUNCTIONAL AREA DELINEATION AND YIELD DETERMINATION

Functional Area describe given areas should function and be prioritized for project investment which best fits future demand. Functional Areas occur at municipal scale (i.e. 1: 300,000) and at the town scale (1:15,000).

5.6.1 Functional Areas at the Municipal Scale

As shown in figure 5.15, the region of highest investment priority is the palm of the Caracal Paw Spatial Concept from Chapter 4. This is Prince Albert Town together with the Swartberg Mountain Range, Swartberg Circle (R328 and R407), various mountain passes, dams, Klaarstroom Historic Town and N12 national and provincial route. This region provides the highest social, economic, heritage and political offering, road accessibility, upstream water source and storage and ecological connectivity for the municipality.

Prince Albert Town is a **primary investment node.** Investments made in Prince Albert Town will have the greatest multiplier effect and impact on the greatest number of people. The town occupies a high-order in terms of services, facilities and employment opportunities, and has the largest population size, and greatest social need and economic growth potential within the municipality.

All other towns are **consolidation zones** meaning infrastructure renewal and maintenance are the priorities and limited expansion should be allowed because this places financial strain on the municipality to supply further services.

The primary routes for intergovernmental investment focus are the N1, N12, R407 and the R328 (particularly the Swartberg Circle Route and Swartberg Pass).

5.6.2 Functional Areas at the Town Scale

Figure 5.16 shows the Functional Areas at the town scale. These are suburbs with "similar characteristics (homogenic) from a developmental and service demand perspective" (COGTA, 2018), There are 4 primary identified functional areas. Prince Albert Town is divided into 5 sub functional areas:

Functional Area 1: Prince Albert Town

- FA 1.1: North End
- FA 1.2 Industrial
- FA 1.3 Historic Main Street
- FA 1.4 Historic Town Farms
- FA 1.5 The Integration Precinct

Functional Area 2: Leeu Gamka

Functional Area 3: Klaarstroom

Functional Area 4: Prince Albert Road/Non Urban

Each functional area is profiled in terms of its investment priority in Table 5.9. To provide further spatial directive, Figures 5.17, 5.18 and 5.19 show the SDF Maps for the towns of Prince Albert, Leeu Gamka and Klaarstroom.

Figure 5.16: Town Scale Functional Areas

Table 5.9: Functional Areas as defined by Investment Priority

FUNCTIONAL AREA	NAME	PRIORITITY	FUNCTION
FA 1	Prince Albert Town	Primary Investment Node	Specialised inland centre with tourism, medical, educational, commercial and administrative services as well as servicing surrounding rural areas. Greatest multiplier effect and impact on the greatest number of people.
FA1.1	North End	Upgrade Area	North End is the area with the highest need for infrastructure renewal. Given the development pressure here it is important that North End should accommodate densities up to 25 du/ha. Much of the older eastern portion of North End can be developed privately to include second dwelling units. In terms of areas for social facility clustering this includes the North End Neighbourhood Node (Primary school) and Learning Space/hub. The vacant land North of North End is considered last priority land for residential. As this is not a very high rates generating area, a fine balance must be made in order to bring North End up to an acceptable level of service.
FA1.2	Integration Precinct	New Development Area	 Areas where new infrastructure and additional bulk will most likely be required. These areas should be the focus of any municipal investment incentives including expedited land use development procedures and/or relaxation of development controls. The primary new development area for PAM is the Integration Precinct (Shown in Orange) which consists of: Extended Thusong Centre to house the council and finance offices Sport and recreational sub-area (Funding through DCAS) The current hospital Housing Sites A, and C to not only accommodate housing demand projections, but to promote the spatial transformation of Prince Albert Town. These sites are well located to social and government facilities as well as job opportunity in the CBD. 69 GAP residential development adjacent (West) of North-end to connect to Sports Precinct Public space and safety improvements (Amphitheatre, lighted walkways, landscaping and streetscape improvements; Extension of Mecuur Street to Hospital. Zebra crossing to SPAR

FA1.3	Industrial Area	Long Term Development Area	Industrial Development Area should in the long-term (10-20years) aim to accommodate future demand and contribute to economic growth and employment opportunities. The aim would be to develop the vacant land parcels in this zone.
FA1.4	Historic Main Street	Heritage Overlay and Consolidation Area	Includes Church Street as the Historic tourism street/corridor with educational, commercial, religious and administrative services. It also includes adjacent Karoo Style housing typologies. Promote infill of vacant land parcels and to enhance subdivision of land in an architecturally and heritage appropriate manner. The aim should be to bring this area to a maximum density of 15 du/ha.
FA 1.5	Historic Town Farms	Heritage Overlay and Consolidation Area	A further assessment of the town farms will be conducted, to determine which farms could potentially be subdivided and sensitively developed to accommodate additional dwelling units without undermining the character and feel of the town, as well as agricultural land. This assessment will be included as an Annexure to this SDF.
FA 2	Leeu Gamka (Urban Edge)	Consolidation Area	
FA 3	Klaarstroom (Urban Edge)	Consolidation Area	Currently, non-rates generating settlements where basic infrastructure renewal and maintenance are the priorities for this area, along with appropriate infill and densification. Aim is to simply meet the local convenience needs with basic social facilities for surrounding rural
FA 4:	Prince Albert Road (Urban Edge) + Non Urban	PA Road a Consolidation Area	communities.

Figure 5.17: Prince Albert Town SDF 2020

Figure 5.18: Leeu Gamka Town SDF 2020

Figure 5.19: Klaarstroom Town SDF 2020

5.6.3 Yield Determination

Figure 5.20 on the following page shows how the potential yield from vacant developable land per town scale functional area can be reconciled with the future housing and land demand forecast. Further breakdowns are provided for the towns of Prince Albert, Leeu Gamka and Klaarstroom in Figures 5.21 to 5.23.

To determine the approximate Gross Lettable Area (GLA) and number of units possible in each functional area and within each vacant land parcel, several assumptions have been made:

- 30% of developable area deducted for open space and parking.
- Maximum floor area is 1 storeys;
- Average gross dwelling unit density is 25 du/ha dwelling units per hectare;

The yields generated using these assumptions represent an optimal and bestcase scenario for future development of the identified vacant developable land parcels identified. These yields are represented as the "100% Scenario" in the vacant parcels but not the entire functional areas, where densities can be further increased through secondary dwellings and maximising to 25 du/ha.

5.6.4 Yield Summary

By 2030, at a medium (1.1%) growth scenario, there will be:

- 347 units and 17.6 ha of land needed for new growth and
- 1544 units and 66 ha of land needed for new growth + housing backlog

In total **128.6 ha** of land is vacant and available for residential infill within all urban edges. When applying the assumptions described above, the vacant developable land can yield a total of 1660 units.

26.8 hectares of land are deemed to be '**high priority**' land (Sites A, B and C) in Prince Albert Town which can yield 467 units at 1 Storey 70% Coverage and 934 units at 2 storey 70% coverage.

As per the 'high density' scenario of vacant developable land in a medium 1.1% growth scenario, the demand can therefore be easily accommodated over the 10 year period. Over and above the vacant optimal land, densities in existing low density areas can also be increased to accommodate additional growth.

Land ownership of the vacant parcels is currently unknown but assumed to be municipal owned in high priority sites.

It should be noted that these are the optimal sites for residential infill but not all development. Hence, in addition to the above, if for instance 50% of FA3 Historic Main Street were to include a second dwelling, then 349 more residential units could be accommodated. Focus should therefore be placed on developing an optimal infill scenario as indicated in the calculations above because infill and compaction is shown to decrease CAPEX and OPEX expenditure. This will need to be accompanied by a land acquisition and release strategy.

Functional Area		Size (ha)	Number of Urban Households 2020	Current Household Density (du/ha)	Vacant Developable for residential (ha)	Vacant Yield: GLA in m2 70% Coverage	Residential Yield No. of units	Additional Households 2020-2030 1.1% New growth Urban Residential Demand	Housing Waiting List	1.1% New Growth + Backlog Urban Residential Demand
1.1	North End	142.0	1736	12.2	38.6	270 222 m²	676	202		
1.2	Industrial	17.7	0	1.1		9 483 m²			718	
1.3	Historic Main Street	158		4.4	15.75	110 282 m²	276	25		055
1.4	Historic Town Farms	458.9	303					35		700
1.5	Integration Precinct	14.6				102 200 m²				
1	Prince Albert Town	332 (Excl 1.4)			54.35	492 187	952	237		
2	Leeu Gamka	233	775	12.6	69.9	489 300 m²	648	90	335	425
3	Klaarstroom	33	169	5.12	3.1	21 700 m²	40	20	144	164
4	PA Road + Non Urban	12.7			0.8 (Pa Road)	8 036 m²	20		2	
	TOTAL	611 (Excl 1.4)	2983		128.24 ha	1 011 233 m²	1660	347	1201	1544

Figure 5.20: Town Scale Functional Areas and associated Yield and Demand

FA 1: PRINCE ALBERT TOWN: YIELD ON VACANT DEVELOPABLE LAND 2020

DEMAND AND YIELD RECONILIATION

DEMAND

Land required for New Growth:	5.6-14.5 ha
Residential Units:	<u>237 units</u>

Housing waiting list for Prince Albert Town:718Land required for New Growth + Backlog:34-44 haResidential Units:859 - 1103 units

POTENTIAL YIELD

Total Vacant Developable:	70.3 ha
Yield: GLA 1 Storey:	492 187 m²
Total Vacant Developable for residential:	55.7 ha
Yield GLA 1 Storey:	557 124 m²
Residential Units:	<u>951</u>
Potential Yield on Priority Housing Sites:	26.68 ha
- GLA 1 Storey:	186 778 m²
- Residential Units:	<u>467</u>
- GLA 2 Storey:	373556 m²
- Residential Units:	<u>934</u>

POTENTIAL HOUSING DEMAND

ti	onal Area	Size (ha)	Number of Household 2020	Current Household Density (du/ha)	Vacant Developable (ha)	Vacant Yield: GLA in m2 70% Coverage	Residential Yield No. of units	Sub Pl
	North End	142.0	1736	12.2	38.6	270 222	676	Are
	Industrial	17.7	0	1.1	1.35	9 483		
	Historic Main Street	158		4.4	15.75	110 282	276	Prince A
	Historic Town Farms	458.9	303					Town
	Integration Precinct	14.6	1		14.6	102 200		Nauth F
	Total	332 (Excl 1.4)			70.31		952	NORTH EI

Sub Place Area	Growth Rate %	Rank	Additional Households 2020-2030	Land Required @ 25duha	2020 Housing Waiting List	2020-2030 Total Housing Demand	Land Require d (ha)
Dringe Allaget	0.67	Low	21	0.84		859	34
Town SP	1.1	Med	35	1.41			
	1.73	High	57	2.29	718	955	38
	0.67	Low	120	4.81	710	755	00
North End SP	1.1	Med	202	8.07		1103	44
	1.73	High	328	13.11		1105	44

Figure 5.21: Map and Table of Prince Albert Town Functional Area Yield and Demand

POTENTIAL YIELD

FA 2: LEEU GAMKA TOWN: YIELD ON VACANT DEVELOPABLE LAND 2020

DEMAND AND YIELD RECONILIATION

DEMAND

Land required for New Growth:	2.1 – 5.9 ha
Residential Units:	<u>52-147 units</u>
Housing waiting list for Leeu Gamka:	335
Land required for New Growth + Backlog:	16-19 ha
Residential Units:	<u>389-481 units</u>
POTENTIAL YIELD	
Total Vacant Developable:	69.9 ha
Yield: GLA 1 Storey:	489 300 m²
Total Vacant Developable for residential:	37 ha
Yield GLA 1 Storey:	259 000 m²
Residential Units:	<u>648</u>
Total Vacant Developable for new business:	19ha
Yield GLA 1 Storey:	133000m²

POTENTIAL HOUSING DEMAND

Sub Place Area	Growth Rate %	Additional Households 2020-2030	Land Required @ 25du/ha	2020 Housing Waiting List	2020-2030Total Housing Demand	Land Required (ha) @ 25 du/ha
Bittewater SP	0.67	42	1.67	с.	389	16
	1.73	114	4.55	335	425	17
Welgemoed & Leeu Gamka SP	1.1	20	0.80		481	19

POTENTIAL YIELD

Fur	nctional Area	Size (ha)	Number of Household 2020	Current Household Density (du/ha)	Vacant Developable (ha)	Vacant Yield: GLA in m2 70% Coverage	Residential Yield No. of units
2	Lee u Gamka	233	775	3.3	69.9	489 300	648

FA 3: KLAARSTROOM TOWN: YIELD ON VACANT DEVELOPABLE LAND 2020

DEMAND AND YIELD RECONILIATION

DEMAND

and required for New Growth:	0.47-1.25 ha
Residential Units:	<u>12 - 32 units</u>
Housing waiting list for Klaarstroom:	144
Land required for New Growth + Backlog:	6-7 ha
Residential Units:	<u>156-178 units</u>
Potential yield	
Total Vacant Developable:	3.1 ha
Yield: GLA 1 Storey:	217 000 m²
Total Vacant Developable for residential:	2.3 ha
Yield GLA 1 Storey:	16 100 m²
Residential Units:	<u>40</u>
Total Vacant Developable for new business:	0.8 ha
Yield GLA 1 Storey:	5600 m²

POTENTIAL YIELD

Fui	nctional Area	Size (ha)	Number of Househol d 2020	Current Househol d Density (du/ha)	Vacant Developable (ha)	Vacant Yield: GLA in m2 70% Coverage	Residential Yield No. of units
3	Klaarstroom	33	169	5.12	3.1	21 700	40

	1 1	1 1	1	1	-	_		
0	115	230				460 N	Nete	rs

POTENTIAL HOUSING DEMAND

Sub Place Area	Growth Rate %	Additional Households 2020-2030	Land Required @ 25du/ha	2020 Housing Waiting List	2020-2030 Total Housing Demand	Land Required (ha) @ 25 du/ha
	0.67	12	0.47		156	6
Klaarstroom	1.1	20	0.79	144	164	7
	1.73	32	1.28		176	7

Figure 5.23: Map and Table of Leeu Gamka Town Functional Area Yield and Demand

5.6.5 Quantifying Optimal Yield Scenarios

To determine the future infrastructure cost implications of developing the optimal yield scenario i.e. the resultant cost of water, sanitation, roads, stormwater, solid waste and electricity, the Western Cape Government Development Charges (DC) calculator will be used (See Table 5.10). This phase is still being undertaken,

The phase will further aim to reconcile the future optimal yield scenarios with the:

- 1. Infrastructure Investments needed to deal with backlogs; and the
- 2. Infrastructure Investments needed to ensure asset care and maintenance of infrastructure systems.

Table 5.10: Example of Western cape Government Development Charges Calculator

	Existing	Proposed	Development Charge levied (exd VAT)							
Unit	Rights	Rights	Water	Sanitation	Roads	Stormwater	Soild Waste	Electricity		
Dwelling Unit	1000		-R 14,078,269	-R 11,698,441	-R 1,452,551	-R 203,685	-R 1,646,144	R O		
Dwelling Unit	1000		-R 12,670,442	-R 10,528,597	-R 1,452,551	-R 387,971	-R 905,379	RO		
Dwelling Unit	1000		-R 9,854,788	-R 8,188,909	-R 484,184	-R 659,550	-R 905,379	R O		
Dwelling Unit			RO	R O	R O	RO	R O	R O		
Bedroom			RO	R O	R O	RO	R O	R O		
GLA	50		-R 5,631	-R 4,679	-R 1,114	-R 873	-R 249	R O		
GLA			R O	R O	R O	RO	R O	R O		
GLA]	RO	RO	RO	RO	RO	R O		
Coverage			RO	R O	R O	RO	R O	R O		
Coverage	50		-R 5,631	-R 2,340	-R 291	-R 921	-R 374	R O		
pupil	600		-R 1,351,514	-R 1,123,050	-R 464,816	-R 419,009	-R 134,684	R O		
Bed	1		-R 2,253	-R 1,872	-R 2,034	-R 737	-R 499	R O		
Bed			R O	RO	R O	R O	R O	R O		
			-R 37,968,528	-R 31,547,888	-R 3,857,540	-R 1,672,746	-R 3,592,709	RO		
			28,157	33,424	968	193,985	249	0		

5.7 STAGE 2: FUNDING ENVELOPE

Annexure D provides a full overview on various measures that describe the municipality's financial health, spending and revenue (as taken from municipalmoney.gov.za) as well as the outcomes of the 2017 Long Term Financial Plan (LTFP) conducted by Mubesko Consulting. However, the LTFP is now outdated and since the South African economy is in recession due to the COVID 19 induced lock down measures in 2020, a further assessment is required, which has been requested by DEA&DP to WCG: Treasury to determine the credibility of the LTFP and to determine a new funding envelope for the 10 year period. This should be revised with inputs from the PAM CFO.

Figure 5.25 shows PAM's Financial Health as taken from municipalmoney.gov However, this must be updated since PAM is experiencing the lowest payment rate which means there's less money for operations than pre-Covid-19. From a financial perspective stringent financial management must be implemented, such as monitoring financial targets, implementing expenditure reduction, monitoring debt levels, revenue improvement targets, debt collection targets, gearing ratio's, cost coverages and liquidity requirements.

As shown in Figure 5.24, the Prince Albert LTFP indicates that the total 10-year **projected revenue** for Prince Albert is **R 557.74m** while the total **projected expenses** will be **R 523.48m** representing a small surplus of **R 34.26m**. As shown in Figures 5.26 and 5.27, the projected expenses can be further divided as **R107.2m** in CAPEX and **R 416.2m** in OPEX.

PAM does not have a strong revenue base and are becoming more dependent on equitable share. The LTFP forecasts that R 234.03m or 42% of total projected revenue is expected to be allocated as equitable grants for the next 10 years. Municipal Money.gov put this at 43% in 2017/18 including grants and subsidies, which is an11% increase from 31%. This scenario may likely be no longer realistic given the COVID 19 pandemic and the effect it will have on both the equitable share and the revenue base. This highlights the critical importance of spending capex extremely wisely and strategically in addressing Prince Albert's development challenges.

Figure 5.24: Revenue versus Expenditure Forecast 2017-2018 (LTFP, 2017)

mm.gov	2015	2016	2017	2018	
Cash Balance	R 11 540 000 🕠	R 26 748 000 😲	R 27 412 000 👥	R 25 414 000 😶	
Cash Coverage	2.0	6.3 😲	5.2 😲	4.5 😯	
Spending of Operating Budget	-2.1%	- 14.6%	12.9%	-5.3%	
Spending of Capital Budget	-64.4%	-11.1% 😐	7.4%	-12.9%	
Fruitless & Wasteful Expenditure	16.8%	15.2%	10.4%		

Figure 5.25: Municipalmobey.gov Summary of PAM Financial Health

Figure 5.26 PAM Projected Revenue 2017-2026 (Source: Adapted from LTFP, 2017)

PROJECTED EXPENSES		2017 R (m)	2018 R (m)	2019 R (m)	2020 R (m)	2021 R (m)	2022 R (m)	2023 R (m)	2024 R (m)	2025 R (m)	2026 R (m)	TOTAL
OPEX	Employee Costs	14.4	17.8	18.8	20	21.2	22.4	23.8	25.2	26.7	28.32	218.62
	Councillors Remuneration	2.64	2.92	3.04	3.2	3.38	3.57	3.76	3.97	4.19	4.42	35.09
	Repairs and Maintenance	1.77	1.94	2.06	2.18	2.31	2.45	2.6	2.76	2.92	3.1	24.09
	Contracted Services and general Expenses	12.9	11.2	11.8	12.4	13.1	13.8	14.6	15.4	16.2	17	138.4
CAPEX	Bulk Purchases	7.96	8.45	9.03	9.62	10.25	10.9	11.6	12.3	13.1	. 14.07	107.28
TOTAL		39.67	42.31	44.73	47.4	50.24	53.12	56.36	59.63	63.11	. 66.91	523.48

Figure 5.27 PAM Projected Expenditure 2017-2026 (Source: Adapted from LTFP, 2017)

Recommendations from the LTFP 2017:

- PAM must raise loans in near future to meet the required spending and expenditure on capital projects and spending on replacing assets.
- Current Replacement Value of the Municipalities infrastructure assets amounted to between R164 m R237 m to replace all the assets.
- Of all infrastructure assets, R5.2 m worth is in a very poor condition or would have reached the end of its lifecycle and need to be replaced over the next 10 years at a projected replacement value of R9.72 m.
- PAM need to carefully accumulate cash reserves and determine alternative funds to replace assets when needed and formulating intensive comprehensive maintenance plans
- If no further grants could be obtained and/or MIG funds are not enough and/or the selling of assets are not possible, then loans to fund asset replacements must be considered.
- Explore further avenues to obtain more grants funding (keeping in mind the additional maintenance expenditure that will still be the liability of the municipality even though the additional acquisition is financed from external sources).
- The sale of investment property and/or other assets is necessary to generate cash for the period where cash shortage is evident. Weigh up the need for new assets against the need for replacing existing assets.
- Repairs and maintenance is one of the major line items relating to asset management. It would be meaningful to increase future spending on repairs and maintenance.
- Put strategies in place for reducing water and electricity distribution losses.
- Apply more strict credit control measurements to increase the debtor recovery rate.
- The condition of asset components should be accurately assessed.

- Migrate asset registers to become decision tools for integrated asset management.
- Assess quantum and timing of future revenues that an investment in infrastructure can generate before making that investment.

5.8 STAGE 3: BUDGET SCENARIO

5.8.1 Phase 4: Geolocated Project and Spatial Scoring Criteria

This phase aims to geo-locate the consolidated projects list on a map. The aim is then to capture the projects against the sub/main place boundaries and score or test them against the following criteria:

- Project located in a Priority Investment Settlement;
- Project located in a Priority Investment Area within a settlement;
- Project located in either a priority investment area / upgrade area / densification area or informal settlement upgrade area;

5.8.2 Phase 5: Prioritized 10-year Capital Programme

This phase involves applying scoring the consolidated list of projects against a prioritisation framework, which uses the spatial scoring from Phase 4 and adds this to a scoring of projects against engineering and financial criterio to determine a composite score (See Table 5.11).

Proposed Engineering prioritization criteria:

- Statutory/legal requirement
- Enhancement of Service Delivery
- Permanent job creation
- Implementation readiness
- Labour Intensive Construction
- Risk rating

Proposed Financial prioritization criteria:

- Affordability
- Counter-funding required
- Revenue generating
- Lifespan of asset
- Opex consequence

This phase aims to create consolidated list of prioritized capital projects against the meet sspatial financial and engineering criteria, The output is a prioritized 10year Capital Expenditure Programme.

PRIORITISATION TOOL FOR INFRASTRUCTURE INVESTMENT							
		Project A	Project B	Project C			
SPATIAL STRATEGY PRIORITISATION CRITERIA	Criteria 1: Project Falls within a Municipal Scale: Priority Investment Area? (Y = 1, N = 0)	1	1	0			
	Criteria 2: Project Falls within a Settlement Scale Priority Investment Area 9 (Y = 1, N = 0)	1	0	0			
	Criteria 3: Project Falls within a settlement scale Priority Investment Area, Upgrade Area, Densification Encouragement Area or Informal Settlement Upgrading Area? ($\gamma = 1, N = 0$)	1	0	0			
	Criteria 4: Project directly related to enabling the implementation of a MSDF Spatial Policy or Strategy, such as Spatial Transformation? (Y = 1, N = 0)	1	0	1			
	Criteria 5: Is this addressing a backlog? (Y = 1, N = 0)	1	0	1			
	Criteria 6: Is this project giving effect to services required in terms of a statutory or legal requirement? $(Y = 1, N = 0)$	0	1	1			
ENGINEERING PRIORITISATION CRITERIA	Criteria 7: Will this project result in permananet job creation $\ensuremath{\mathbb{F}}$ (Y = 1, N = 0)	0	1	1			
	Criteria 8: Is the project impementation ready? $(Y = 1, N = 0)$	1	1	1			
	Criteria 9: Will this project require labour intensive construction methods and hence create jobs? (Y = 1, N = 0)	0	0	1			
	Criteria 10: Is this infrastructure a net Asset or net Liability for the municipality? (Y = 1, N = 0)	1	0	1			
FINANCIAL PRIORITISATION CRITERIA	Criteria 11: Will this infrastructure be revenue generating? (Y = 1, N = 0)	0	0	0			
	Criteria 12: Will this infrastructure be affordable to the municipality (both in terms of capital as well as operationally)? (Y = 1, N = 0)	0	0	0			
	Criteria 13: Will this infrastructure require counter-funding from the municipality? (Y = 1, N = 0)	1	1	0			
	Criteria 14: Has the lifespan of the existing asset been reached which now requires replacing / upgrading or renewal $\{ Y = 1, N = 0 \}$	0	1	0			
	Criteria 15: Are the opex consequences of this asset affordable for the municipality? (Y = 1, N = 0)	1	0	0			
	COMPOSITE SCORE	9	6	7			
COMPOSITE PERCENTAGE			40	47			

Table 5.11: Example of Prioritization Framework

CONCLUSION AND NEXT STEPS TO FINALISE A CEF

CHAPTER 6: IMPLEMENTATION PLAN

6.1 IMPLEMENTATION AND INSTITUTIONAL REQUIREMENTS

SPLUMA requires that MSDF's include an Implementation Framework that contains the following

- Sector requirements, including budgets and resources for implementation
- Necessary amendments to the Municipal Zoning Scheme By-Law
- Specification of institutional arrangements necessary for implementation
- Specification of implementation targets, including dates and monitoring indicators; and
- Specification where necessary, of any arrangements for partnerships in the implementation process

The MSDF is a transversal planning instrument – impacting on most, if not all, of the Central Karoo District Municipality's internal municipal departments as well as the other spheres of government and stateowned entities operating within the municipal area. Institutional alignment is essential to implementing the MSDF and the following key actions are recommended to ensure that the SDF is mainstreamed in the strategies, priorities and budgets of various institutional actors operating within the district municipality.

The main argument and strategies of the MSDF must be incorporated into Annual Reports, annual IDP Reviews, and future municipal IDPs of both the district municipality as well as the local municipalities. Any amendment to the MSDF must form part of the IDP review and amendment process.

The main vision, strategies, proposals and policies of the MSDF must inform sector planning and resource allocation. The municipality's Integrated Transport Plan and any plans guiding the delivery of human settlements, infrastructure or government services must be led by and aligned to the vision, strategies, proposals and policies set out in this MSDF.

The vision, strategies, proposals and policies of the MSDF must inform land use management decision-making at the local scale, specifically as it relates to updated Western Cape Biodiversity Spatial Plan information, represented in the Critical Biodiversity mapping and Spatial Planning Category mapping.

National and provincial plans, programmes and actions; such as User Asset Management Plans (for the Health and Education sectors) and Comprehensive Asset Management Plans related to national and provincial assets and facilities, must be guided by the MSDF as they pertain to the Central Karoo District Municipality. The projections around adequate social facility provision must be considered.

6.2 SECTOR PLAN ALIGNMENT AN MSDF INPUT

The MSDF is a long term, transversal planning and coordination tool and a spatial expression of the Prince Albert Municipality's IDP. While the MSDF is informed by the Sector Plans, strategically and spatially, the Sector Plans should be led by the MSDF. To this end, with the adoption of this revised MSDF for the Prince Municipality, when the Municipality's Sector Plans are reviewed, the MSDF must be a key consideration or framework for such a review to ensure alignment and for the sector plans to realise their full potential as implementation tools of the MSDF. Rather than providing extensive input into each sector plan, the 5-key take aways from this SDF for sector plan alignment should be:

- Make use of future population, growth and land demand projections in this SDF. A major issue for aligned planning is a shared understanding of population growth projections and projections of space needed to accommodate this growth. A corporate decision must be made on the most credible numbers which will be the basis for all planning in the municipality. Hence, this SDF has attempted do so using a range of 3 growth projection scenarios.
- 2. Reference to and input into prioritized capital portfolio derived from Chapter 5 CEF.
- 3. Geo-locate proposed projects in master plans and sector plans and provide shapefiles to PAM. These will need to be consolidated into a geodatabase and captured against sub

places for the credibility and monitoring of the CEF to be enhanced.

- 4. Focus on the settlement and municipal wide spatial principles as articulated in Chapter 4.
- 5. Gather disaggregated and geolocated data from surveys where possible i.e. on traveler experiences while cycling, walking and moving around in the District, to give insight about the realities and needs of people navigating between towns.