

waste is diverted from waste sites before 2019. This can be achieved from recycling; recovery of garden waste for mulching, composting and wood chipping; recovery of construction and demolition waste by crushing and re-using; as well as utilising incineration through direct combustion.

Detailed compliance requirements and costs have been set forth in the report titled 'Assessment of the Municipal Integrated Waste Management Infrastructure in the Central Karoo' of 2016 and will not be reiterated here, other than to highlight the following:

- Many waste sites require new cells / airspace to be provided before 2030 – for example, Vaalkoppies requires a 12-year cell to last until 2030. The cost of this new cell would be approximately R23 million, requiring significant cost-recovery (to the value of about R500 per person using the facility);
- The waste profile of municipalities illustrates significant potential for composting, crushing and recycling.

Figure 3.38 illustrates the compliance cost expectations for Waste in the Central Karoo. Figure 3.39 illustrates the cost to achieve 20% diversion by 2019. The final Figure 3.40 illustrates the cost of additional infrastructure required up until 2030 (DEA&DP, 2016).

The Waste Act requires local municipalities to provide integrated waste services, which means they must have waste minimisation initiatives in place. The fact that vast distances make it impossible for the local municipalities to provide certain services does not prevent them from forming partnerships with local municipalities outside the Central Karoo DM but

adjacent to them. All the municipalities within the Central Karoo DM are obligated to contribute towards to provincial diversion target and Prince Albert cannot do so alone.

MUNICIPALITY	OPERATIONAL COMPLIANCE COST	REHABILITATION COMPLIANCE COST
Beaufort West Municipality	R6,984,500	R5,264,700
Laingsburg Municipality	R2,115,500	
Prince Albert Municipality	R9,788,100	
Total	R18,888,100	R5,264,700

Figure 3.38 – Cost to Comply for waste management per municipality

MUNICIPALITY	FACILITY	ESTABLISHMENT COST
Beaufort West Municipality	Composting Facility in Beaufort West	R2,462,000
Laingsburg Municipality	Composting Facility in Laingsburg	R1,792,000
Prince Albert Municipality	Composting Facility in Prince Albert	R2,154,000
Total		R6,408,000

Figure 3.39 – Costs to achieve 20% diversion per municipality

MUNICIPALITY	FACILITY	ESTABLISHMENT COST
Beaufort West Municipality	Airspace Provision at Vaalkoppies Landfill	R23,796,000
	Rehabilitation of Merverville Landfill	R2,801,400
	Public Drop-off in Merverville	R2,680,300
	Public Drop-off in Nelspoort	R2,680,300
	Public Drop-off in Murrumbidgee	R2,680,300
Laingsburg Municipality	Airspace Provision at Laingsburg Landfill	R16,539,000
Prince Albert Municipality	Airspace Provision at Prince Albert Landfill	R14,876,000
	Rehabilitation of Leeu Gamka Landfill	R5,271,800
	Public Drop-off in Leeu Gamka	R2,680,300
	Public Drop-off in Kladstroom	R2,680,300
Total		R76,385,700

Figure 3.40: Costs of additional infrastructure required until 2030

3.3.6 ENERGY & ELECTRICITY

According to the Central Karoo District Energy Consumption and CO₂ Emissions Report (2013), 88% of the energy requirement of the District is provided for through the use of liquid fossil fuels; namely, diesel and petrol. This high reliance on liquid fossil fuels is probably attributable to the high volume of automobiles that transit through the District, and the vast distances

residents are required to travel between towns. The other 12% of the energy consumed at the District scale is in the form of electricity which is delivered through Eskom's national power grid. As of 2016, 95.4% of households in the Central Karoo have access to electricity. It is important to note that the sale of electricity to residents is a major source of revenue for the area's local municipalities.

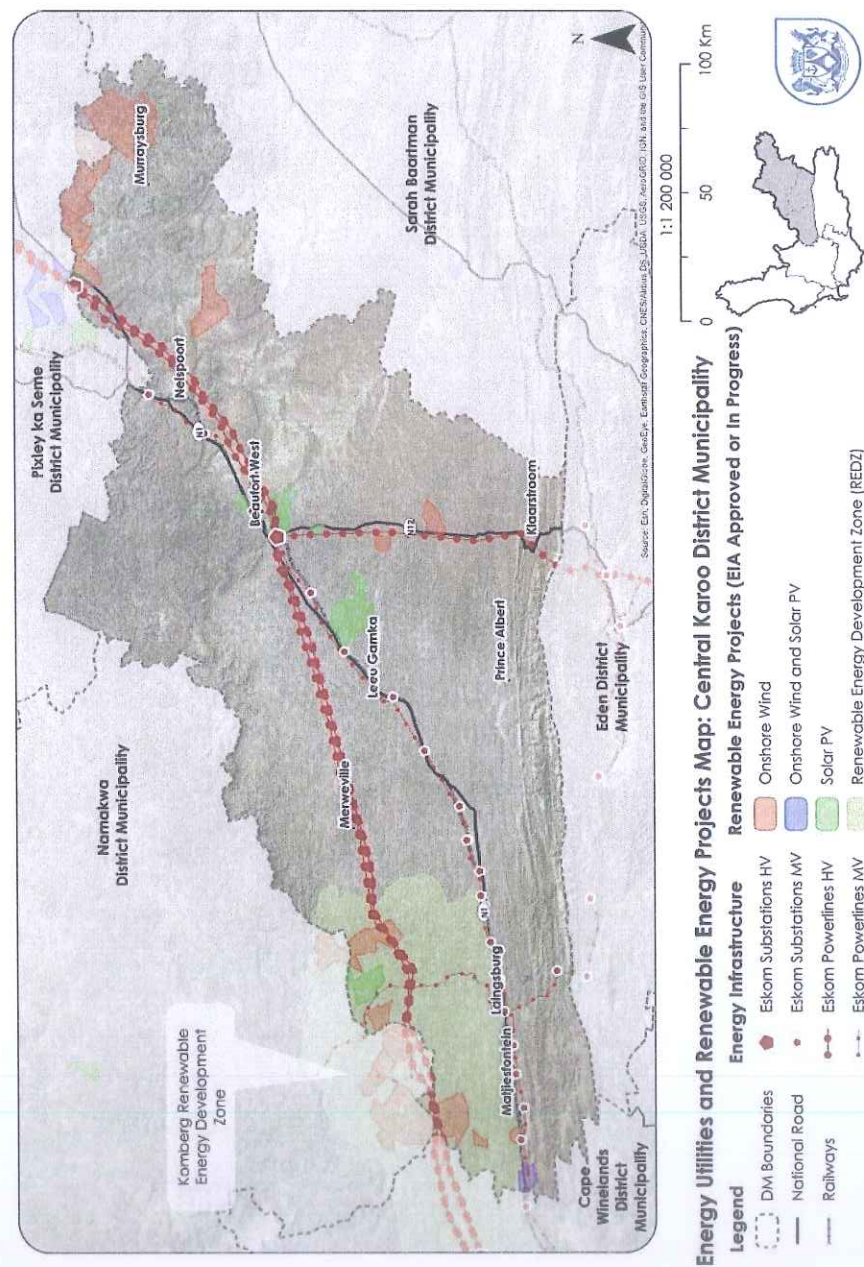


Figure 3.41: Energy Utilities Map for the Central Karoo District Municipality

Referring to Figure 3.41, Eskom has some important energy infrastructure running through the Central Karoo. A set of major high voltage powerlines crosses the District in a west-northeast direction, connecting at a major substation in Beaufort West. In addition, another set of high voltage powerlines connects from the Beaufort West substation and heads south into the Eden District. These powerlines form part of the national power grid. Furthermore, the District is crossed by medium voltage powerlines which follow roughly the same route as the N1 corridor. This set of powerlines has several substations which then branch out to supply energy to the local municipalities. 59% of the District's electricity provision is consumed in the residential sector, and most of the electricity generated and provided by Eskom is drawn from coal-fired power plants (which emit substantial amounts of greenhouse gas).

This report notes that there are several on-shore wind and solar energy projects which are currently being planned for the District.

3.3.7 HERITAGE

Due to the Central Karoo District Municipality being underlain by the Beaufort Group of rocks consisting of shales, mudstone, sandstone and fillite, with the mountains to the south of the district extending onto these rocks, the district is rich in fossils and is thus of great paleontological importance.

Pre-colonial archaeology is evident across the entire district, with particularly San and Khoi artefacts being evident. The San artefacts include rock paintings (in rocky terrain), stone tools and middens containing inter alia bones and food items. The middens were generally found along water courses, pans and flood plains. Beaufort West has a rich collection of rock

paintings and engravings, with the most notable being Nelspoort.

Khoekhoen pastoralists are known to have inhabited the District. Several stone kraal complexes have been identified. At about 1200-1400AD, a global climatic fluctuation appears to have caused an increase in rainfall. This may have increased grazing availability, resulting in the introduction of cattle into the District. The current climatic conditions however favour small stock, such as sheep and goats.

The colonial period provides greater recorded in-sight into the district's past. Early nomadic pastoralists (Trekboere) paved the way for increased expansion into the interior. This expansion not only resulted in frequent and violent clashes with the last of the stone-age peoples, but also in the indiscriminate hunting of large game, to near extinction. The establishment of early settlements took place from the late 1700's and early 1800's, generally in close proximity to water resources. This in turn resulted in many skirmishes over the scarce resource. Soon, these settlements developed into what are today the main towns within the District.

Evidence of the Anglo-Boer War in the early 1900s still remains in the form of grave sites and blockhouses along the railway line, and places such as Matjiesfontein and Prince Albert were used as garrisons by the British. There a number of provincial heritage sites across the District Municipality and they include the Swartberg Pass and Gamkaskloof Pass.

Provincial heritage sites are also found in the towns of Beaufort West and Prince Albert, a few farmsteads such as Baviaanskloof and Vrolijkheid, churches in Merweville and Laingsburg, and a corbelled structure on the farm Vlieefontein near Beaufort West. There are many more individual sites that are worthy of formal

protection. These include, fossil sites, archaeological sites, farmsteads, corbelled structures, dwellings, religious sites, graves and burial grounds, military fortifications, and scenic landscapes. **Figure 3.42** below provides examples of some of the District's heritage assets. However, this report recommends that a more detailed investigation and assessment be conducted to identify and extend protection to other sites worthy of heritage conservation.

Heritage Element	Theme & Description
Witberge	Natural Landscapes - Comprises one of South Africa's most characteristic landscape - with vast plains or 'vlaktes', flat-topped koppies and rocky outcrops, and defined by great mountain ranges of the escarpment and Swartberg Mountains.
Suurberg/Waaihoekseberg	
Elandsberg	
Groot Swartberge	
Oukloofberge / Droekloofberge	
Klein Roggeveldberg / Brandberg	
Komsberg	
Nuweveldberge / Die Rant	
Karoo Koppies	
Onder Sneeuweberg / Toorberg	
Gamkaskloof Rural Settlement & Reserve	Cultural Landscapes: Archaeological remains, stone and fossil sites, San hunter-gatherers & Khoi pastoralists, Trekboer history (Social History) as well as Anglo Boer War remains and relics.
Nelspoort Rock Engravings	
Matjiesfontein Valley	
Vleiland	
Schalekloof	
Klaarstroom	
Seweweekspoort Pass	
Swartberg Pass	
Gamkaskloof Pass	
Meitingspoort	
Molteno Pass & Roseberg Pass	Scenic Routes and Passes: Historic mountain passes constructed to provide access from the coast to the hinterland, railway history and important transportation linkages and elements.
R354 Route	
Roolnek Pass	
R353 Route and Teekloof Pass	
R407 Route	
Kareedouwberg Pass	
N12 Route & Droekloof	
R63 Route	
N1 Route	
Murraysburg Historic Town	
Beaufort West Historic Town	Historical Elements: Settlements established as church towns during the 1700's and early 1800's; urban morphology due to river/ribbon and/or grid pattern development; railway and institutional settlements.
Prince Albert Historic Town	
Merweville Historic Town	
Matjiesfontein Historic Village	
Klaarstroom Valley Historic Village	
Vleiland Valley Historic Valley	

Figure 3.42: Table of Central Karoo District heritage elements and their descriptions

3.3.8 SWOT OF THE BUILT ENVIRONMENT

STRENGTHS

- Beaufort West is an established and well-located service centre for the region – strategically located on the N1 and the primary rail route between Cape Town and Johannesburg. This locational advantage has in the past and will continue to in the future, benefit the town and the region more broadly.
- Low levels of informality and informal housing means that the municipality has proportionally more serviced households, and fewer householders (proportionally) to service and formalise.

WEAKNESSES

- Distances to and between settlements (and hence services and facilities) is very high and often very cost-prohibitive, making services and facilities both expensive to access and expensive to deliver, particularly because populations are very small and hence thresholds often not met to provide the service sustainably.
- The cost of public transport, as well as its location in an arid, relatively non-productive and poorly educated area has resulted in the under-performance of this region.
- Significant infrastructure backlogs with limited rates-generating potential and heavy dependence on national and provincial grants make this region fiscally vulnerable and undermines municipal financial sustainability.

OPPORTUNITIES

- Non-motorised transport infrastructure expansion in all the Karoo towns will significantly improve mobility for those who walk or cycle, which is the majority of residents.
- Both passenger and freight rail is expected to increase significantly into the future. The Central Karoo region is positioned to benefit from this both from an access and economic spin-off perspective.
- All town's in the Central Karoo have varying degrees of heritage-based tourism opportunities and potential exists to upgrade and improve the urban design and quality of these environments to generate income and economic spin-off's.
- Waste diversion and waste recycling initiatives could be up scaled in the region and could be jobs generating.
- Opportunities exist for expanding renewable energy projects related to solar and wind power in the Central Karoo.
- Metering of privately-owned boreholes could both regulate ground water use more effectively and generate income for local municipalities.

CONSTRAINTS

- Limited income generating potential from rates payers and hence limited infrastructure maintenance and new build potential.
- The financial sustainability of the Central Karoo District Municipality is in question.

- A lack of public transport and its associated viability hinders access opportunities for the residents of the Central Karoo.
- Water availability, drought and water infrastructure maintenance are significant constraints to general urban growth and development, as well as from an agricultural perspective.

3.4 SYNTHESIS AND KEY ISSUES

Given the above sectoral analysis of the Central Karoo region, the following sets out a synthesis and identification of the cross-cutting regional spatial issues that have been identified in relation to the desired spatial policy outcomes:

1. **Poverty levels, unemployment and inequality** are high in the region, and particularly within settlements, where spatial fragmentation and inequity are clearly visible. Teenage pregnancy, domestic abuse, drug abuse and inequality continue to plague the poor in each settlement. Despite this, stabilising population numbers, improved levels of human development and a decreasing dependency ratio present opportunities and a glimmer of hope for the future.

2. The **Critical Biodiversity Network, transport infrastructure network and water resources** of the region are potentially threatened by the prospect of mineral resources extraction (both shale gas and uranium mining) on an expansive scale. Extensive agricultural practices are also threatened by potential mineral resources extraction.

3. **Water security** is a significant threat to a region where **ground water resources** are both extremely valuable and scarce, and underpin the economic and social continuity and resilience of it – providing a much needed stop-gap between surface water availability and the urban and agricultural need for water. Concerningly, the 'sweet spot' for shale gas is also the same part of the District where water production and agricultural potential is highest (this is the areas eastwards of Beaufort West and westwards of Murraysburg). Doubly concerning, is that climate

change and alien vegetation further undermine future water security.

4. The Central Karoo region has significant **sense of place, heritage and tourism** assets both in its landscape quality in the rural areas as well as its underutilised urban heritage potential that can easily be undermined or eroded by poor development decisions and land use practices. All towns in the Central Karoo can enhance their heritage assets, main streets and entrances to the towns through appropriate urban design and urban renewal interventions.

5. **Accessibility** in the region is generally poor between settlements and higher order facilities, and non-motorised and public transport infrastructure within settlements is inadequate to accommodate the need. High speed rail, a potential future nationwide project, as well as investment in the existing freight and passenger rail systems bring many connectivity opportunities to Beaufort West. The N1 corridor is the life blood of the region.

6. The **financial sustainability** of the District is being eroded by significant budget cuts at national and provincial levels, as well as deepening maintenance backlogs in infrastructure, creating opportunities for shared services, rationalisation and improved efficiencies.

7. **Waste and waste management** is a concern, with the need to explore regional or other sustainable waste solutions in dealing with the generation of waste.

8. The pace of **land reform** is too slow, the location of land reform projects may not be optimal in terms of farm productivity and the agricultural potential of the Central Karoo as a whole is significantly lower than most other parts of South Africa.

9. **Agricultural beneficiation** and value-add can be enhanced in the region significantly, however the sector is extremely vulnerable to drought, is currently shedding jobs and generally underperforming. Similarly, unsustainable practices are eroding the carrying capacity of the land.

10. **Renewable energy** production can be up-scaled in the region and create downstream opportunities.

11. The need to improve **education outcomes**, partly through improved teacher : student ratios and providing good quality foundational phase through to tertiary education opportunities could equip persons in the region to exploit the emerging opportunities that present themselves as the economy diversifies towards a tertiary sector economy and grows.

As can be seen from the synthesis above, as well as synthesis maps that follow in **Figure 3.43, Figure 3.44 and Figure 3.45** the following observations about the state of development of the Central Karoo can be made:

- The urban settlements of **Beaufort West, Prince Albert and Laingsburg** are the primary regional service centres with high degrees of poverty, inequality and social issues. Beaufort West offers the highest order service centre of the Central Karoo, with the highest population number and highest degree of social challenge. Prince Albert, however, is experiencing the highest levels of population growth. These settlements need to focus on infrastructure maintenance, appropriate infrastructure expansion and gearing the settlements to experience a degree of population and economic growth, leveraging their economic assets, which in the case of Beaufort

West and Laingsburg is their positioning along the N1, whilst in the case of Prince Albert, the positioning at the foothills of the Swartberg Mountain Pass.

- The urban settlements of **Murraysburg, Leeu Gamka, Merweville, Klaarstroom, and Nelspoort** and **Matjiesfontein** are lower order settlements that provide basic services and access to basic goods. Whilst these urban centres also suffer from socio-economic challenges, their growth potential is limited and capacity for expansion undesirable. These settlements need to focus on consolidation, skills development and job-creating activities, rather than residential development, particularly in the low-income segment of the market, where the economic carrying capacity of the settlements is insufficient to accommodate population and residential growth.
- **Critical Biodiversity Areas** are currently not sufficiently connected and riverine habitats insufficiently protected from overgrazing and other potential developments.
- **Vast distances** exist between settlements with largely unaffordable non-regularised public transport services.
- The **rail asset** of the region underperforms significantly, largely due to an underperforming national rail asset which could accommodate higher levels of freight and passenger rail and significantly relieve road-based traffic demand.

Figure 3.44 seeks to illustrate the overlap between potential shale gas extraction areas and Critical Biodiversity Areas, the vast distances between settlements and where the loci of poverty exists in the Central karoo – being the urban settlements.

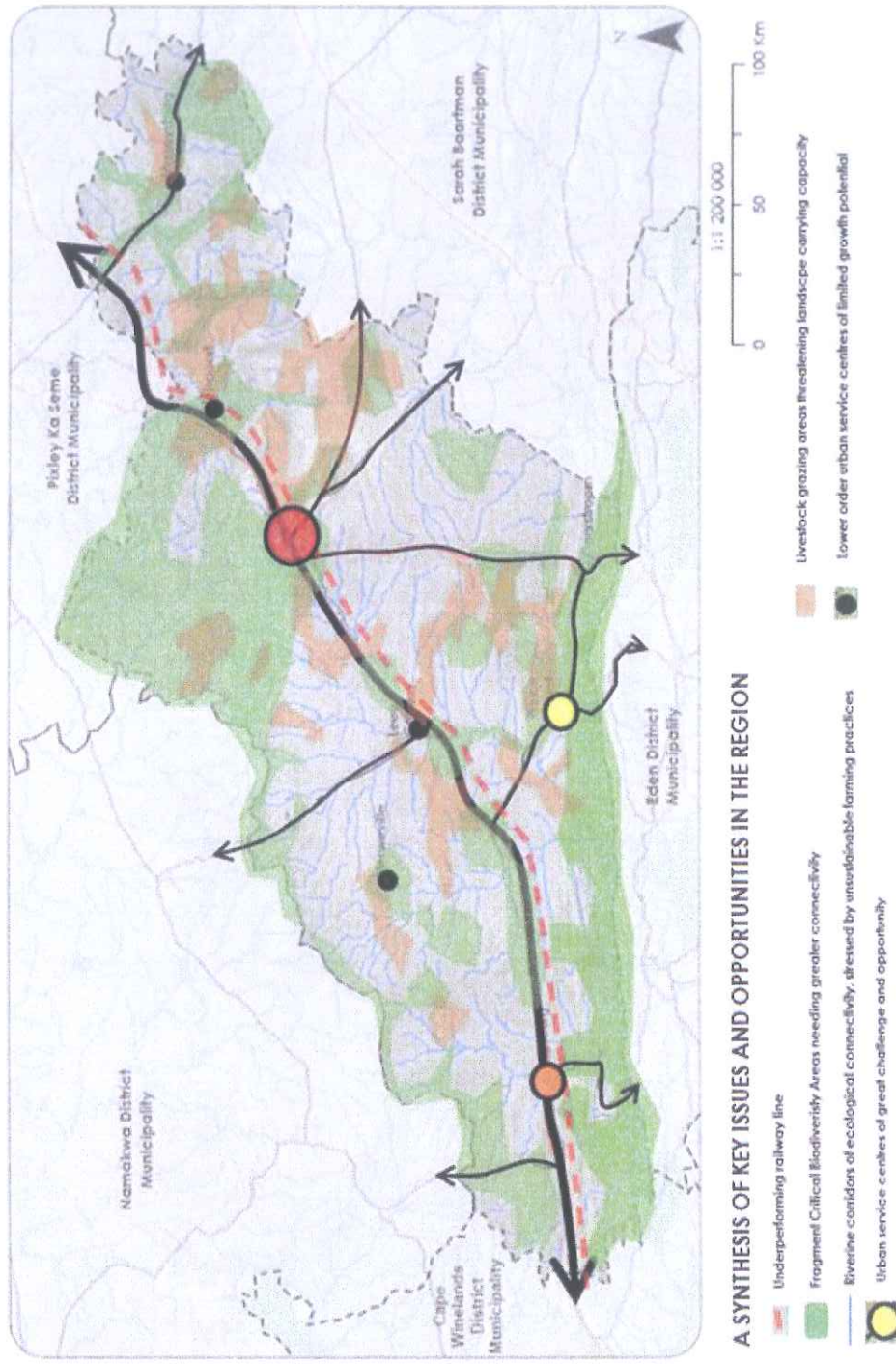


Figure 3.43 – Synthesis map 1: Key issues and Opportunities in the region

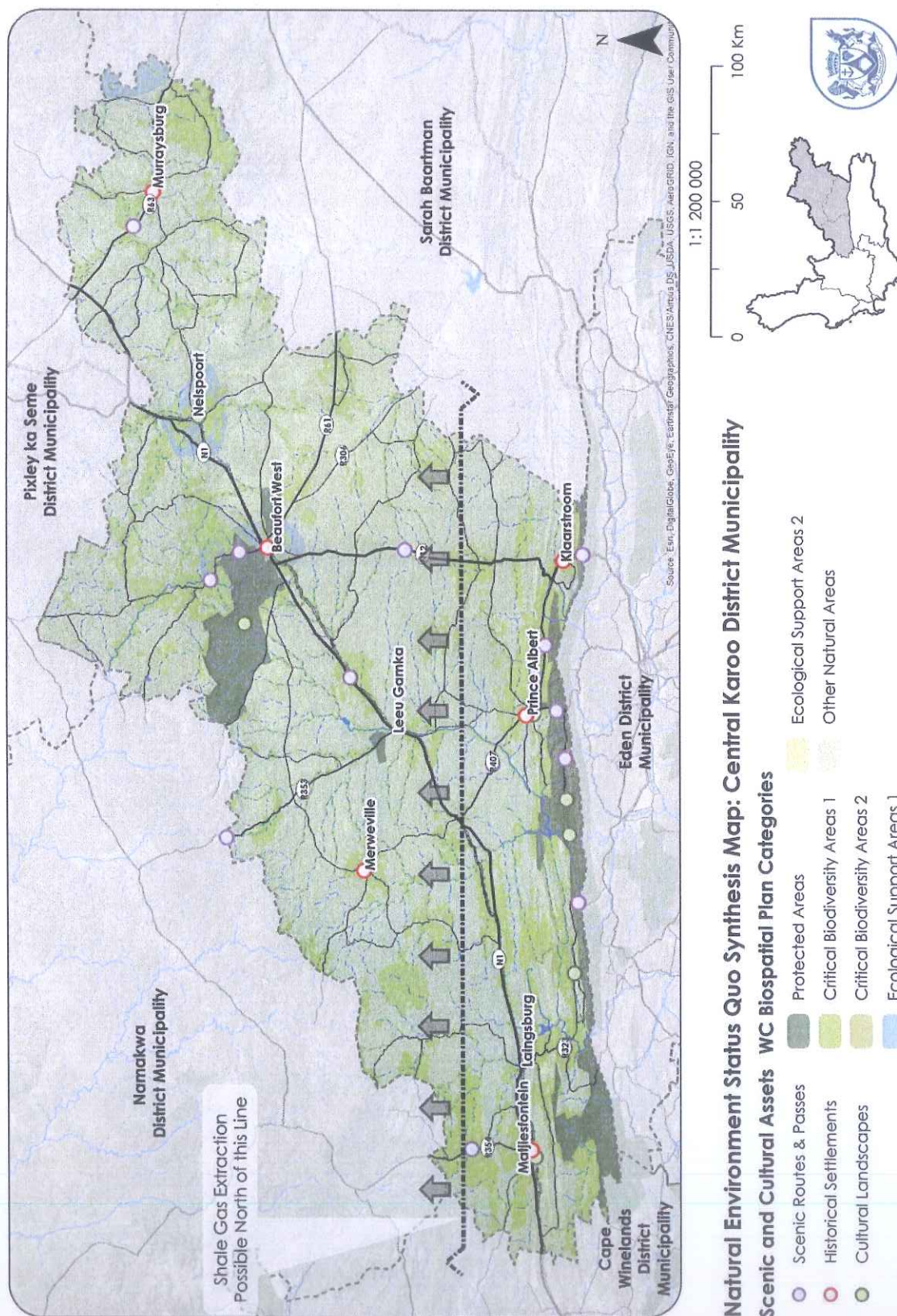


Figure 3.44: Synthesis map 2: Key Resource and Environmental issues and Opportunities in the region

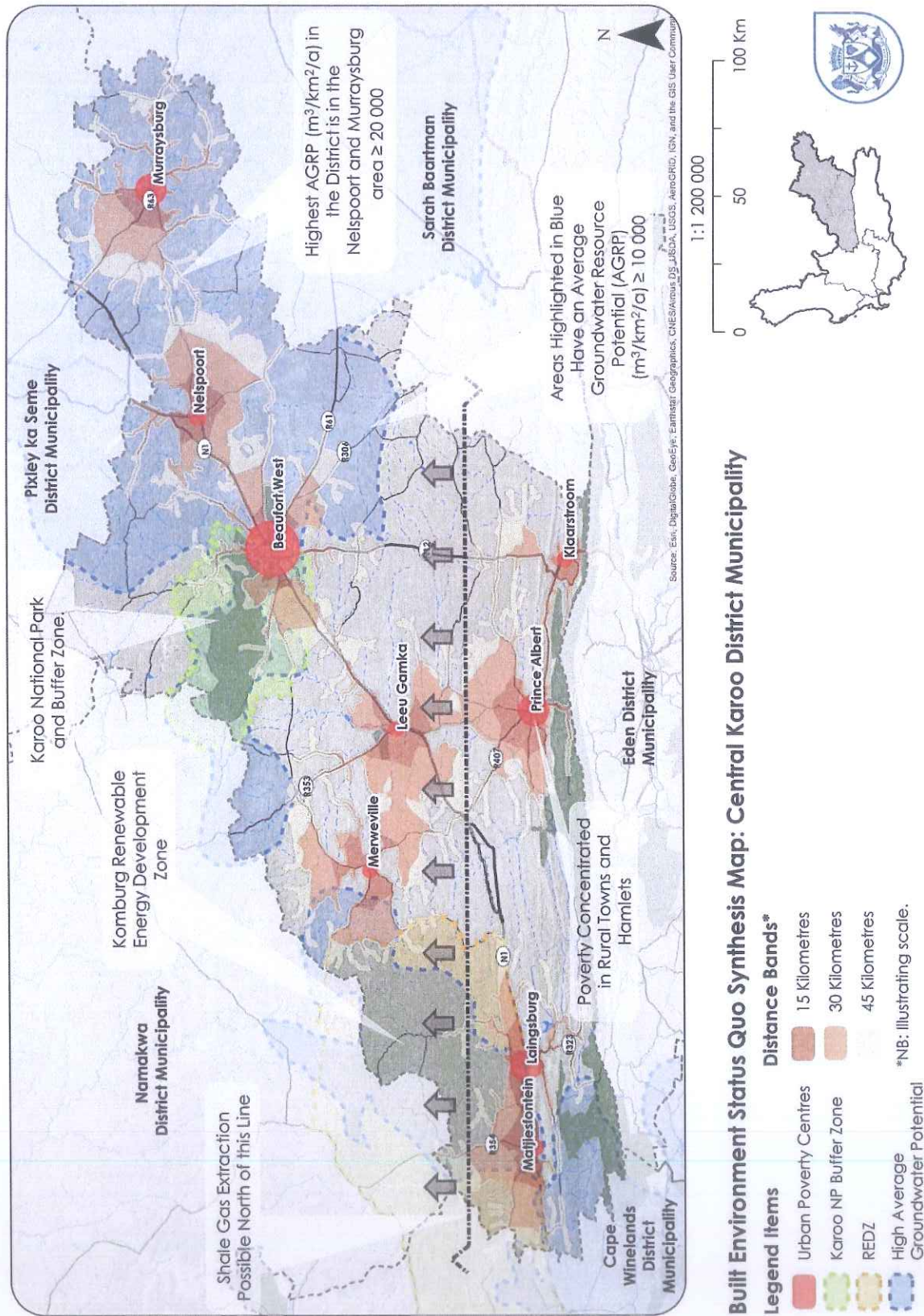


Figure 3.45: Synthesis map 3: Key built environment issues and opportunities in the region

CHAPTER 4: SPATIAL PROPOSALS FOR THE CENTRAL KAROO

4 SPATIAL PROPOSALS

The purpose of this section is to provide the overarching spatial direction, spatial development policy and associated strategies for the development and protection of the Central Karoo.

This chapter will set out:

- 1) the spatial vision for the Central Karoo,
- 2) the future growth needs of the district,
- 3) the spatial concept for the future growth and development of the municipality,
- 4) the spatial strategies required to attain this concept; and
- 5) how this concept manifests within the entire district municipality.

4.1 SPATIAL CONCEPT

4.1.1 SPATIAL VISION STATEMENT

The 2017 – 2022 Central Karoo Integrated Development Plan has the following vision for the Central Karoo: **Working together in Development and Growth.**

The mission goes on to state that the Central Karoo places a **high priority upon ensuring that future growth improves the quality of life** in the region. The region also seeks to **achieve sustainability, maintain its rural character and create healthy communities** by facilitating **economic growth**, improving infrastructure and **green energy opportunities**, providing and supporting **alternative modes of delivery** (shared

services), improve **marketing, branding and communication**, provide excellent **disaster management services** and maintaining **housing choices** for a range of income levels.

It is worth noting that the 2014 SDF's vision was **Working together in Sustainable Spatial Development and Growth**. It is proposed that this vision be revised to include resilience, as will be explained later in this section:

Working together in Sustainable Spatial Development and Growth towards a Resilient Central Karoo

Unpacking the spatial vision, the key phrases imply the following:

“Working together” – the Central Karoo must seek partnership driven solutions, realising that the challenges facing the Karoo are multi-faceted and cannot be addressed only by the local sphere of government. Solutions must involve the district, provincial and national spheres of government, state owned enterprises, as well as multiple private sector role players as well, such as corporates, businesses and farmers who play a critical and indeed central role in job creation and the improvement of the lives of the people of the Central Karoo.

THE SPATIAL CONCEPT FOR THE CENTRAL KAROO

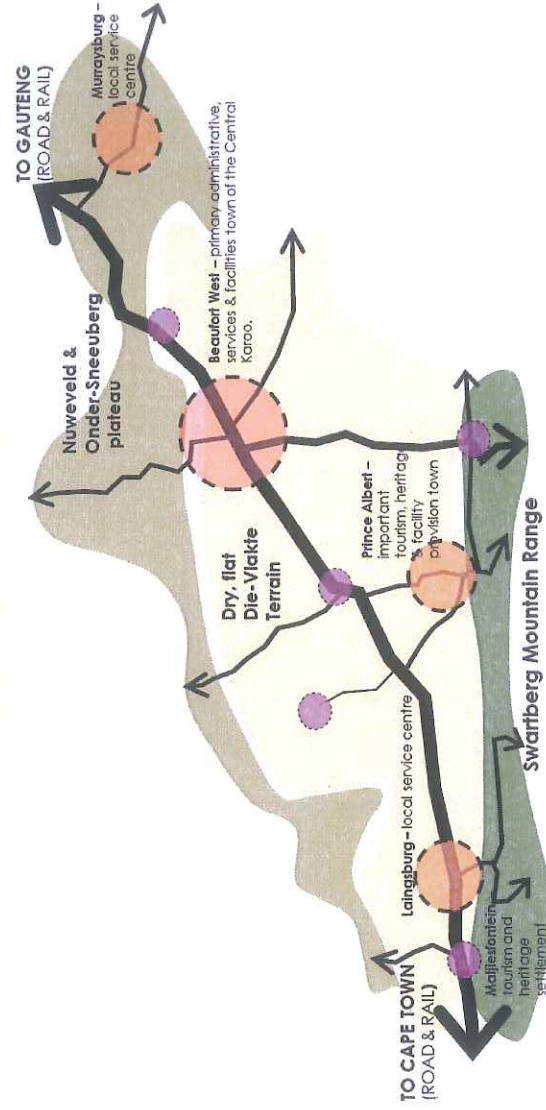


FIGURE 4.1: THE SPATIAL CONCEPT FOR THE CENTRAL KAROO

"Sustainable Spatial Development and Growth" – The municipality must work towards environmental, social, economic, and financial sustainability. Sustainability means meeting the needs of the current generation and society without undermining the ability of future generations to meet their own needs. This concept applies not only to environmental needs and resources, but also social and economic resources. Economic growth is a priority, but this economic growth must be done in a manner that does not harm the current and future inhabitants of the Central Karoo. Sustainable spatial development and growth must ensure that economic and human growth and development initiatives undertaken in the region do not undermine, and ideally should enhance, the sustainability of the environmental, social, economic and built environment. Furthermore, spatial growth must be undertaken in a manner that is consistent with the 5 SPLUMA principles of efficiency, spatial resilience, spatial justice, spatial sustainability and good administration.

"Towards a Resilient Central Karoo" – Resilience refers to the capability of individuals, social groups, or social-ecological systems, including towns and cities, not only to live with changes, disturbances, adversities or disasters (such as drought) but also to adapt, innovate and transform into new, more desirable configurations (Harrison et al, 2014). This SDF seeks to create a municipal area that is able to withstand sudden shocks or gradual changes to ecological, climate, social or economic systems. A resilient municipal area, in the context of the Central Karoo, is one where the economy is diversified, where the people are adequately skilled and employable, able to find employment, and where the natural environment provides adequate natural resources, such as water, including a sufficient reserve of such resources in times of scarcity and stress. Essentially, the municipal area

needs to not exceed its inherent carrying capacity to sustain human life, agricultural production, as well as continued integrity of biodiversity networks and systems. The Central Karoo is a water stressed and drought-prone region, and hence water resilience is the cornerstone of the future resilience of the region. Water is a critical resource that must be managed in a way that enhances and does not undermine future growth and development, as this will determine how the district is affected by the impacts of climate change.

From Vision to Strategy

In supporting of realising the above vision, the SDF will unpack it by focusing on the following three spatial strategies and one underpinning governance strategy, as shown in Figure 4.2, below.

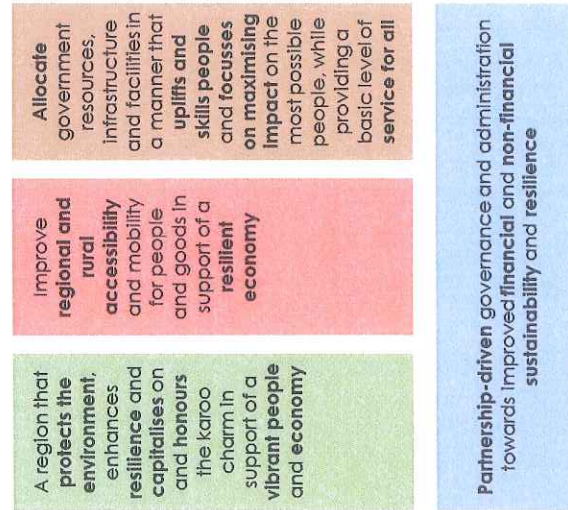


FIGURE 4.2: THE FOUR STRATEGIES UNDERPINNING THE SPATIAL VISION FOR THE CENTRAL KAROO

1) STRATEGY A: A REGION THAT PROTECTS THE ENVIRONMENT, ENHANCES RESILIENCE AND CAPITALISES ON AND HONOURS THE KAROO CHARM IN SUPPORT OF A VIBRANT PEOPLE AND ECONOMY

The Central Karoo is a dry, arid landscape, that is sparsely populated. The Growth Potential of Town's Study (2014) views its overall growth potential as low to very low, however, the district does possess a few **inherent competitive advantages** which must be capitalised upon to grow the economy, provide more people with access to work opportunities and perhaps even more importantly, the ability to see and create latent entrepreneurial opportunities in the economy.

This competitive advantage centres on its scenic appeal, sense of place and related tourism potential; its limited yet important agricultural activities and related agri-processing potential; green energy (solar and wind) potential; as well as on the potential shale gas reserves that exist in the region. Furthermore, the region has a significant rail system and national highway infrastructure assets running through it, providing the potential for improved connectivity to the broader South African economy.

The region is also incredibly water scarce which firstly inhibits both economic growth due to insufficient water to aggressively expand traditional agricultural output or industrial production and secondly, restricts human carrying capacity in terms of what can be supplied to residents.

The spatial strategy seeks to **protect, enhance and capitalise** on the distinct attributes and resources of Central Karoo landscape with its varied:

- **Natural and agricultural resource base**, such as the critically important river corridors of the Gamka, Dwyka, Dorps, and Meirings rivers and their tributaries, as well as irrigated agricultural production areas associated with these rivers, such as the agricultural corridors found between Pass - the Vleiland, between the Seweweekspoort Klaarstroom, as well as around the town of Murraysburg;

- **Settlements with different economic roles and heritage potential** such as the towns of Beaufort West, Prince Albert, Laingsburg, Matjiesfontein, Murraysburg and Merweville. All of these settlements hold significant built heritage assets such as churches, and other significant buildings and facades;

- **Unique landscapes, lifestyle, and tourism offerings**, specifically around the Swartberg and Meiringspoort passes and in the settlements of the Karoo. Landscapes of beauty and significance include the Karoo National Park, the Nuweveldberge and Nuweveld Plateau, the Swartberg and Onder-Sneeuberg mountain ranges and their foothills.

Numerous elements of spatial planning will determine if the municipality can lower its carbon emissions and maintain and enhance resilience to climate change and these cut across a variety of sectors including biodiversity, water management, parks and open spaces, transport and critical infrastructure and disaster management. The focus on non-motorised transport and walkability is critical for the Central Karoo, as well as looking at opportunities to direct freight off the N1 road network and onto rail in support of reducing greenhouse gas emissions in the district.

2) STRATEGY B: IMPROVE REGIONAL AND RURAL ACCESSIBILITY AND MOBILITY FOR PEOPLE AND GOODS IN SUPPORT OF A RESILIENT ECONOMY

Access, with the intent of achieving inclusivity and liveability, refers to the ability of people to access economic opportunities, social services and recreational amenities affordably and with ease. Ease of access is dependent on the functionality of the road and pedestrian (non-motorised transport) network to connect communities, as well as the availability and viability of transport services. Ease of access is also dependent on the distribution of community facilities and economic opportunities in the municipal area, and people's proximity to these.

International best practice, SPLUMA, and the PSDF underscore that access is not only a matter of mobility for cars. Rather, walkability, the liveability of towns, land use mix, and density are the ingredients that make it possible to improve access. These attributes allow for efficiency and equity of access for all communities to the regional economy, services, and amenities.

The N1-corridor, which includes the N1 highway as well as the rail link between Cape Town and Gauteng, are important mobility assets. Currently, the road link provides much needed through flow of people, goods and economic stimulus to the region, but the rail is underperforming significantly and has the potential to be a significant link for the movement of goods and people in the future. There is currently no subsidised public transport system in the region, making it incredibly expensive for people to move within this sparsely populated region to access goods, services and facilities.

Section 4.1.4 of this chapter sets out the spatial principles that underpin the need to create more walkable, liveable and equitable settlements. At the core of it, is the need to create and transform our settlements into places that work for people who do not have private car access, who rely on walking and other forms of non-motorised transport, and who need to have safe and efficient access to a range of opportunities (services, facilities, employment, and living arrangements). This means that land needs to be used more efficiently (i.e. denser development typologies promoted) and land uses mixed (i.e. providing a mix of residential, commercial and retail development along key intensification corridors within each settlement of the Central Karoo).

This strategy directs the municipality to enable appropriate accessibility within and between settlements of the Central Karoo by:

- Establishing a clear primary and secondary regional route hierarchy, role and investment priorities (setting out roles of N1, N12 and other routes); and
- Motivating for improved public transport mobility between settlements; and
- Promoting accessibility within settlements by focusing on non-motorised transport investments and providing the framework for the investment in non-motorised transport (pedestrian) pathways, side-walks and infrastructure within the settlements of Central Karoo.

3) STRATEGY C: ALLOCATE GOVERNMENT RESOURCES, INFRASTRUCTURE AND FACILITIES IN A MANNER THAT UPLIFTS AND SKILLS PEOPLE AND FOCUSES ON MAXIMISING IMPACT ON THE MOST POSSIBLE PEOPLE, WHILE PROVIDING A BASIC LEVEL OF SERVICE FOR ALL

Given the limited nature of government resources, there needs to be a strong focus on ensuring that a full suite of facilities and services are provided in the higher order urban settlement (being Beaufort West) with more rudimentary services and lower order services in the smaller settlements – and even mobile service solutions in the sparsest, smallest settlements or hamlets where there is insufficient demand and insufficient funds for a permanent service. The NSDF (2019) provides the national spatial social service provisioning model which assists in the effective, affordable and equitable development of social service delivery, as seen in Figure 4.3, below.

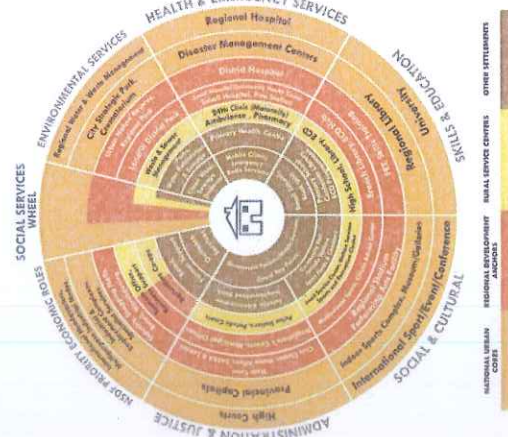


FIGURE 4.3: THE NSDF'S 'SOCIAL SERVICES WHEEL' (NSDF, 2019)

The settlement hierarchy identified for the Central Karoo is as follows:

- Beaufort West being the **regional service centre** for the entire Central Karoo district, being the settlement with the largest population and the highest-order public and private sector facilities and services in the district;
- Prince Albert, Laingsburg and Murraysburg fulfilling **major rural settlement** functions, containing rudimentary public and private sector facilities and services, but generally lacking specialised services which may be found at the regional services centre or higher-order settlements; and
- Merweville, Leeu-Gamka, Klaarstroom, Matjiesfontein, and Nelspoort performing **minor rural settlement** functions where public and private services are generally basic or provided on a mobile basis. Often persons living in these settlements need to travel to major rural settlements or regional service centres to access many services and facilities, both public and private.

4) STRATEGY D: PARTNERSHIP-DRIVEN GOVERNANCE AND ADMINISTRATION TOWARDS IMPROVED FINANCIAL AND NON-FINANCIAL SUSTAINABILITY AND RESILIENCE

There is a growing understanding that an 'integrated governance' approach is required to ensure better coordination, alignment, and impactful planning, budgeting and delivery. The Central Karoo District must pursue a range of partnerships to either build or strengthen desired impacts, as well as explore shared service solutions within the Central Karoo to ensure financial viability and investigate the sharing of administrative and logistical burdens associated with servicing a sparse region.

In addition to this, SPLUMA requires municipalities to pursue good administration practices to enhance and strengthen the spatial planning and land use management systems of the municipality. The application of an integrated governance approach directly ties in with the application of this SPLUMA principle.

Furthermore, the Municipal Readiness for Large Scale development initiative has identified that a shared service centre is required for the local and district municipalities of the Central Karoo for a range of services, such as town planning.

4.1.2 FUTURE DEMAND APPROACH STATEMENT

As set out in section 3.2.1, the following sets out the predicted population, housing and land requirements for future growth and development within the Central Karoo.

The population is set to grow to approximately **84 335 people in 2030** from the estimated mid-year population of **74 247 in 2016**, representing an increase of just over **10 000 new people, or 2 933 new households**.

It is anticipated that of these new 2 933 households, 1 301 will be in the municipality of Beaufort West (4 476 people); 1 137 will be in the municipality of Prince Albert (3 911 people) and 586 will be in the municipality of Laingsburg (2 017 people). It is evident then, that the municipality of Prince Albert will have the fastest population growth rate, while Beaufort West will have the largest absolute increase in population and households.

Looking at this on the town scale, the following is evident:

- There is a trend of a **significantly slowing growth rates** comparing the 2001 to 2011 periods and the 2011 to 2016 periods, across the board.
- Each local municipality has a different average growth rate, with **Beaufort West** growing the slowest (0.6% per annum) and **Prince Albert** growing at nearly **three times** as fast (1.73% per annum).
- The town of Beaufort West is anticipated to have **37 776 living in it by 2030**, up from 34 732 in 2016.

Municipality	Population (2001)	Growth Rate per annum (2001 - 2011)	Population (2011)	Growth Rate per annum (2011 - 2016)	Mid-Year Est 2016	Projected Population 2020	Projected Population 2025	Projected Population 2030
Beaufort West town	31 358	1.45	34 085	0.6	34 732	35 576	36 659	37 776
Mervetville	1143		1592		1 699	1 740	1 793	1 848
Murraysburg	4418		5069		5224	5351	5514	5682
Nelspoort	1483		1699		1750	1793	1847	1903
Beaufort West Non-urban population	4889		7141		7476	7662	8102	8349
Beaufort West Mun total	43291		49566		51080	52321	53914	55556

Municipality	Population (2001)	Growth Rate per annum (2001 - 2011)	Population (2011)	Growth Rate per annum (2011 - 2016)	Mid-Year Est 2016	Projected Population 2020	Projected Population 2025	Projected Population 2030
Prince Albert Town	5217	2.5	7054	1.73	7849	8411	9171	10000
Leeu Gamka	2134		2727		2984	3198	3487	3802
Klaarstroom	467		584		634	679	741	808
Prince Albert Non-urban population	2694		2771		2804	3005	3276	3572
Prince Albert Mun total	10512		13136		14272	15295	16676	18183

Municipality	Population (2001)	Growth Rate per annum (2001 - 2011)	Population (2011)	Growth Rate per annum (2011 - 2016)	Mid-Year Est 2016	Projected Population 2020	Projected Population 2025	Projected Population 2030
Laingsburg Town	4 386	2.41	5 667	1.46	6 150	6 520	7 014	7 545
Moffletonlein Town	391		422		434	460	495	532
Laingsburg Non-Urban	1904		2203		2312	2 451	2 637	2 834
Laingsburg Mun Total	6 681		8 299		8 895	9 430	10 144	10 912

FIGURE 4.4: THE POPULATION PROJECTIONS PER SETTLEMENT FOR THE CENTRAL KAROO UP UNTIL 2030

- The town of **Prince Albert** will have a population of **10 000 by 2030**, from 7 849 in 2016.
- The town of **Laingsburg** will have a population of **7545 in 2030**, from 6150.
- **Murraysburg** – the fourth largest town in the Central Karoo – will grow from 5224 in 2016 to **5682 in 2030**.
- **Leeu-Gamka** will grow from 2984 in 2016 to 3802 in 2030.
- The growth or decline in non-urban populations in the Central Karoo are less easy to predict as it is unclear if these populations are likely to move towards urban centres due to decline in agricultural production as a result of water scarcity or if these populations will grow due to agricultural innovation and expansion. Nevertheless, non-urban populations are significant – if not sparsely distributed – in the region.

In terms of **households and land requirements** for development in each town into the future, as shown in Figure 4.5 and Figure 4.6 below, the following is evident (please note the assumption of an average gross dwelling unity density of 25 dwelling units per hectare):

- **Beaufort West (the town)** will need to accommodate **885 new households** by 2030, equating to approximately **35 hectares** of land.
- **Prince Albert (the town)** will need to accommodate **625 new households** by 2030, equating to **25 hectares** of land.
- **Laingsburg (the town)** will need to accommodate **405 new households** by 2030, equating to approximately **16 hectares** of land.
- **Murraysburg** will accommodate 133 new households, translating to 5 hectares by 2030.
- **Leeu-Gamka** will accommodate 238 new households, translating to 10 hectares needed by 2030.

It should be noted that non-official municipal-wide population data released in 2020 by the WCG Department of Social Development's Population Unit indicates that **population growth may be significantly more muted than expressed in the figures above**. Although not disaggregated per settlement, this data indicates that the Central Karoo may only reach a population of 75 348 by 2030, indicative of population stagnation in Central Karoo during the 14-year period between 2016 and 2030.

HOUSEHOLD NUMBER PROJECTIONS FOR CENTRAL KAROO						
*** assuming 3.44 people per household (2011 Census)						
Municipality	No. of households 2011	No. of households 2016	No. of households 2020	No. of households 2025	No. of households 2030	
Beaufort West town	9908	10097	10342	10657	10981	
Merverville	443	494	506	521	537	
Murraysburg	1474	1519	1555	1603	1652	
Nelspoort	494	509	521	537	553	
B-West Non-urban population	2076	2231	2286	2355	2427	
Beaufort West Mun Total	14415	14849	15210	15673	16150	
Prince Albert town	2051	2282	2445	2666	2907	
Leeu Gamka	793	867	930	1014	1105	
Klaarstroom	170	184	198	215	235	
Prince Albert Non-urban population	806	815	874	952	1038	
Prince Albert Mun Total	3819	4149	4446	4847	5285	
Laingsburg town	1447	1788	1895	2039	2193	
Matjiesfontein town	123	126	134	144	155	
Laingsburg Non-Urban	640	672	713	746	825	
Laingsburg Mun Total	2410	2566	2742	2949	3173	
Total	20843	21584	22397	23470	24408	

FIGURE 4.5: THE HOUSEHOLD PROJECTIONS PER SETTLEMENT FOR THE CENTRAL KAROO UP UNTIL 2030

LAND REQUIREMENTS FOR NEW HOUSEHOLDS IN CENTRAL KAROO						
Future land requirements for new housing, assuming a future gross dwelling unit density of 25du/ha						
Municipality	New households between 2016 - 2020	Land Required by 2020 (ha)	New Households between 2020 - 2025	Land Required by 2025	New households between 2016 - 2030	Land Required by 2030 (ha)
Beaufort West town	245	9.8	560	22.4	805	35
Merverville	12	0.5	27	1.1	43	2
Murraysburg	37	1.5	84	3.4	133	5
Nelspoort	12	0.5	28	1.1	45	2
B-West Non Urban	54	2.2	124	5.0	196	8
Prince Albert town	163	6.5	394	15.4	625	25
Leeu Gamka	62	2.5	146	5.8	238	10
Klaarstroom	13	0.5	31	1.2	51	2
Prince Albert Non-urban	58	2.3	137	5.5	223	9
Laingsburg town	103	4.3	251	10.0	405	16
Matjiesfontein town	8	0.3	18	0.7	29	1
Laingsburg Non-urban	40	1.6	94	3.8	152	6
Total	813	33	1886	75	3025	121

FIGURE 4.6: THE LAND REQUIREMENT PROJECTIONS PER SETTLEMENT FOR THE CENTRAL KAROO UP UNTIL 2030

A note on assumptions

It should be recognised that these population, household, land and facility projections are based on **several assumptions**, such as the population growth rates experienced between 2011 and 2016 continuing in a linear manner, that each household average 3.44 people per household, and that the average gross dwelling unit density is 25 dwelling units per hectare. Although linear growth is an unlikely outcome, it is the only reasonable scenario that can be used to project future growth and is the 'middle road' growth scenario. Any variance in these assumptions will

- These new facilities must obviously be provided **where** and **the new households are going to be located** and hence the Municipal SDF's for each local municipality will need to influence the location of these facilities.

drastically change the future growth and development scenario, which is also intimately tied to and related to the future availability of water in the region, the growth or decline of the agricultural sector, migration and any major regional development initiatives (such as shale gas development) that may occur. Therefore, these figures are **indicative and approximate** and assist in identifying future land for development within the plans. It should be noted that both commercial and industrial new land requirements haven't been approximated.

Building	2933	houses will require between		
Early Childhood Development Centres	3	Early Childhood Development Centres	4	Early Childhood Development Centres
Primary Schools	3	Primary Schools	3	Primary Schools
Secondary Schools	1	Secondary Schools	2	Secondary Schools
Community Sports Field	0	Community Sports Field	2	Community Sports Field
Local Library	0	Local Library	1	Local Library
Community Health Care Centre	0	Community Health Care Centre	1	Community Health Care Centre
	0		0	
District Hospital	0	District Hospital		District Hospital
Children's Homes		Children's Homes	0	Children's Homes
Homes for the Aged	0	Homes for the Aged	0	Homes for the Aged
Community Halls / Centres	0	Community Halls / Centres	1	Community Halls / Centres
Municipal Offices	0	Municipal Offices	0	Municipal Offices
Firestations	0	Firestations	0	Firestations
Space (Community	1	Space (Community	5	Space (Community
Cemeteries	0	Cemeteries	2	Cemeteries
Police Stations	0	Police Stations	0	Police Stations

FIGURE 4.7: NEW FACILITIES REQUIRED TO SUPPORT 2933 NEW HOUSEHOLDS BY 2030 IN THE CENTRAL KAROO

4.1.3 DISTRICT-WIDE SPATIAL CONCEPT DIAGRAM

As articulated in the spatial vision, the spatial concept for the district municipality focusses on **sustainable development, resilience and partnerships**.

As illustrated, the four strategies of the municipal wide spatial concept are:

- A region that **protects the environment, enhances resilience and capitalises** on and honour's the Karoo charm in support of a vibrant people and economy;
- Improve **regional and rural accessibility** and mobility for people and goods in support of a resilient economy;
- **Allocate government resources, infrastructure and facilities** in a manner that uplifts and skills people and focusses on **maximising impact** on the most possible people, while providing a basic level of service for all; and
- **Partnership-driven governance** and administration towards improved financial and non-financial sustainability and resilience.

How the above translates spatially in the region is described as follows:

- 1) **Protect and enhance the natural systems** of the Central, ensuring **continuity** in the natural systems Karoo (such as the Karoo National Park, the Swartberg, the Onder-Sneeuberg and Nuweveld mountain ranges) and ensure the river corridors in the region (Gamka, Dorps, Dywka, Meirings rivers – and tributaries) are provided with the necessary buffers and setbacks (of at least 32m from the side of each riverbank) to preserve **continuity and**

THE SPATIAL CONCEPT FOR THE CENTRAL KAROO

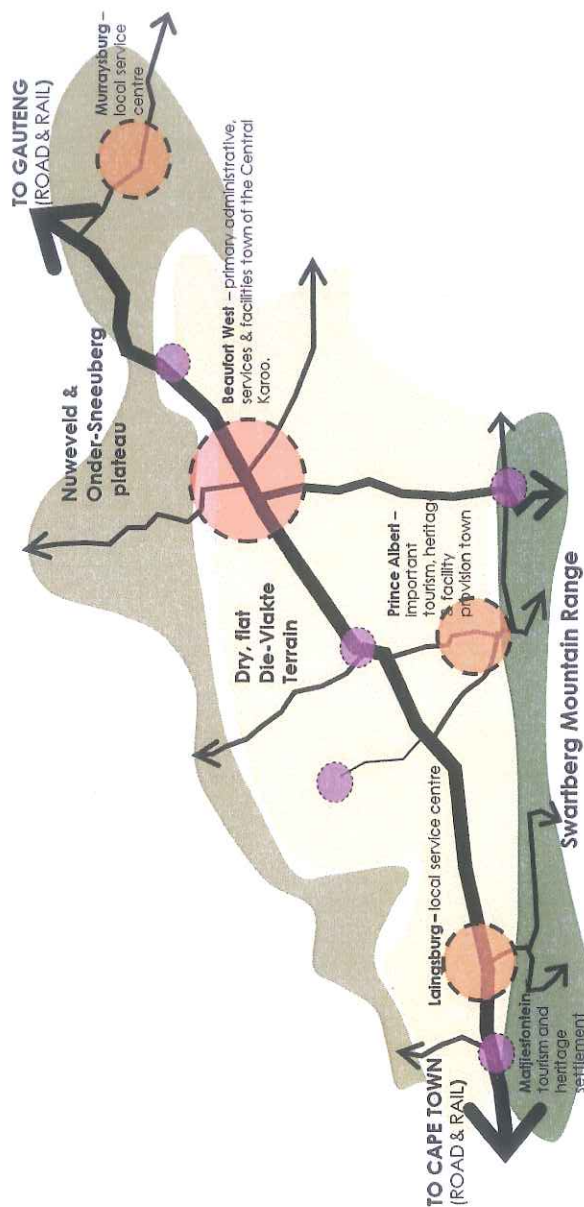


FIGURE 4.8: THE SPATIAL CONCEPT FOR THE CENTRAL KAROO

integrity of biodiversity systems. Prioritise the protection of Critical Biodiversity Areas and Environmental Support Areas from development.

- 2) **Protect and enhance** water **catchment** areas, and **water resources** by demarcating Critical Biodiversity Areas and Environmental Support Areas and preventing inappropriate development within these areas.

- 3) **Capitalise on the tourism appeal** of the various assets that exist in the Central Karoo, such as the heritage appeal of existing town centres, as well as scenic ports and passes. Ensure that all development in the Karoo is compatible with the **sense of place, Karoo character and charm**. This

intrinsic value create lifestyle, tourism and hospitality opportunities, as is seen in Prince Albert, and hence creates employment opportunities and assists in poverty alleviation.

- 4) Ensure the **development and maintenance** of a **road network** that provides good access and mobility for the region, as well as ensure the **regional rail network** is equipped to provide for the movement needs. The N1 corridor is a key economic and social asset in the district which requires regular maintenance and upgrading. Attention should be placed on appropriate measures to ensure road safety in the district.

impactful and critical interventions for the region. These will have to be determined based on the priorities of the District and the transversal nature of the issues. Currently water, gas and energy, and rural mobility are three areas of potential partnership between all spheres of government and civil society.

- 5) Specific focus is also needed on **non-motorised transport** within the region. Non-motorised transport, particularly pedestrian movement, is the primary transport mode among residents. Key interventions for implementation in this area are pedestrian walkways, bridges and underpasses, and cycle paths. An important consideration in the planning of such interventions is safety, security particularly for the most vulnerable members of society including good lighting, visual surveillance as well as shelter from the heat.
- 6) Ensure that **Beaufort West** provides the **primary regional services and facilities** in the region, with Laingsburg and Prince Albert also playing local service centre roles. Business opportunities within these towns are to be maximised to encourage the multiplier effect of investment and expenditure of these towns. From a governance capital investment and maintenance perspective, these towns are the crucial drivers of growth and development opportunities.
- 7) Strongly encourage **value-add, industrial and agri-processing industries** locating in the primary and local service centres to create jobs and add value to the region's agricultural goods and services. Specifically, Beaufort West, Prince Albert, Murraysburg and Laingsburg present opportunities for value-add and agri-processing activities.
- 8) Focus **government investment, facilities, services and housing opportunities** in Beaufort West, Prince Albert and to a lesser extent Laingsburg and Murraysburg. Prevent the creation of new low-income settlements in low growth, job deficient towns that have little prospect of creating employment.
- 9) Seek **partnerships to enhance various interventions**, with a focus on the top 3 most

4.1.4 SETTLEMENT-SPECIFIC SPATIAL CONCEPTS

Although it is recognised that the Central Karoo District Municipality is not responsible for the local-level planning decisions, it is the role of the District municipality to set out the planning principles that must be used throughout the district. This section sets out these spatial principles, building on the Western Cape Provincial Spatial Development Framework.

The **key spatial principles** that must be encouraged in all development, maintenance or protection initiatives are:

1. **Spatial efficiency** – ensuring that land, infrastructure and resources are used efficiently and not wastefully. Land must be used efficiently. Low density development typologies are costly for the municipality to service and create inequitable settlements that are costly to live in

HOUSING DENSITY

Dwelling Units per hectare (du/ha)

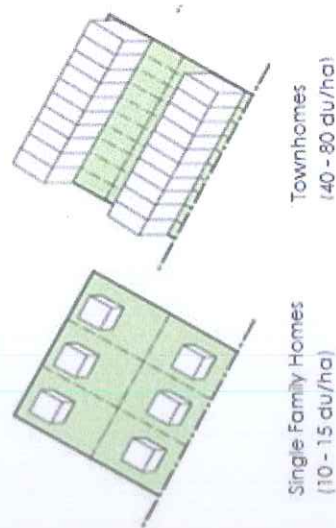


FIGURE 4.9: EXAMPLE OF INEFFICIENT (LEFT) AND MORE EFFICIENT (RIGHT) LAND USE.

1. **Spatial justice and urban restructuring** – ensuring the apartheid legacy is addressed in a way that includes the urban poor in settlement development in places where people can access opportunity, employment, services and facilities. This is important not only for the reasons of redress, but for long term stability and economic growth which requires that **all citizens** are empowered to participate in the economy and ultimately become tax and rate paying citizens. Urban restructuring will require well-located underutilised land to be identified for development of residential, retail and commercial activities. A restructuring zone could potentially be identified for the town of Beaufort West.

2. **Spatial resilience** – creating settlements that are resilient to change and flexible in times of stress. What this practically means for the Central Karoo, is to create water-resilient settlements that focus on diversification of water sources (including rain water capture as a source of water for households) as well as the diversification of the economy, social support, energy generation and multiple other systems and services that the region relies upon.

3. **Walkability** & appropriate densification. Linked to the principles of spatial efficiency and also spatial justice, is the basic yet catalytic principle of promoting walkability and ensuring appropriate densification takes place in the settlements of the Karoo. The goal is to create neighbourhoods and settlements that one can traverse on foot or by bicycle in a safe and dignified manner. The State of Place (2017) identified the following 10 universal urban design principles as central to achieving walkability. The graphic below (Figure 4.10) identifies the importance of density, aesthetics, traffic safety, connectivity, public



spaces, safety, form, recreation, pedestrian amenities and proximity as key success factors to promoting more walkable settlements. Indeed, Karoo settlements already have some of the elements of this and the objective of future development should seek to enhance this, rather than detract from it.

4. **Municipal financial sustainability** – do not undermine the long term financial sustainability of the settlements of the Karoo. Municipal financial sustainability is undermined in the following ways: (1) by investing in new infrastructure that the municipality is unable to afford to maintain in the long term, (2) by not paying sufficient attention to asset and infrastructure maintenance, (3) by allowing low density urban sprawl that requires more infrastructure per housing unit than denser urban forms, (4) by investing only in the creation of non-rates generating indigent households that ultimately grow in relation to rates-generating households. This is not to imply that the local municipalities should not be pro-poor, but they must **also** consider how they will grow their income, rates and ability to service residents.

5. Honour, enhance and build upon the unique architectural charm and tradition of the Karoo – the Karoo has unique vernacular building and housing typologies that can be honoured and enhanced in future growth and development – to make these places even more appealing and desirable for tourism and the development of their own sense of place. These typologies need not be expensive and indeed could be replicated in government subsidy housing initiatives, as well as in gap and market housing development. The figures below illustrate the different housing typologies which should be first and foremost protected, but also proliferated in the Karoo to add to its charm, tourism appeal and character.



FIGURE 4.11A: TYPICAL KAROO-STYLE ROAD-FRONTING TOWN COTTAGE (source: www.karoospace.co.za/karoo-style/, photographer: Chris Marais)



FIGURE 4.11B: ANOTHER TYPICAL KAROO-STYLE ROAD-FRONTING TOWN COTTAGE (source: <http://www.findtripinfo.com/south-africa/northern-cape/karoo.html>)

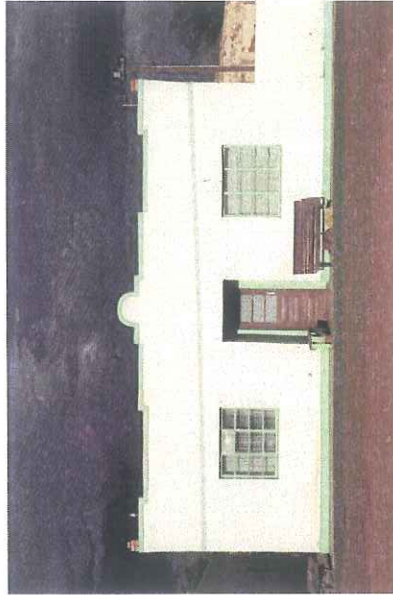


FIGURE 4.11C: TYPICAL KAROO-STYLE ROAD-FRONTING TOWN COTTAGE (source: <http://www.findtripinfo.com/south-africa/northern-cape/karoo.html>)



FIGURE 4.11D: TYPICAL KAROO-STYLE ROAD-FRONTING TOWN COTTAGE (source: <https://www.portfoliocollection.com/travel-blog/kicking-back-karoo-country-style-at-nieuwehuyz>)

4.2 MUNICIPAL-WIDE SPATIAL STRATEGIES

The purpose of this section is to give expression to the vision, strategies, spatial concept and principles set out in the previous sections, by framing a set of policies that must be used to inform land use planning, infrastructure development, rural and urban development decision making within the Central Karoo District municipality.

4.2.1 STRATEGY A: A REGION THAT PROTECTS THE ENVIRONMENT, ENHANCES RESILIENCE AND CAPITALISES ON AND HONOURS THE KAROO CHARM IN SUPPORT OF A VIBRANT PEOPLE AND GROWING THE ECONOMY

The Central Karoo seeks to become a resilient region that can adapt to and mitigate against the negative effects of climate change, increasing temperatures, reduced rainfall and the host of downstream impacts on the economy and society at large. The future vibrancy of the economy and social advances will invariably be rooted in the resilience of the natural environment, society and the economy to a host of negative impacts. This section seeks to set out policies in support of this strategy.

4.2.1.1 POLICY A1: PROTECT CRITICAL BIODIVERSITY AREAS, ENVIRONMENTAL SUPPORT AREAS & NATURAL ENVIRONMENT TOWARDS A RESILIENT CENTRAL KAROO

Designated **Spatial Planning categories (SPCs)** must be taken into account in terms of land use management within the Central Karoo. This, in part, should ensure that Critical Biodiversity Areas (CBAs) and protected areas are conserved and restored. Land use change should always favour rehabilitation

of indigenous species in degraded areas that have the potential to connect protected areas, CBAs and Ecological Support Areas (ESA's).

Policy A1 Guidelines:

(i) Manage land use management in the rural areas of the Central Karoo through the application of **Spatial Planning Categories (SPC's)** as set out in the Western Cape Rural Land Use Planning Guidelines and the Western Cape Biodiversity Spatial Plan (2017), and ensure that all investment in the Karoo landscape seeks to underpin the principles of spatial sustainability and spatial resilience. Greater detail on each SPC layer can be found in the Western Cape Rural Land Use Guidelines. The Central Karoo District Municipality SDF maps sets out development proposals that are in line with the inherent land use suitability of its varying landscapes.

(ii) Protect and conserve important terrestrial, and aquatic habitats (rivers and wetlands) as identified in the Biodiversity Spatial Plan map in Figure 4.13, or identified by more detailed site-specific studies.

(iii) The following mechanisms may be implemented when considering ways of formally protecting endangered and irreplaceable biodiversity. These mechanisms include:

- **Private Land:** involving Stewardship Contract Nature Reserves, Biodiversity Agreements, or Protected Environments;
- **Municipal Land:** Nature Reserve or Municipal Biodiversity Agreement (e.g. City of Cape Town);
- **Forest Nature Reserves** through the Natural Forest Act and Wilderness Areas into Wilderness Act;
- **Title deed restrictions** where land has been designated under the Stewardship Programme or

declared a Nature Reserve or Protected Environment;

- **Contractual National Parks:** the zoning of private properties to Open Space III could be used as a mechanism for conservation in terms of the 2016 DEA&DP Standard Draft Zoning Scheme By-Law. Financial and non-financial incentives have the potential to be linked to the conservation on private land with title deed restrictions.

(iv) In line with WC DEA&DP guidelines for rural land use development, new investment in rural areas should not:

- Have significant impact on biodiversity;
- Alienate unique or high value agricultural land;
- Compromise existing farming activities;
- Compromise the current and future use of mineral resources;
- Be inconsistent with cultural and scenic landscapes within which it is situated;
- Involve extensions to the municipality's reticulation networks;
- Impose real costs or risks to the municipality delivering on their mandate; and
- Infringe on the authenticity of the rural landscape and heritage assets.

(v) The following land uses are permitted per Spatial Planning Category in the Central Karoo District, as per the following Spatial Planning Categories (SPC's):

- **Core 1 Areas: Critical Biodiversity Areas (CBA)** and protected areas, these include habitats classified as highly irreplaceable, critically endangered, or endangered terrestrial (land), aquatic (rivers, wetlands, and estuaries) and

marine habitats. It also includes essential biological corridors vital to sustain their process and pattern functionality. These areas must be regarded as "no-go" for development and must be kept in a natural state, with a management plan focused on maintaining or improving the state of biodiversity. There should be no further loss of natural habitat and degraded areas should be rehabilitated.

- **Core 2 Areas:** Consists of two areas: **Critical Biodiversity Area 2 (Degraded)** and **Ecological Support Area 1**. These areas are in a degraded or secondary condition that are required to meet biodiversity targets, for species, ecosystems, or ecological processes and infrastructure. These areas should be maintained in a natural or near-natural state with no further loss of natural habitat. These areas should be rehabilitated.

- **Buffer 1 Areas:** These areas may be degraded but still **play an important role in supporting the functioning of Core Areas** (either Protected Areas or CBAs), and are essential for delivering ecosystem services. These areas should be restored and/or managed to minimize impact on ecological infrastructure functioning; especially soil and water-related services. Two components of the rural landscape make up Buffer 1 areas:

- **Ecological Support Area 2:** Restore and/or manage to minimize impact on ecological infrastructure functioning; especially soil and water-related services.
- **Other Natural Areas:** Minimize habitat and species loss and ensure ecosystem functionality through strategic landscape planning. Offers flexibility in permissible

land-uses, but some authorisation may still be required for high impact land-uses.

- **Buffer 2 Areas:** This category includes areas designated as **Other Natural Areas**, located in an extensive and/or intensive agriculture matrix (i.e. livestock production) as the dominant land use. The Buffer 2 SPC requires that habitat and species loss is minimized and that ecosystem functionality is preserved through strategic landscape planning. Buffer 2 areas offer flexibility in permissible land-uses, but some authorisation may still be required for high-impact land-uses.

- **Agriculture Areas:** Comprises of existing and potential intensive agriculture footprint (i.e. homogenous farming areas made up of cultivated land and production support areas). It includes areas in which significant or complete loss of natural habitat and ecological functioning has taken place due to farming activities. Existing and potential agricultural landscapes should be consolidated and protected; sustainable agricultural development, land and agrarian reform, and food security should be facilitated and ecosystems must be stabilised and managed to restore their ecological functionality.

- **Settlement Areas:** This category includes all existing settlements, large and smaller towns, villages and hamlets. Settlements are delineated by municipalities in terms of an urban edge or by DEA&DP in terms of the 2014 NEMA Listing Notices as urban areas. The purpose is to develop and manage settlements in a sustainable manner. Wherever possible existing settlements should be

used to accommodate non-agricultural activities and facilities.

The table below, in Figure 4.12, seeks to show how to convert Protected Areas, Critical Biodiversity Areas, Ecological Support Areas and other natural areas to the various Spatial Planning Categories talked about above, as set out in the Western Cape Biodiversity Spatial Planning Map.

The map on the following page, Figure 4.13, seeks to illustrate the proposed Spatial Planning Categories for the Central Karoo, showing:

- **Core 1 Areas** – predominantly in the Swartberg mountains, Karoo National Park, and the riverine areas of the Karoo.
- **Core 2 Areas** – predominantly areas of water importance – around Beaufort West, Nelspoort and Murraysburg.
- **Buffer 1 and Buffer 2 areas** – around all riverine areas in the Karoo.

WCBSF Map Category →	Protected Areas	Critical Biodiversity Area 1 (Terrestrial/ Aquatic)	Critical Biodiversity Area 2 (Degraded)	Ecological Support Area 1 (Terrestrial/ Aquatic)	Ecological Support Area 2	Other Natural Areas (Natural to Near-natural / Degraded)	No Natural Remaining
Spatial Planning Category ↓	PA	CBA 1	CBA 2	ESA 1	ESA 2	ONA	NNR
CORE 1	•	•					
CORE 2			•	•			
BUFFER 1						•	
BUFFER 2					•	•	
AGRICULTURE							•
SETTLEMENT							•

FIGURE 4.12: TABLE SHOWING HOW TO CONVERT A BIODIVERSITY SPATIAL PLAN MAP TO A SPATIAL PLANNING CATEGORY MAP

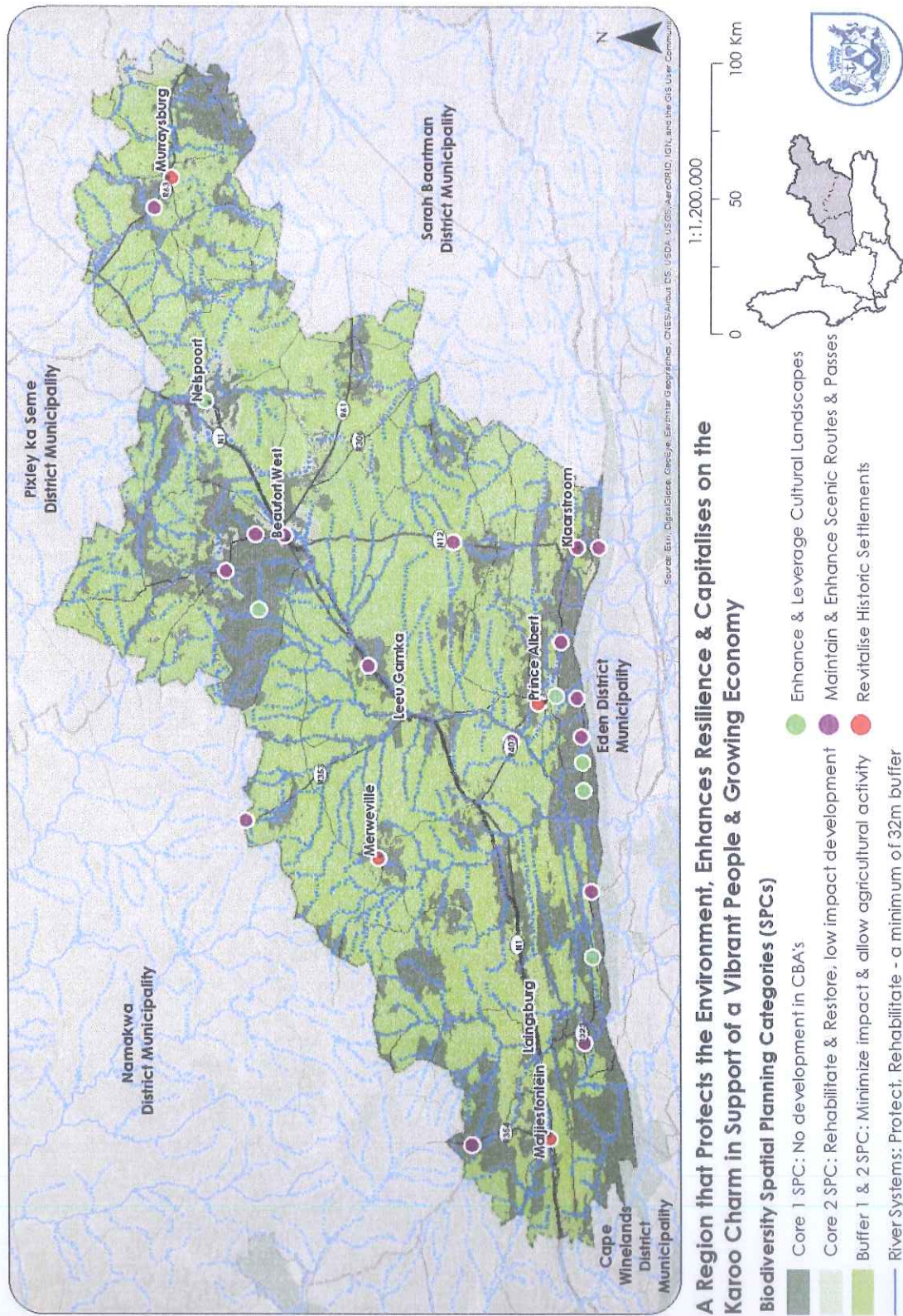


FIGURE 4.13: A REGION THAT PROTECTS THE ENVIRONMENT, ENHANCES RESILIENCE AND CAPITALISES ON AND HONOURS THE KAROO CHARM IN SUPPORT OF A VIBRANT PEOPLE AND GROWING THE ECONOMY

4.2.1.2 POLICY A2: PROMOTE AND DEVELOP A WATER RESILIENT CENTRAL KAROO

Without water, this region is economically, socially and environmentally not sustainable. It can neither support any further growth in population or economy if water is not managed, extracted (from a range of sources) and utilised sustainably. If the status quo remains, the region will continue to experience economic shocks related to water unavailability, inhibiting the chance of the poor in the region to access jobs and ultimately break free from the cycle of poverty. Water is very much the heart of the economy of the region.

Water sensitive design, water availability or water constraints must therefore be considered as part of all land use management changes, urban development, infrastructure expansion or any other process that impacts on water use or availability in the municipality.

'Water wise' planning and design approaches are especially relevant to women in informal settlements who are primarily responsible for fetching water for the household from communal taps and other, sometimes unhygienic sources. Vandalism of infrastructure at communal taps also leads to excessive water losses and leads to stagnant pools of water. Inadequate drainage within informal settlements also makes women more susceptible to picking up illnesses from surface water pollution.

Policy A2 Guidelines:

The district will encourage local municipalities to adapt to water scarcity by:

- i. Developing water and sanitation infrastructure that utilises water re-cycling and reuse.
- ii. Promoting household and farm-scale rain water capturing for non-potable uses.
- iii. Ensuring rainwater tanks are included in new developments of households on erven larger than 120m².
- iv. Regulating borehole use to ensure sustainable use of groundwater systems.
- v. Monitoring ground water resources and implementing effective water reduction techniques when sources are low.
- vi. Ensuring the integrity of valuable rainwater catchment areas, groundwater recharge areas and riverine systems are kept clear of invasive plant species or any use that will either degrade the quality or quantity of water available for use.
- vii. Promoting farming techniques that minimise water use.
- viii. Promoting compact urban development to minimise infrastructure expansion that increases the risks of water loss from expansive water reticulation systems.
- ix. Investing in a maintenance programme that seeks to minimise leaks from municipal water infrastructure.
- x. Relocating informal settlements away from watercourses to prevent flood risk vulnerability and the possible pollution.

4.2.1.3 POLICY A3: TOURISM ENHANCEMENT & PROTECTION OF SCENIC ASSETS

Together with agriculture and agri-processing, tourism is a sector of the economy that can significantly assist in achieving future growth and development in the region, and playing a significant part in providing job opportunities and uplifting the poor out of poverty. The way the region is managed from a built environment perspective can either enhance or degrade the tourism, scenic and heritage potential of the region. It is desirable to ensure that current heritage assets are maintained and enhanced and new built environment assets created in line with existing vernacular architecture and heritage.

The significant scenic and cultural assets that drive growth of the tourism and service sectors have been identified for protection. These include agricultural landscapes and landscape features such as mountains, valleys, passes, rivers, and plains (see **Figure 4.14**). Historical buildings, streetscapes and vistas, such as those in the main street of Beaufort West, Prince Albert, and Murraysburg must also be preserved.

The main cultural heritage and scenic resources as identified in the PSDF and endorsed in this SDF include:

- **Scenic routes and passes:** Seweweekspoort, the Swartberg, Meiringspoort, Gamkakloof, Molteno, Roseberg, Kareedouwberg and other mountain passes.
- **Important historic settlements and heritage assets:** Beaufort West, Prince Albert, Murraysburg, Merweville; and heritage features like Nelspoort Rock Engravings.
- **Important landscapes:** These include the Swartberg Mountain Range, Karoo National Park,

Onder-Sneeuberge, Nuweberge and other mountain ranges and foothills.

The landscape character of these areas and settlements must be safeguarded, and uncompromising development on ridge lines or in important view corridors must not be allowed.

Policy A3 Guidelines:

i. The **PSDF Heritage and Scenic Resources Specialist Study** (2013) provides guidance in terms of the spatial form and character of settlements. These guidelines are adopted in this SDF and should be referred to in land use management decision making.

ii. The development of a settlement (consolidation or growth) should **take the existing** (and sometimes historic) **structure and spatial form** into consideration and **strengthen its character**. This spatial form must be compact and respond to the topography of the landscape.

iii. Manage **all development** in the Karoo (whether rural or urban, high income or low income) in a way that respects and enhances the sense of place, scenic assets and unique Karoo charm.

iv. Promote **vernacular Karoo-style building typologies** in all development – low income housing development could be adapted to have Karoo-style features.

v. When delivering any agri-processing, renewable energy or any infrastructure in rural areas, ensure that key view sheds, vistas and views are not undermined and that, where appropriate, setbacks and screenings (in the form of tree planting) are provided from roads.

vi. Develop and implement a destination and tourism branding and marketing strategy to promote the tourism sector as a key economic assets.

vii. Rejuvenate and invest in the historic settlement cores of each town to make these appealing to tourists, businesses and attract investment into the town centres.

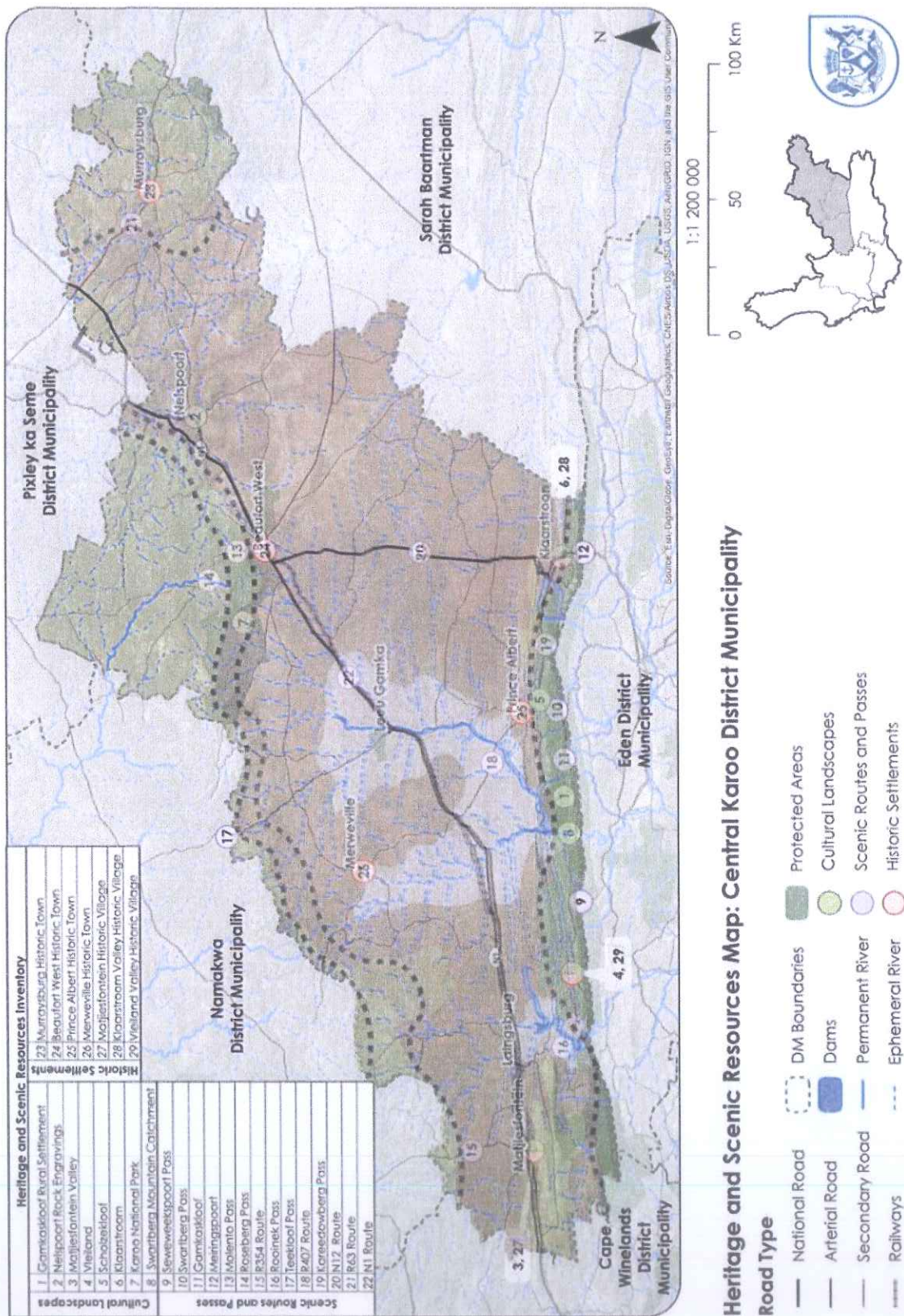


FIGURE 4.14: HERITAGE AND SCENIC RESOURCES IN THE DISTRICT

4.2.1.4 POLICY A4: PROMOTE RESILIENT, SUSTAINABLE AGRICULTURE & AGRI-PROCESSING

The Karoo, being a water scarce region, is also a region with constrained yet valuable agricultural production taking place mostly in those areas where rainfall and irrigation is sufficient to sustain it. These agricultural assets must be safe-guarded and enhanced where feasible.

Agriculture provides opportunities to increase employment and grow products for local and international markets. Agriculture contributes to the region's Gross Domestic Product (GDP), provides food security, and is a basis of many tourism activities. Protecting and promoting the agricultural economy is therefore a priority for the district.

The preservation of agricultural land and the integrity of agricultural operations must be protected and enhanced. The conversion of irrigated, arable land is not supported in terms of this SDF and the Subdivision of Agricultural Land, Act (Act 70 of 1970), section 3 (f), which states that "no area of jurisdiction, local area, development area, peri-urban area or other area ... of the definition of 'agricultural land' in section 1, shall be established on or enlarged so as to include, any land which is agricultural". See Figure 4.15 which shows the extent of the agricultural crops of the municipality.

Development directed at ensuring water security for the agricultural sector and job creation for the inhabitants of the municipality is a priority. In order to achieve this, disaster risk management measures may be implemented in order to protect important agricultural land, resources, and employment that may be lost through flooding, water shortage, and wild fires.

This underscores the need to protect agricultural land as stipulated in the Draft Preservation and Development of Agricultural Land Bill (2016):

- It is in the national interest to **preserve, and promote sustainable use and development of agricultural land for the production of food, fuel, and fibre** for the primary purpose to sustain life further recognising that high value agricultural land is a scarce and non-renewable resource; and recognising that it is in the interest of everyone to have agricultural land protected, for the benefit of present and future generations;

- The sustainable development of agricultural land requires the **integration of social, economic and environmental considerations** in both forward planning and ongoing agricultural land management to ensure that development of agricultural land.

Given the above, the rural landscape and its agricultural resources must be protected and, where sustainable, expanded to create an agricultural economy which is commensurate with the assets and resources found within the district. The potential broadening of production and expansion of agricultural products should also be explored, in order to make a more significant contribution to food security, employment creation and gross value add of the district.

Agri-hubs and agri-processing zones have been identified in the Central Karoo District Rural Development Plan.

Policy A4 Guidelines:

- Encourage water-resilient farming practices that enable more efficient and productive use of water.
- Encourage the use of drought-resistant crops and crop hybrids that tolerate drought conditions and use less water.
- Actively and aggressively promote value-add to all locally produced agricultural products in the region.
- Develop, market and enhance the Karoo brand for meat as well as key fruit and vegetable assets.
- Ensure farmers in the region are granted the necessary rights and building plans on their farms to promote agri-processing and job creation, but in a way that doesn't undermine Karoo charm and character (i.e. designed well and fitting in well with the landscape).
- Provide the necessary farmer support for drought relief, water use efficiencies and agricultural expansion in the region, with a specific focus on emerging farmers.

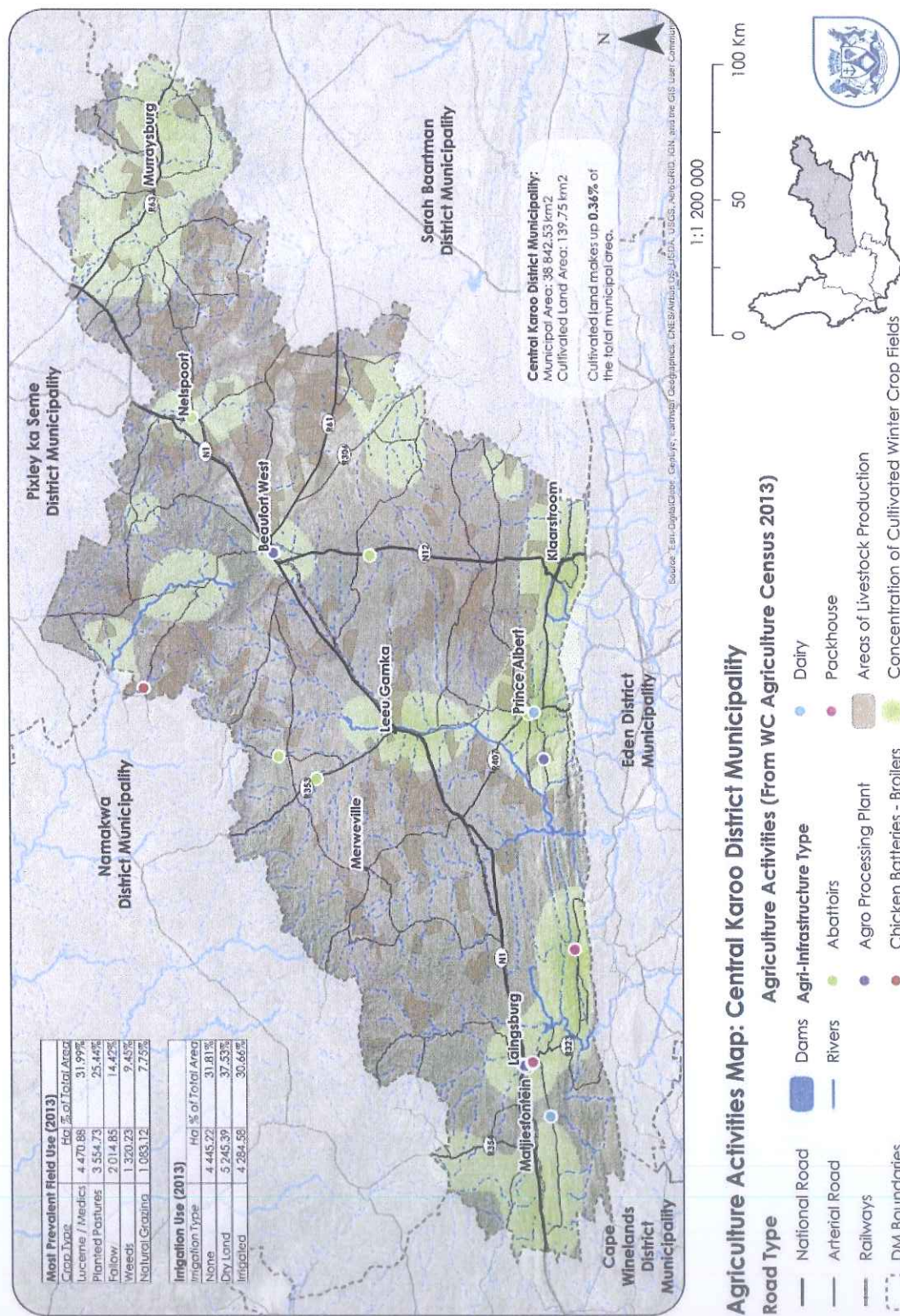


FIGURE 4.15: HEAT MAP OF AGRICULTURAL ACTIVITIES AND AGRICULTURAL INFRASTRUCTURE

4.2.1.5 POLICY A5: SUPPORT AND PROMOTE THE RENEWABLE ENERGY ECONOMY

The Karoo region is blessed with significant solar and wind energy – the prerequisites for successful renewable energy projects. The Central Karoo should leverage these assets to encourage Independent Power Producers to locate in the region, by making and keeping the Central Karoo a well-managed and desirable place to locate.

National government has identified preferred areas or Renewable Energy Development Zones (REDZ's), as well as identified areas for electricity generation. Notwithstanding this, there are vast areas of the Central Karoo outside of these REDZ's that hold potential to generate renewable energy. These areas should not be completely ignored in supporting the future energy resilience of the province and country.

Policy A5 Guidelines:

- i. Actively seek out green energy projects to be located in the region.
- ii. Put in place incentives to encourage green energy operators to locate in the Central Karoo.
- iii. Lobby the National Department of Mineral Resources and Energy to expand the Renewable Energy Development Zones extensively within the Central Karoo, in order to promote renewable energy opportunities.

4.2.1.6 POLICY A6: SHALE GAS DEVELOPMENT (SGD)

Background

The use of hydraulic fracturing (commonly known as "fracking") to extract shale gas deposits in the Karoo Basin is undoubtedly one of South Africa's more contentious proposals in the last decade.

To date, SGD is still only a theoretical proposal within the Karoo Basin. Most notably, there is limited evidence that shale gas reserves can be viably recovered within the Karoo Basin, and estimates of shale gas reserves vary widely.

The extent and viability of the gas reserves in the Karoo Basin, as well as the characteristics of the subsurface environment, is largely unknown. Satisfactory levels of certainty can only be ascertained by means of exploration or drilling into the target shale deposits. If hydrocarbons are encountered, a limited amount of hydraulic fracturing is then undertaken.

Policy Position / Policy A6 Guidelines:

- i. Natural gas represents a significant opportunity for economic development in the Western Cape (and South Africa as a whole).
- ii. With South Africa focusing on its climate change commitments, natural gas should only be regarded as a transition fuel on the way to a reliance on increased renewable energy generation. The use of natural gas must occur in support of renewable energy, not at the cost thereof, or as an alternative thereto.
- iii. A key area of concern around shale gas extraction in the Karoo is the potential impact of

this activity on ground water resources. All impacts of this activity, on ground water resources specifically, **must** be adequately mitigated if it is to proceed in the Karoo basin.

iv. Critical Biodiversity Areas, Environmental Support Areas, Protected Areas and areas with valuable aquifers **must** be protected from shale gas extraction or any other kind of environmentally compromising activity.

v. Shale gas extraction shall not take place within the Square Kilometre Array (SKA) development and activity restriction buffer as set out in the CSIR Strategic Environmental Assessment for Shale Gas extraction or any such buffer that replaces this.

vi. Local communities potentially exposed to negative air quality as a result of shale gas extraction and related activities must be protected by an adequate buffer.

vii. Agricultural, tourism, visual and heritage areas that are deemed sensitive to shale gas extraction must be avoided as per the CSIR's Shale Gas Strategic Environmental Assessment (2017).

viii. Information gathering and evidence-based policy development remain key priorities for providing relevant information upon which decisions can be taken.

ix. When considering Karoo shale gas as a possible source of natural gas, the following must be considered: the anticipated shale gas drilling costs in South Africa may be significantly higher than those of the United States due to the lack of infrastructure; the remoteness of the gas reserves (i.e. far away from the markets); a lack of drilling technology and expertise; an inadequate institutional context (i.e. regulatory framework, human resources and knowledge capacity);

undeveloped markets; and socio-ecological implications, inclusive of latent environmental impacts.

- x. There is inadequate information to support or oppose full or large-scale production of shale gas. The WCG does however, acknowledge that the need for information necessitates the commencement of exploration.

- xi. The WCG supports shale gas exploration conducted in a phased manner, with evidence-based decision making. A prerequisite however, is an improved state of readiness of both government and non-governmental stakeholders prior to the commencement of exploration activities. This includes the improvement of the regulatory and broader institutional framework based on the findings of the SEA process. Significant progress has been made in this regard through, for example, establishing a regulatory framework for hydraulic fracturing, although it is acknowledged that a lot must still be done to review and enhance our institutional framework.

- xii. **Support for the commencement of exploration activities does not constitute support for the production phase of shale gas development.** The need for information is still a primary aim of the exploration phase in understanding the extent of the shale gas resource as well as the receiving environment. Once this information has been considered, an informed (and evidence-based) decision to move into the production phase for SGD can be taken. This is inclusive of the open and transparent consideration of information generated through the exploration phase.

- xiii. Should shale gas prove to be a viable environmentally sustainable source of natural gas, the WCG will consider both the potential risks and

opportunities related to shale gas development, including how these may affect the Karoo environment. The WCG is in the process of evaluating its readiness to respond to SGD demands if exploration goes ahead within the Karoo Basin of South Africa.

4.2.1.7 POLICY A7: LAND REFORM SUPPORT POLICY

The following sets out **five criteria** must be used to identify **Strategically Located Land (SLI)** for land reform in the Central Karoo. These criteria should be generally used to inform the **acquisition** of farms in rural areas for land reform purposes.

1. The farm should fall within the Farmer Production Support Unit (FPSU) catchment area, which indicates its proximity to the nearest town, potential markets and accessibility to the District road network. The FPSU catchment area is defined as being within 60 km of an FPSU.

2. The farm must not fall within a Spatial Planning Category (SPC) or Biodiversity Spatial Plan area that indicates it as sensitive or having significant constraints (i.e. in a core or buffer SPC). Ideally, an Agricultural SPC is considered to be the most suitable land for acquisition purposes. This may not be a consideration if the farm is intended to be used for tourism (non-farming) purposes due to its natural beauty or if the intent is to sustainably harvest biodiversity (such as fynbos).

3. The farm should not contain significant amounts of steep slopes (i.e. slopes above 12%).

4. Land ownership: state owned land should be first considered for land reform purposes, before

privately-owned land is acquired for land reform purposes.

5. The farm must have access, or have the potential to access, sufficient water to sustain its operations.

4.2.1.8 POLICY A8: CENTRAL KAROO CLIMATE CHANGE ADAPTATION AND MITIGATION POLICY

Drought is perhaps the most severe of the suite of potential climate change impacts for the Central Karoo. Extended periods of drought not only have water-related impacts but biodiversity, infrastructure, food and human health, impacts.

Women and other vulnerable groups are especially susceptible to the adverse effects of climate change (e.g. increased walking distances to fetch water and greater risk of mortality from natural disasters).

The Central Karoo SDF will deliberately focus on integrating climate change mitigation (reducing greenhouse gas emissions) and climate change adaptation (creating an environment resilient to the impacts of climate change) into its future growth path.

Policy A8 Guideline for Mitigation:

1. Identify and protect primary carbon sinks in the municipal area – relating predominantly to Critical Biodiversity Areas and Environmental Support Areas as mapped in Figure 4.13 and Figure 4.20;

2. Promote walkable settlements with non-motorised transport infrastructure and pedestrian friendly urban design;
3. Promote renewable energy generation and use; and
4. Promote green-building principles in new builds and retrofitting of buildings;

Policy A8 Guideline for Adaptation:

1. Identify and protect future flood risk zones, and informal settlements. New development must be avoided in these areas;
2. Promote water-efficient infrastructure development to reduce urban and rural water use, as well as reduce consumption and invest in infrastructure renewal and maintenance to reduce leakages;
3. Identify and remove alien vegetation from water catchments to reduce water loss, as well as for fire risk reasons;
4. Promote planting, shade and urban forms that promote urban cooling effects in summer heat waves;
5. Ensure storm water system in urban areas can accommodate flooding conditions effectively;
6. Promote the development of infrastructure that is resistant to increased heatwaves; and
7. Ensure local food production systems are resilient to heatwaves and drought;

4.2.2

STRATEGY B: IMPROVE REGIONAL AND RURAL ACCESSIBILITY AND MOBILITY FOR PEOPLE AND GOODS IN SUPPORT OF A RESILIENT ECONOMY

Access to services and the mobility of the poor are two significant concerns in the region. In addition to this, the existing road and rail infrastructure provides access to markets and serves as the life line for the region – providing a potential market that passes through the N1 corridor daily between Cape Town and Gauteng. The Central Karoo must leverage this asset and ensure that it maximises the economic benefits that such a key movement corridor presents.

4.2.2.1

POLICY B1: N1 ROAD AND RAIL CORRIDOR REVITALISATION

The N1 corridor, consisting of a national highway and underutilised but no less important rail asset, currently contributes significantly to the economy of the region (through money spent in towns by passers-by, at petrol stations, farm stalls, bed and breakfasts and related tourism stop-overs). The rail asset is currently underutilised and in the future, could provide more significant passenger and freight services which the Central Karoo could benefit from, both in terms of connectivity but also people passing through.

The N1 corridor – as a corridor of national importance – must continue to be maintained and enhanced as excellent road infrastructure but also work must be undertaken to revitalise the passenger and freight rail industries. Government must seek innovative ways to ensure rail is revitalised, even if this means reconsidering the regulation, management and operations of the national rail network – allowing private operators to operate on government-owned

infrastructure, unlocking opportunities in the economy.

Policy B1 Guidelines

- i. Maintain and enhance N1 road infrastructure quality in the region;
- ii. Revitalise rail corridor for passenger and freight rail and lobby national government to seek innovative ways to revitalise the rail industry in South Africa through regulatory reform and de-monopolising the industry;
- iii. Invest in and enhance key rail stations such as Beaufort West, Matjiesfontein and Laingsburg railway stations.

4.2.2.2

POLICY B2: TOWN IMPROVEMENT PLANS

As part of both encouraging business activity in the region, as well as encouraging tourism activities and money spent within towns of the region, each town in needs to ensure that it creates an environment conducive to attracting passers-by and businesses to invest in or spend money in these towns. In some instances, beautification programmes could be carried out and in other, infrastructure interventions may be required.

Policy B2 Guidelines

- i. The towns of Prince Albert, Beaufort West, Laingsburg and Murraysburg to carry out basic beautification measures at its entrances and main streets, including cleaning and sanitation services, tree-planting (in drought-tolerant species) and investment in public-walkways and main streets, including infrastructure maintenance.

ii. The measures described above must seek to create proud, distinct, clean and attractive urban spaces through litter, grime, graffiti and weed removal; landscaping and planting; paving and sidewalk regeneration; street furniture installations; lighting improvements; improving safety, security and law enforcement; promoting infrastructure maintenance; as well as putting systems in place for people to report damaged infrastructure and teams in place to respond to this.

iii. Investigate low-cost high-impact measures to increase the appeal of settlements for businesses to invest in as well as to attract tourists, and create employment.

iv. Implement programmes or projects to create and maintain a distinctive character (see Barrydale as an example of innovation in tourism and character creation and enhancement).

4.2.2.3 POLICY B3: CENTRAL KAROO MOBILITY & NON-MOTORISED TRANSPORT POLICY

As has been clearly articulated in the Integrated Transport Plan for the Central Karoo as well as the Central Karoo Mobility Strategy (2013), mobility for the rural poor between settlements is a key social support need. Provincial Government and local government must find ways to provide low-cost mobility solutions to ensure people in the region have access to basic services, facilities, education and employment, in line with the Provincial Sustainable Transport Policy.

Similarly, most people in the settlements walk or cycle to access employment, services, and facilities. This calls for the need for adequate and dignified non-motorised transport facilities to be developed along key routes that are commonly used by pedestrians and cyclists.

Often SDFs do not detail how communities travel between settlements in the absence of public transport. In the case of the Central Karoo, there are vast distances between settlements. Traversing the vast landscape is especially difficult for women from a safety perspective.

Policy B3 Guidelines

- i. Lobby Transnet and PRASA to upscale the rural rail service passing through the region (Shosholozha Meyl) to provide a more regular and reliable services to the region.
- ii. Lobby the implementation of the Central Karoo Mobility Strategy, even if a reduced service thereof, to provide the most basic level of accessibility.

- iii. Invest in rural pedestrian safety, scholar transport safety and non-motorised transport networks in all settlements of the Central Karoo.

- iv. The roll-out of the rural mobility / accessibility strategies must be mindful that vulnerable groups (women, children and disabled) are disproportionately more dependent on the availability of public transport.

- v. Gender disaggregated data sourced from surveys on traveller experiences while cycling, walking and hitch-hiking for example, will give insight about the realities of navigating between towns and must be documented as the reality of residents living in the district.

4.2.2.4 POLICY B4: DISASTER MANAGEMENT & RESILIENCE

The Central Karoo is an extremely water stressed region. The likelihood of future water-related disasters (fire, drought and flooding) remains high, particularly in areas that experience population growth pressures or that are located within flood lines. Similarly, mountain areas and urban areas are subject to fire-related risks. The Central Karoo must work to become more resilient and disaster-ready.

Policy B4 Guidelines

- i. Develop and implement a water resilience plan, including looking at rain water capture, ground water extraction and water reuse as central to future economic growth and sustainability. A variety of water interventions are required at a range of scales (household, neighbourhood and settlement-wide).
- ii. Develop disaster management plans that prepare the region for the consequences of drought, flooding and other disaster risks that the region faces, considering the spatial informants as set out in this SDF being – Critical Biodiversity Areas, Environmental Support Areas, 1:50 year flood lines, steep slopes, aquifers and other spatial assets, opportunities and risks in the Central Karoo.
- iii. Promote water resilient and sustainable agricultural practices that reduce reliance on water as a resource.
- iv. High veld fire risk areas and asset protection zones – which are deemed to be the interface zone between the built environment (i.e. settlements) and the agricultural or natural environment – must ensure adequate fire breaks are considered and implemented.

4.2.2.5 POLICY B5: SETTLEMENT HIERARCHY

The settlement hierarchy of the district is as follows, as shown in Figure 4.16 below:

- 1) Beaufort West as the **Regional Service Centre** of the municipality – providing all of the high-order services, facilities and opportunities associated with a service centre of its nature. This is also the settlement that should receive the bulk on investment from an infrastructure investment, facilities provision perspective. The town to accommodate a mix of residential, commercial, office and public facilities and focus on creating a high-quality public realm and public spaces.
- 2) Prince Albert, Laingsburg and Murraysburg as **major rural settlements**, primarily focussed on providing a more local service centre role to its inhabitants and surrounding farming areas. These towns are primarily tourism and service-oriented settlements that will provide a level of access to lower order facilities and services. Higher order facilities and services will not be located in these settlements. Strategic investment in improving the quality of the public realm of the main streets where most tourism, retail and business activity occurs.
- 3) Merweville, Leeu-Gamka, Matjiesfontein, Klaarstroom and Nelspoort as **minor rural settlements** with limited access to facilities. Investment from the municipality should be to consolidate these areas, rather than expand them, due to municipal financial sustainability concerns.

iterations of this SDF. As a general principle, large rivers should have a buffer zone of a minimum width of 150 m on either side of the river-bank, medium rivers with a zone of 75 m, and smaller rivers with a 32m buffer on each side of the river bank. No development should occur within the 1:100 flood lines of rivers (DEA&DP, 2017). This will ensure that water quality and wildlife habitats are protected. In addition, it will aid in designating where and where no settlements should be developed or expanded and will aid in preventing the dumping of waste and chemicals in rivers.

New development should not be allowed to occur on slopes steeper than 1:4 as the land cleared for development increases erosion and stream siltation. Where development is permitted, it must be associated with sustainable urban drainage design. The design of new infrastructure should consider the higher frequency of flooding associated with extreme weather conditions.

Municipalities are urged to look beyond the public sector, that is, at business and the broader society to fund the suggested initiatives listed above.

As municipalities have to compete against each other for the same funding source, perhaps Municipalities in the district should consider a collective approach.

v. Eco-estates, if ever developed, must be conditioned to ensure ecological fire regimes at the correct intervals.

vi. Landowners in fire-prone areas should be encouraged to establish and / or join a fire protection association.

vii. Vacant properties which are poorly managed and present a fire risk should be identified and measures must be put in place to enhance the management and mitigate against the fire risk of these properties.

viii. Fire risk management zones must be in line with guidelines found within the Ecosystem Guidelines for Environments in the Western Cape (2016). Guidelines for the monitoring, control, and eradication of alien invasive species can be found in Section 76 of the National Environmental Management: Biodiversity Act, 2004 (Act 10 of 2004) ('NEMBA') and Ecosystem Guidelines for Environments in the Western Cape (Fynbos Forum, 2016).

ix. Public land owners must allocate sufficient resources to ensure the management of their land to remove and prevent alien vegetation infestation.

x. Water security and climate change is closely linked to catchment management. The clearance of alien vegetation mitigates potential fire risks and must be seen as a potential job creation opportunity. Initiate and support alien vegetation eradication programmes on the urban periphery, in river catchment areas and Fire Management Areas.

xi. Flood lines should be ground-truthed in the municipality and incorporated into future

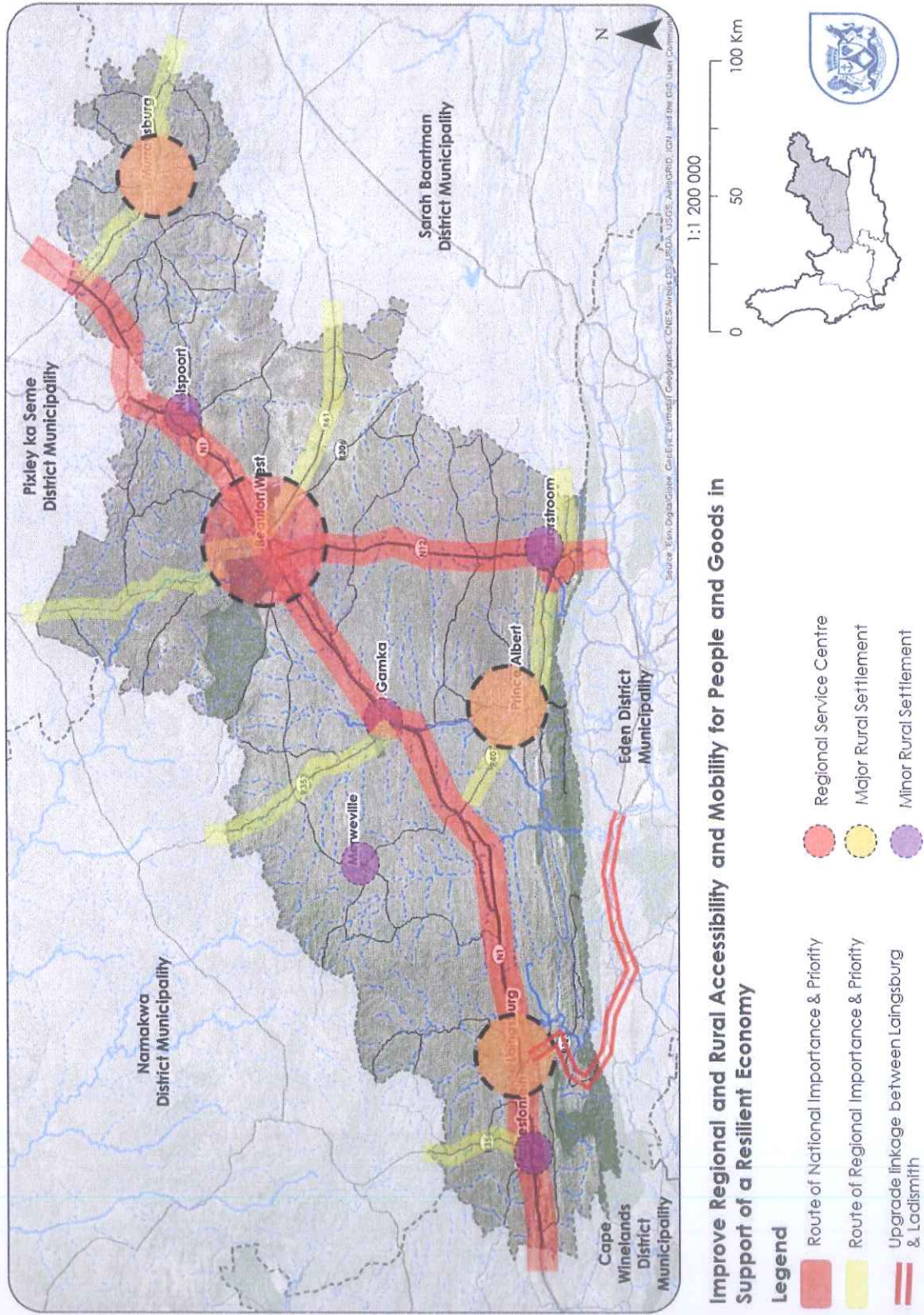


FIGURE 4.16: IMPROVE REGIONAL AND RURAL ACCESSIBILITY AND MOBILITY FOR PEOPLE AND GOODS IN SUPPORT OF A RESILIENT ECONOMY

4.2.3

STRATEGY C: ALLOCATE GOVERNMENT RESOURCES, INFRASTRUCTURE AND FACILITIES IN A MANNER THAT UPLIFTS AND SKILLS PEOPLE AND FOCUSES ON MAXIMISING IMPACT ON THE MOST POSSIBLE PEOPLE, WHILE PROVIDING A BASIC LEVEL OF SERVICE FOR ALL IN THE SETTLEMENTS OF THE KAROO

Allocate government resources, infrastructure and facilities in a manner that uplifts and skills people and focusses on maximising impact on the most possible people, while providing a basic level of service for all in the settlements of the Central Karoo

Government has limited budget, limited capacity to implement and limited land. Therefore, clustering and co-locating facilities and services must be pursued to ensure the maximum utilisation of land and resources, and provide these in the most accessible locations.

4.2.3.1 POLICY C1: FACILITY CLUSTERING & DESIGN PROTOCOL

In order to optimise the use of land, and precious resources, all new facility developments must be multi-functional in nature. Facility types such as sports fields and halls must be designed and located in a way that serves different user groups at different times. A sound management plan will be essential for this approach to be successfully implemented. The principles of space efficiency, multi-functionality and clustering must be applied to all projects related to facility provision.

It is noted that the clustering of facilities benefits primary care-givers (often women) by lessening the burden of travel. Women in South Africa are susceptible to gender-based violence and vulnerability in public spaces and the increased surveillance as a result of the clustering of services can potentially reduce the risk faced by women.

In addition to the above, housing provision on the peripheries of large school sites has the potential to firstly reduce the housing backlog and secondly provide much-needed security and passive surveillance on school sites. See Figure 4.17 and 4.18 below which illustrates how this could be designed.

A report by the Department of Transport and Public Works and CSIR titled "An efficient and coordinated future for government offices in the Western Cape: A spatially-enabled accessibility study" may be used as a guiding tool, especially for the placement of social services.

Policy C1 Guidelines:

- i. Ensure all new facility developments explore co-locating and clustering as a development option.
- ii. Identify land where housing opportunities can be provided around existing schools.
- iii. Ensure facilities are not developed in a land-extensive manner.
- iv. Engage with the National Department of Public Works in consolidating its services and facilities in a single, accessible precinct in a precinct planning exercise.
- v. Promote infill on government-owned land to expand housing or economic development opportunities and intensify overall land use.

The concept illustrated in Figure 4.17 can be seen practically applied in the case of Riebeeek Primary School in Belhar, Cape Town, in Figure 4.18 below.

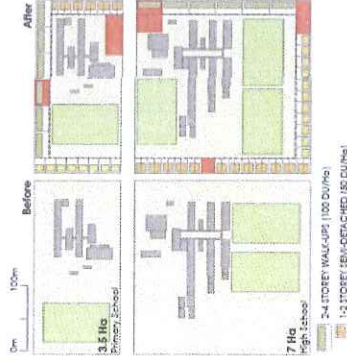


Figure 4.17: How existing school sites can be 'wrapped' with different housing typologies to provide passive surveillance, optimise land use and include other public facilities (WCG, 2015)



Figure 4.18: Riebeeek primary school in Belhar, Cape Town, where housing has been 'wrapped around' the school site and the hall is multifunctional for both school and community use.

4.2.3.2 POLICY C2: HUMAN SETTLEMENT FOCUS AREAS FOR 2020 – 2025

Based on the population projections and housing numbers, the following are the priority investment areas for human settlements, infrastructure and services for **the 5-year period (2020 – 2025)**:

- i. Priority 1: Beaufort West
- ii. Priority 2: Prince Albert
- iii. Priority 3: Laingsburg

The district must **actively desist from providing any more government subsidy housing in areas where there are few to no economic opportunities such as Leeu-Gamka / Bitterwater**. This entrenches the cycle of poverty and creates poverty pockets and poverty traps in the Province. Housing must be provided in areas where there is some reasonable prospect of job creation, economic growth and prospects for the children of the Central Karoo.

The focus in low growth potential settlements must be to improve skills of the persons living in these settlements, as well as to encourage the development of economic opportunities.

4.2.3.3 POLICY C3: ASSET MANAGEMENT & INFRASTRUCTURE MAINTENANCE POLICY

Assets and infrastructure in the Central Karoo, consistent with national and provincial trends, are under severe strain in part due to historic underinvestment in maintenance, rehabilitation and renewal, diminishing budgets, aging assets and infrastructure, and a focus on the creation of new infrastructure rather than on the maintenance of existing infrastructure.

Given the above, the following sets out the asset management and infrastructure maintenance policy that applies to water and sanitation assets, roads and sidewalks, solid waste, building, storm water, and community facility assets.

The core objective of this policy is to bring back focus on asset and infrastructure maintenance, in recognition that no further spatial development, or growth, can be accommodated without the commensurate focus on maintaining those assets and infrastructure that underpins existing urban growth and development.

Policy C3 Guidelines

The district and local municipalities **must** prepare and implement **Asset Management and Infrastructure Maintenance Plans** that are responsive to their mandates and responsibilities (or delegated responsibilities). These asset and infrastructure maintenance plans should:

1. Define **maintenance outcomes** desired per asset / infrastructure class;
2. Identify **all assets** in the Central Karoo District and who is responsible for maintaining (i.e. **develop asset register**);
3. Identify **critical assets** based on the risk and impact of asset or infrastructure failure;
4. Determine the **maintenance options** available and select option that has the lowest life-cycle cost; and
5. Be prepared for any new capital investment infrastructure asset.

Greater detail is available on asset and infrastructure maintenance from various guidelines developed, such as the MFMA Local Government Capital Asset Management Guideline (2008), Guidelines for Infrastructure Asset Management in Local

Government (2007) and International Infrastructure Management Manual (2006).

4.2.3.4 POLICY C4: A SKILLED PEOPLE

Municipalities focus on creating internal skills development plans for employees within the organisation.

Beyond the up-skilling of municipal officials, a clear mismatch exists between the skill set of the people of the Central Karoo when compared to those sectors of the economy that are exhibiting GDP and employment growth.

The trend, as illustrated in section 3.2.8, is that the tertiary sector of the economy makes up over two-thirds of employment opportunities in the economy, and are growing the fastest in relation to new job opportunities. In contrast, manufacturing makes up only 1.6% of all jobs in the economy, which is in decline, whilst the primary sector (and agriculture specifically) make up 23% of all jobs in the Central Karoo, these jobs are generally poorly paid, subject to seasonal variation and fluctuation due to the drought conditions of the Karoo.

Although the District Municipality is not functionally responsible for skilling the people of the Karoo, developmentally, this a critical task in fulfilling its objectives to improve the quality of life of the people of the region, and to drive down unemployment as well as create a virtuous cycle of development.

Stakeholders in the tertiary skills, training and further education sectors should be engaged to ensure the youth and adults are able to access training and skills development opportunities to be able to create and take up employment in these sectors of the economy.

The WCG has identified the following critical occupations for which there is, or will be, high demand, but inadequate supply within **5 priority economic sectors**.

The district should seek to achieve sufficient, appropriately qualified technical and vocational skilled people to meet the needs of prioritised economic growth areas in the Western Cape, which are:

1. Oil and Gas,
2. Agri-processing,
3. Tourism,
4. Energy, and
5. ICT (Broadband).

The Central Karoo will primarily be experiencing job opportunities involved in agri-processing, tourism and energy into the future, with the potential for oil and gas in the medium to long term.

Policy C4 Guidelines:

Based on the above, the Central Karoo should:

- Promote people to participate in the **tertiary economy** – specifically in **retail, trade, catering and accommodation** (i.e. the **tourism sector**), **business and social services**;
- Promote people to enter and create employment opportunities in the **secondary (manufacturing) sector** which is currently barely registering any performance in the region.
- Incentivise the location of public and private tertiary education facilities within the district.

4.2.3.5 POLICY C5: A HEALTHY PEOPLE

The region generally has access to adequate health facilities, however key public health concerns relating to the Central Karoo are food security, malnutrition, teenage pregnancy, drug and alcohol abuse, and above-average HIV/AIDS infection rates.

Many of these are linked to deeper-seated socio-economic issues, however there exists a role for public health awareness, training, and various other public health interventions.

Whilst it is not the role of an SDF to set out these interventions, it is critical that governmental role-players in this space create the necessary public health interventions in this region to address these issues, as again they are key factors in determining spatial growth and development outcomes for the region.

The WCG's Healthcare 2030 sets out the health strategy of the Province, which must be reflected in the Karoo. Some of the priority focus area are:

- 1) Reducing Infectious diseases such as HIV/TB;
- 2) Improving healthy lifestyles;
- 3) Preventing injuries and violence;
- 4) Improving maternal and child health;
- 5) Strengthening women's health;
- 6) Improving Mental Health;

Furthermore, the following are ways to encourage a healthy population from a settlement building and design perspective:

- Promoting safety and public lighting along pedestrian walkways to encourage walking;

- Reduce fire risk by promoting affordable electrification opportunities to those who do not have access to electricity;
- Provide public health education regularly in the district, specifically at truck stops. Similarly, the location of new truck stops should ensure that unsavoury social behaviour is mitigated against by **not** locating these stops too close to areas experiencing high rates of poverty and vulnerability to exploitation;
- Reduce drug abuse in the district through education and awareness programmes;
- Ensure building design, orientation and layout does not undermine public health (i.e. create damp, poorly ventilated environments);

4.2.3.6 POLICY C6: POVERTY ALLEVIATION

Poverty alleviation is rooted heavily in improving education outcomes, expanding access to post-school skills and training, growing the local economy and increasing the number and quality of jobs that are available.

The only sustainable way to reduce poverty is by creating opportunities for upskilling, improving growth and creating jobs. This insight informed the Western Cape Provincial Strategic Plan 2009-2014, and continues to inform the latest drafts for the 2019 – 2024 periods, which seeks to shift resources and energy into creating an environment for growth and job opportunity creation without compromising the state's ability to deliver better outcomes in health, education and social development, and while refocusing efforts to promote social inclusion.

Strategically, the region must ensure all its programmes, projects and actions support these goals, rather than undermine them.

4.2.4

STRATEGY D: PARTNERSHIP-DRIVEN GOVERNANCE AND ADMINISTRATION TOWARDS IMPROVED FINANCIAL AND NON-FINANCIAL SUSTAINABILITY AND RESILIENCE

The Central Karoo District Municipality cannot, alone, address many of the social, economic and environmental issues and opportunities it faces. It requires cooperation and partnership not only with other spheres of government, but also partnerships with civic organisations, private sector business and the public at large to comprehensively address many of the challenges.

This section sets out the key policy interventions required to promote partnership-driven governance in support of implementing the Central Karoo's Spatial Development Framework.

4.2.4.1 POLICY D1: SHARED SERVICE CENTRE FOR THE CENTRAL KAROO

The Central Karoo is a sparsely populated region that can greatly benefit from 'bringing together' the experience, capabilities and finances of the 3 local municipalities under a single umbrella shared service centre for a range of functions, not least of which is the planning function as defined in SPLUMA, LUPA and the local municipal planning bylaws. Such shared service centres could also include provincial regional offices and expertise as well, if this is required.

A Shared Service Centre Model for the Karoo was developed in 2012 but not implemented. **This must be implemented as a matter of priority, specifically for the town planning function, but not exclusively so. All municipalities must budget for this action as a matter of priority.**

The following sets out the professionally qualified town planning capacity within the district. It is clear that a shared service is required to split time between the municipalities, as per the proposed model.

	Number of Professionally registered planners employed	town
Central District municipality	0	
Beaufort West Local municipality	0	
Prince Albert Local municipality	0	
Laingsburg Local municipality	0	

4.2.4.2 POLICY D2: INTEGRATED PLANNING, BUDGETING AND IMPLEMENTATION

The WCG, together with the municipalities of the Western Cape, has implemented an Integrated Work Plan with the intention that all of government seeks to plan, budget and implement in a more coordinated, integrated and sequenced manner. This is in line with the Joint District Approach being used nationally.

Various platforms and engagements take place throughout the year in which integrated planning, integrated budgeting and integrated implementation are reported on and should take place. The Central Karoo DM should use these forums to ensure the implementation of its Integrated Development Plan and Spatial Development Framework.

Various annual engagements are set out in the Integrated Work Plan (2018), as shown in Figure 4.19, which in short are:

- **Provincial Strategic Planning in July** – ensuring provincial alignment at the strategic label;
- **Provincial Top Management & Municipal Managers engagement in September** – ensuring provincial and municipal planning engagement over strategic planning alignment;
- **Integrated Municipal Engagements** (IDP Indaba 1) in **October / November** – ensuring strategic and technical alignment between provincial government and municipal government;
- **Provincial Government Medium Term Expenditure Committee (PGMTEC) 1 & 2 in November** and **January** for provincial budget alignment; and

- **Local Government Medium Term Expenditure Committee (LGMTEC) engagements in April / May** to ensure municipal budget alignment.

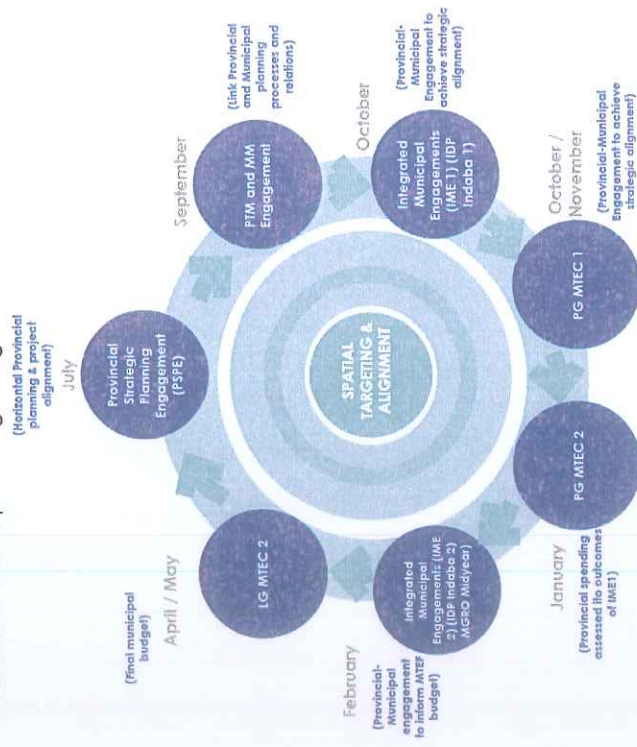


FIGURE 4.19: THE INTEGRATED WORK PLAN AS AN ANNUAL CYCLE

4.2.5 Municipal wide composite map

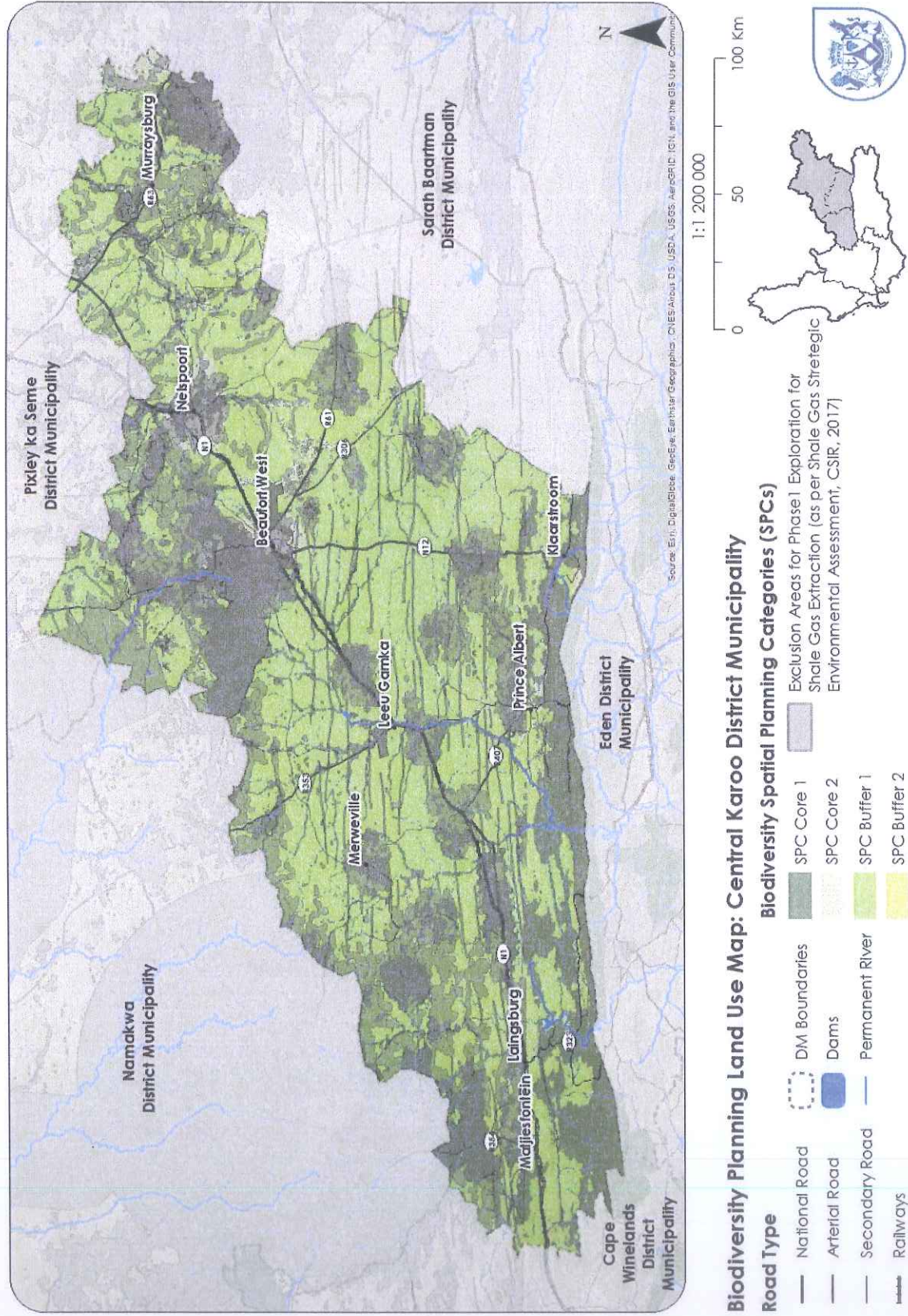


FIGURE 4.20: COMPOSITE SPATIAL DEVELOPMENT FRAMEWORK FOR THE CENTRAL KAROO INDICATING SPATIAL PLANNING CATEGORIES

CHAPTER 5: IMPLEMENTATION FRAMEWORK

5. IMPLEMENTATION FRAMEWORK

The implementation requirements of a District SDF are different from a local SDF primarily because district municipalities do not possess the same powers and are not responsible for functions that local municipalities are. For example, the Central Karoo district municipality does not preside over the land use management function or provide any local infrastructure or local service functions such as water reticulation, waste water treatment, storm water or electricity reticulation. Furthermore, district municipalities do not have the capability to generate rates income, and are dependent on the division of revenue as determined by National Treasury.

As a result of this, this SDF will not contain a Capital Expenditure Framework for the provision of basic municipal infrastructure and services at the local (town-level) scale, but will focus on the various implementation requirements at the regional (district) scale that are required to implement the SDF.

5.1. IMPLEMENTATION REQUIREMENTS

The Spatial Planning and Land Use Management Act, 2013 (Act 16 of 2013) requires that MSDF's include an Implementation Plan that contains the following:

- (i) Sectoral requirements, including budgets and resources for implementation;
- (ii) Necessary amendments to the Municipal Zoning Scheme By-Law. As this is not a

function of the district SDF, this is not applicable;

- (iii) Specifications of institutional arrangements necessary for implementation;
- (iv) Specification of implementation targets, including dates and monitoring indicators; and
- (v) Specification where necessary, of any arrangements for partnerships in the implementation process.

The Department of Rural Development and Land Reform's SDF Guidelines also guides the implementation framework requirements.

5.1.1. INSTITUTIONAL ARRANGEMENTS

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 state-owned 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 (in particular 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. In particular, the projections around adequate social facility provision must be considered.

5.1.2.INPUTS INTO SECTOR PLANS

The MSDF is a long-term, transversal planning and coordination tool and a spatial expression of the Central Karoo Municipality's vision. While existing sector plans give context to the formulation of the MSDF, strategically and spatially, the sector plans should be led by the MSDF. To this end, with the adoption of this MSDF for the Central Karoo District Municipality, when the municipality's sector plans are reviewed, the MSDF must be a key consideration or framework for such a review. This is important to ensure alignment and for the sector plans to realise their full potential as implementation tools of the MSDF. The table below summarises the Central Karoo District Municipality's sector plans, their status and implications of the MSDF for these plans.

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.

Sector Plan	Status & SDF Relationship
Central Karoo Integrated Transport Plan	Finalised in 2016, and currently under review. There is a need for Non-Motorised Transport (NMT) master plan (mapped) to be developed and implemented for each local municipality and settlement in the Karoo. The ITP in its current format is generic from an NMT planning perspective and does not assist in detailed planning for NMT routes or priorities. There is no comprehensive network shown in the ITP. There is a need to gather Gender disaggregated data from surveys on

Sector Plan	Status & SDF Relationship
	traveller experiences while cycling, walking and moving around in the District, to give insight about the realities and needs of people navigating between towns. Gender disaggregated data could analyse why men and women make trips to particular places at a particular time, which will provide a better understanding about functional relationships between settlements and larger towns and assist to respond to the transport needs of the people in a gender responsive manner.
Central Karoo Local Economic Development Strategy	Approved in 2008. Review underway, which should take into account (1) the desire to protect and enhance landscape and sense of place assets for tourism, (2) the latent tourism opportunities present in the region, (3) the potential that this region has to create unique and special tourism, leisure and holiday experiences, (4) enhancing the agri-tourism opportunities and experiences and (5) the need for the towns of the Karoo to aim to become clean, well-maintained and desirable Karoo towns and spaces that create tourism, retail and related economic opportunities.
Disaster Management Plan	Approved in 2012. Future revisions must consider spatial aspects of drought-mitigation and building increased resilience to drought and fire, such as the need to proactively protect valuable water catchment areas from alien vegetation invasion. Riverine systems to be, as far as possible, rehabilitated and aquifer resources and recharge areas to be protected from incompatible land uses.

Sector Plan	Status & SDF Relationship
Climate Change Response Strategy	Approved and to be reviewed in June 2020. See the entire policy and proposals section of this SDF for implications for Climate Change Adaptation Plan.
Air Quality Management Plan	Approved in 2012. Potential impacts of air quality related to mining, shale gas extraction to be considered in review.
Integrated Water Management Plan	Approved in 2016. Future updates must indicate the areas identified in this SDF as needing protection or rehabilitation, such as riverine systems, catchment areas or aquifer recharge areas.

5.1.3. PROVINCIAL AND MUNICIPAL EXPENDITURE IN THE DISTRICT (2019/20)

As reflected on in the *Overview of Adjusted Provincial and Municipal Infrastructure Investment* released by Provincial Treasury (Western Cape Government, 2019), the following sets out where the Western Cape Government and municipalities within the district will be spending money on infrastructure in the 2019/20 financial year.

The WCG and the municipalities of the Central Karoo District will collectively spend R226.7 million on infrastructure within the geographical boundaries of the District in 2019/20. This equates to a 31.1 per cent increase on the estimated R173.0 million budgeted for in the main appropriations budget.

Roads

Maintaining the road network in the District is of critical importance. Although national government is responsible for the primary N1 road, provincial government plays a crucial role to maintain adjacent district roads. To this extent, the majority of provincial infrastructure spend within the Central Karoo will in 2019/20 be applied towards road transport projects (economic infrastructure). An amount of R78.9 million has been committed as part of the WCG adjustments budget (up from R76.8 million as part of the main appropriation) to fund initiatives relating to routine gravel road maintenance, resealing as well as the construction of blacktop/tar roads.

Notable projects include maintenance to main roads traversing the district (R24.7 million), re-graveling of district roads (R23.1 million) as well as the re-graveling of the Seweweekspoort Pass (R21.0 million) within the jurisdiction of the Laingsburg Municipality. The

municipalities of the Central Karoo district will in 2019/20 contribute R7.8 million from its collective capital budgets towards the road transport function (inclusive of storm water infrastructure). This amount, which originates exclusively from contributions made by the Beaufort West and Prince Albert municipalities, down from the R9.1 million envisaged for 2019/20 as part of the 2018/19 adopted budgets.

The collective provincial and municipal capital investment towards road transport will in 2019/20 amount to R86.7 million, the majority of which (as illustrated above) originates from provincial spend.

Human Settlements

From a social infrastructure perspective, the provincial allocation for 2019/20 almost doubled from R45.2 million to R80.8 million (78.8 per cent increase) in the adjustments budget. The significant increase can be attributed to an additional R37.0 million Human Settlements Development Grant (HSDG) allocation that has been appropriated towards the construction of top structures (houses) in Beaufort West.

Health

A slight decrease has been made to the provincial allocation towards the health function (from R28.6 million to R27.2 million) due to revised projections for upgrades and additions to the Laingsburg Clinic.

Social Infrastructure

Municipal capital contributions towards social infrastructure (R2.0 million) is mostly limited to social and community development initiatives within Beaufort West, specifically applied towards upgrades to cemeteries in Beaufort West, Nelspoort, Murraysburg and Merweville as well as upgrades to the library in Kwa-Mandlenkosi.

Trading Services: Electricity, Water & Sanitation, Cleansing & Solid Waste

Funding towards basic service delivery infrastructure is the prerogative of local municipalities. The municipalities of the Central Karoo collectively aim to spend R37.0 million on trading services in 2019/20 which amounts to a slight increase from the tabled budgeted amount of R36.8 million.

Electricity

The majority of the trading services allocations will be directed towards electricity services (R21.3 million) to expand the current basic service delivery network to new housing developments and to eradicate backlogs. Many of the towns throughout the District currently have aging electricity networks that require maintenance, upgrades and in certain cases total replacement.

Water

A notable portion (R10.7 million) of the municipal trading service budget will also be directed towards the water services function, mostly to mitigate the effect of the drought. Despite increased rainfall across most of the Province towards the end of 2019, the drought appears to have intensified in the Central Karoo. The expectation is therefore that the municipalities of the Central Karoo District will increase allocations towards water services over time.

Notable infrastructure projects in the Central Karoo, based on the above budgets are:

1) Health Projects:

- Prince Albert Ambulance Station - upgrade and additions including wash bay, anticipated to be completed in 2020/21.

- Beaufort West Hospital – rationalisation of services, anticipated to be completed in 2023/24.
- Nelspoort Hospital – Repairs to wards, anticipated to be completed in 2020/21.
- Laingsburg Clinic - Health Technology upgrades and additions, anticipated to be completed in 2021.
- Beaufort West Kwamandlenkosi Clinic - Health technology general upgrade and maintenance, anticipated to be completed in 2021.
- Laingsburg Forensic Pathology Lab - Health technology general maintenance, anticipated to be completed in 2021.

2) Human Settlements Projects:

- Beaufort West, site S1: 883 Sites – IRDP programme;
- Beaufort West, Essopville site G2: 67 sites – IRDP programme;
- Beaufort West, Murraysburg: 220 sites – IRDP programme;
- Prince Albert: 451 services – IRDP programme;

5.1.4.IMPLEMENTATION ACTIONS EMANATING FROM THE CENTRAL KAROO MSDF

The actions or projects and proposed timeframes outlined in the table below are the key actions emanating out of the policies set out in Chapter 4.

The municipality will have to undergo a priority-setting exercise, and re-visit this list on an annual basis and as part of the IDP review process, to determine if new priorities emerge and if the priorities highlighted below remain priorities, or have been implemented.

ACTION or PROJECT	BUDGET	TIME FRAME	ROLE-PLAYERS
1. Ensure that Spatial Planning Categories, based on the latest Western Cape Biodiversity Spatial Planning information, are applied in land use planning decision making within the Central Karoo as per Policy A1. This may require local SDFs to be amended to include new Critical Biodiversity Area data.	Cost of employment (in relation to land use management decision making) Amendment of local SDF – R1.5million	Immediate and ongoing Between 2020 and 2024	Central Karoo District municipality Beaufort West Local Municipality Laingsburg Local Municipality Prince Albert Local Municipality Support from Department of Agriculture, Land Reform and Rural Development and Department of Environmental Affairs and Development Planning
2. Ensure that all efforts towards building water resilience in the Central Karoo, and responding to the persistent drought conditions, take into account proposals of Policy A2 around building water resilience in the Karoo.	Proposals impact on local and provincial budgets for infrastructure relating to water and water infrastructure Municipalities are urged to look beyond the public sector, that is, at business and the broader society to implement the suggested initiatives listed under Policy B4	Immediate and ongoing	Central Karoo District Municipality Beaufort West Local Municipality Laingsburg Local Municipality Prince Albert Local Municipality Provincial Department of Transport and Public Works National Department of Water and Sanitation

ACTION or PROJECT	BUDGET	TIME FRAME	ROLE-PLAYERS
3. Rejuvenate and invest in historic settlement cores of each town (specifically Beaufort West, Prince Albert, Laingsburg and Murraysburg) to make these appealing to tourists, business and attract investment into town centres by developing Town Improvement Plans.	Budget to be determined per town but basic cleansing and municipal services to be covered by operational costs of each local municipality	2020 – 2025 and ongoing	Beaufort West Local Municipality Laingsburg Local Municipality Prince Albert Local Municipality Business chambers and local civic interest groups
4. Incentivise and lobby for the expansion of Renewable Energy Development Zone in the Central Karoo.		2020 – 2025	Department of Mineral Resources and Energy
5. Establish a Central Karoo Shared Service Centre for municipal planning and possibly a GIS function, and potentially other functions, within the Central Karoo.	R375 000 establishment cost R1.5million annual running cost (based on the Business Plan for the implementation of Shared Services in the Central Karoo)	2020 – 2025	Central Karoo District Municipality Beaufort West Local Municipality Laingsburg Local Municipality Prince Albert Local Municipality
6. Ensure application of Central Karoo SDF composite map (figure 4.20), including associated Spatial Planning Categories, in large scale infrastructure or development projects in the Karoo (such as land use approvals for shale gas extraction).	Cost of employment	Immediate and ongoing	Beaufort West Local Municipality Laingsburg Local Municipality Prince Albert Local Municipality
7. Support the Province to Lobby for the reinvigoration of the railway lines serving passenger and freight between Gauteng and Cape Town.		2025	PRASA Transnet Central Karoo DM WCG Department of Transport & Public Works

ACTION or PROJECT	BUDGET	TIME FRAME	ROLE-PLAYERS
8. Lobby Provincial Government for the implementation of the Central Karoo Mobility Strategy (subsidized public transport service for the Central Karoo).	R10 million for operational subsidy	2025 - 2030	Office of the Premier Department of Transport and Public Works Central Karoo District Municipality
9. Review and update the District's Disaster Management Plan. Ensure that all potential risks are identified and a practical implementation plan is developed and that all players who will be called on in the event of a disaster is aware of their roles and responsibilities.	To be determined by functionaries	2020 - 2025	Central Karoo District Municipality Department of Local Government
10. Ensure the District Municipality and all local municipalities develop and implement asset management and infrastructure maintenance policies and plans as per guideline C3 to ensure all infrastructure and assets are well maintained.	To be determined by functionaries, but to be done as part of engineering master plan development process		Central Karoo District Municipality Beaufort West Local Municipality Laingsburg Local Municipality Prince Albert Local Municipality
11. Develop and implement a Central Karoo Skills Strategy to upskill people of the Central Karoo	To be determined by functionaries	2020 - 2025	Department of Higher Education Central Karoo District Municipality
12. For take up in the Integrated Transport Plan: Gather Gender disaggregated data from surveys on traveller experiences while cycling, walking and moving around in the District, to give insight about the realities and needs of people navigating between towns. Gender disaggregated data could analyse why men and women make trips to particular places at a particular time, which will provide a better understanding about functional relationships between settlements and larger towns and assist to respond to the transport needs of the people in a gender responsive manner.	As part of ITP process & budget	2020-2025	Department of Transport and Public Works Central Karoo District Municipality Beaufort West Local Municipality Laingsburg Local Municipality Prince Albert Local Municipality

ACTION or PROJECT	BUDGET	TIME FRAME	ROLE-PLAYERS
13. Develop an urban design guideline for the Central Karoo that assists local municipalities in honouring, enhancing and building upon the unique architectural charm and tradition of the Karoo through its building plan and development management functions.	R1million	2020 - 2025	Department of Environmental Affairs and Development Planning Central Karoo District Municipality Beaufort West Local Municipality Laingsburg Local Municipality Prince Albert Local Municipality

5.1.5.ROLE OF THE PRIVATE SECTOR

The following sets out the areas of action where businesses and the private sector could either lead or play a significant role in implementing aspects of the Central Karoo MSDf:

1. Much of the **Critical Biodiversity Areas** and riverine systems that need to be **protected or rehabilitated** are located on private farm land. Farmers will play a role in ensuring the integrity of these ecological systems remain intact into the future.
2. **Water resilience** will require residents, private land owners and businesses to change their consumption behaviours, use of water and also to use ground water and rain water responsibly.
3. New **tourism opportunities**, and enhancement of existing tourism opportunities, will be primarily driven by the private sector, together with creating tourism experiences that reflect and build the local Karoo brand.

4. **Agri-processing and agricultural expansion** and resilience will be driven by the private sector.

5. **Renewable energy opportunities** will be driven by private sector businesses and Independent Power Producers.

6. The development and implementation of **Town Improvement Plans** should be partnership based between local municipalities and local businesses, civic organisations and retailers to improve the main business centres and streets of the towns identified.

5.1.6.POSSIBLE PARTNERSHIPS

Key potential partnerships in driving elements of this MSDf forward are:

1. **Town Improvement Plans** and basic urban management improvements within the town centres of the Karoo towns will require effort, coordination and partnerships between local municipalities, as the lead organisations, local business, civic organisations and ratepayer's associations.

2. A potential **shared service centre** for various municipal functions, such as the municipal planning function, as well as other functions that will benefit from sharing budget, expertise, resources and time between the district municipality and local municipalities.

5.1.7.LOCAL MUNICIPAL SPATIAL PLANNING INPUTS

The following sets out the directives to be addressed and included in the Local MSDf's, and where applicable, the Integrated Development Plan (IDP) of both the District and local municipalities:

1. Inclusion of the new **Western Cape Biodiversity Spatial Plan** information, as reflected in the updated Spatial Planning Categories in Figure 4.20, must be incorporated into the local MSDf's;
2. The **strategies and policies in the Central Karoo MSDf** should be reflected in the strategies and policies of local MSDf's, and associated actions and projects. This includes Policies A1 to A8 , B1 to B5, C1 to C6, and D1 to D2.

3. The latest credible **population projections** should be incorporated within local MSDf's;
4. **Water resilience**, as reflected in Policy A2 must be reflected in all local MSDf's;
5. The **settlement specific spatial concepts** must be reflected in the proposals and intent of the local MSDf's.

5.2. CONCLUSION

At the beginning of the process in 2018, the Central Karoo District Municipality sought to update and amend its 2014 Spatial Development Framework in order to bring it in line with the 2017/18 4th Generation Integrated Development Plan, as well as to update it to include the latest intelligence as it relates to the region.

Some of the key changes in the SDF relate to:

- Updated Critical Biodiversity Area information and Biodiversity Spatial Plans;
- New population growth figures, economic data, and service level data; and
- An evolved policy position on shale gas extraction.

Perhaps most importantly, municipalities within the district must be responsible with where they locate housing and infrastructure investment. This is to both ensure that municipal financial sustainability is advanced, but also to ensure that people are located in settlements that have the legitimate chance of creating employment opportunities.

The foreseeable future is set to be one of increasing austerity, with continued cuts from National Treasury a likely possibility. The Central Karoo must therefore respond to this sensibly, responsibly and ensure limited resources are spent wisely and strategically.

This MSDP has attempted to address all of these and other issues and opportunities towards its spatial vision of **working together in sustainable spatial development and growth towards a resilient Central Karoo.**

References

- COGTA. (2016). IUDF. Integrated Urban Development Framework.
- CSIR. (2016). *Strategic Environmental Assessment for Shale Gas in the Central Karoo*.
- Central Karoo District Municipality. (2014). *Central Karoo Spatial Development Framework*.
- Central Karoo District Municipality. (2016). *Central Karoo Integrated Transport Plan*.
- Local Government: Municipal Systems Act, 2000 (Act 32 of 2000).
- Department of Rural Development and Land Reform (DRDLR). (2014). *Spatial Development Framework Guidelines*.
- Department of Rural Development and Land Reform (DRDLR). (2017). *Central Karoo Rural Development Plan*.
- Department of Rural Development and Land Reform (DRDLR). (2019). *Draft National Spatial Development Framework (NSDF)*.
- Price Waterhouse Cooper (PWC). (2014). *Western Cape Population Projections 2011 – 2040*.
- SANBI. (2016). *Ecosystem Guidelines for Environments in the Western Cape*.
- Spatial Planning and Land Use Management Act, 2013 (Act 16 of 2013).
- Statistics South Africa. (2011). *Census 2011*.
- The State of Place. (2019). *The 10 Urban Design Dimensions for Walkability*: <http://www.stateofplace.co/state-of-place-profile/>
- Western Cape Land Use Planning Act, 2014 (Act 3 of 2014).
- Western Cape Government. (2016). *Assessment of the Municipal Integrated Waste Management Infrastructure in the Central Karoo*.
- Western Cape Government. (2013). *Central Karoo District Energy Consumption and CO₂ Emissions Report*.
- Western Cape Government (WCG). (2017). *Western Cape Human Settlements Framework: A Living Cape*.
- Western Cape Government (WCG). (2019). *Western Cape Rural Land Use Planning and Management Guideline*.

- Western Cape Government (WCG). (2014). *Western Cape Provincial Spatial Development Framework*.
- Western Cape Government (WCG). (2013). *Western Cape Provincial Spatial Development Framework: Heritage and Scenic Resources Specialist Study*
- Western Cape Government (WCG). (2018). *Municipal Economic Review and Outlook (MERO)*.
- Western Cape Government (WCG). (2016). *Central Karoo Local Government Socio-Economic Profile (LG-SEP)*.
- Western Cape Government (WCG). (2017). *Western Cape Biodiversity Spatial Plan*.
- Western Cape Government (WCG). (2014). *Western Cape Development Parameters Guideline*.
- Western Cape Government (WCG). (2013). *Central Karoo Mobility Strategy*.
- Western Cape Government. (2019). *Overview of Adjusted Provincial and Municipal Infrastructure Investment*.

www.municipalmoney.gov.za – Financial Health Indicators for the Central Karoo

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<https://www.western-cape-info.com/provinces/town>