SWARTLAND
SPATIAL DEVELOPMENT FRAMEWORK
2023 -2027

CREATED BY

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List of Acronyms	
CBA	Critical Biodiversity Areas
CML	Coastal Management Line
CPZ	Coastal Protection Zone
D	Directives
DAFF	National Department of Agricultural, Forestry and Fisheries
DEADP	Provincial Department of Environmental Affairs and Development Planning
ESA	Ecological Support Areas
FPSU	Farmer Production Support Unit
GCM RSIF	Greater Cape Metro Regional Spatial Implementation Plan
GS RSIP	Greater Saldanha Regional Spatial Implementation Plan
IDP	Integrated Development Plan
IDZ	Industrial Development Zone
ICM	Integrated Coastal Management Act, Act 24 of 2008
ITP	Integrated Transport Plan
IUDF	Integrated Urban Development Framework, 2016.
LED	Local Economic Development Plan
LUPA	Land Use Planning Act, Act 4 of
MRF	Material Recovery Facility
MSA	Municipal Systems Act, Act 32 of 2000
NARYSEC	National Rural Youth Services Corps
NDP	National Development Plan
NEMA	National Environmental Management Act, Act107 of 1998
NNR	No Natural Remaining
ONA	Other Natural Areas
PG	Planning Guidelines
REID	Rural Enterprise and Industrial Development
RSEP	Regional Social
RSIP	Regional Spatial Implementation Plan
SALA	Subdivision of Agricultural Land Act, Act 70 of 1970
SDF	Spatial Development Framework
SEDA	Small Enterprise Development Agency
SDF	Spatial Development Framework
SPC	Spatial Planning Categories
SPLUMA	Spatial Planning and Land Use Management Act, Act
GS RSIF	Greater Saldanha Bay Regional Spatial Implementation Plan
WCBF	Western Cape Biodiversity Framework
WCDoA	Western Cape Department of Agriculture
WC DRDP	West Coast District Rural Development Plan
WCPSDF	Western Cape Provincial Spatial Development Framework
IWMP	Integrated Waste Management Plan
WWTP	Waste Water Treatment Plant
WTW	Water Treatment Work

CHAPTER 1: Purpose of the SDF, Principles and Tools

This chapter states the purpose of the Spatial Development Framework; describes the principles required to achieve the desired spatial form and outlines the project plan to implement the directives derived from the SDF.

1.1 Purpose

The purpose of the Swartland Spatial Development Framework (SDF) is to guide growth and development in the Swartland's municipal area in a sustainable manner. Hence, future growth, development and land use planning will embrace the spatial vision and principles to protect and develop integrated, sustainable settlements and liveable environments and enable economic and social prosperity.

This rewritten version of the Swartland SDF is for the 2022 – 2027 period.[1]

Figure 1: Spatial context of the Swartland

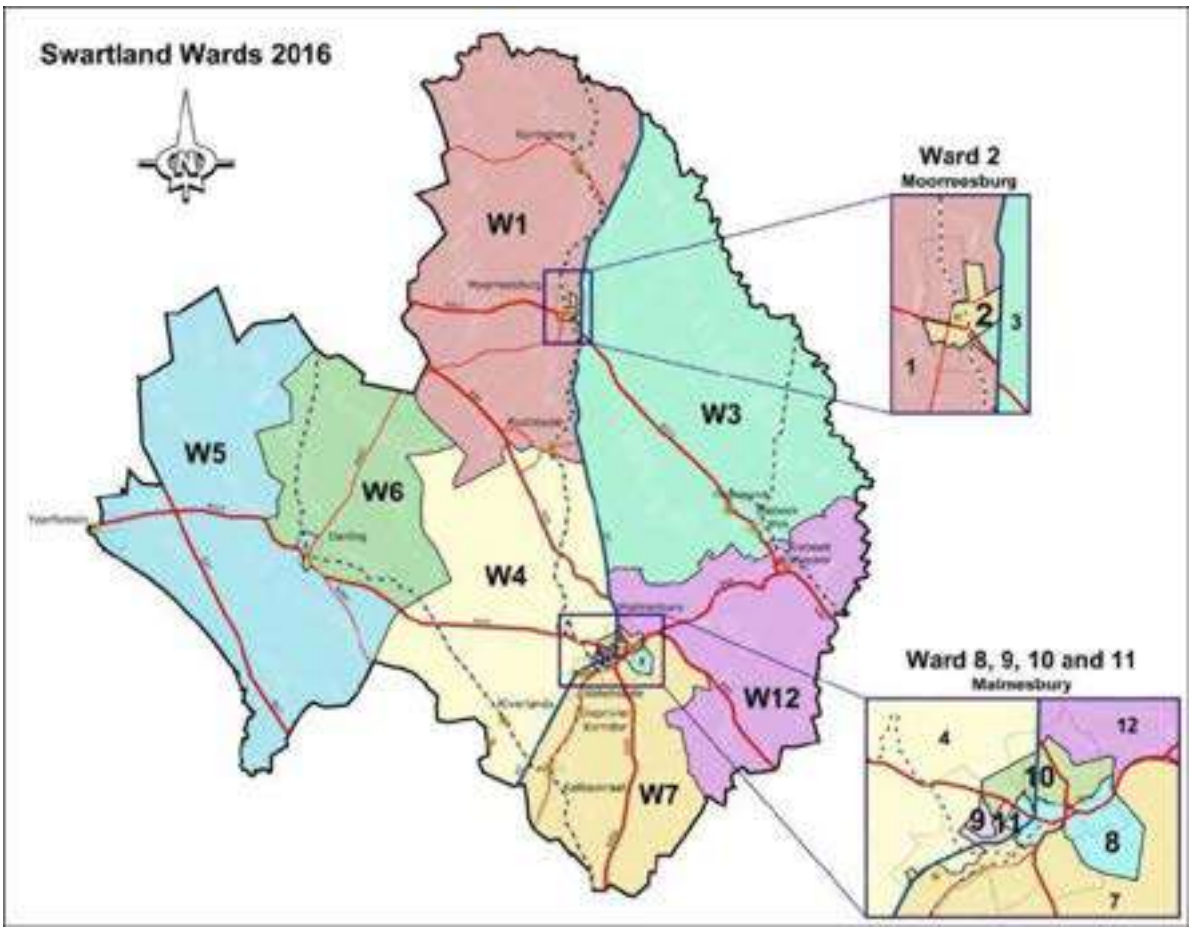
1.2 Spatial Context

The Swartland Municipality (WCO15) is located along the West cost of the Western Cape. Swartland and four other municipalities (Matzikama, Cederberg, Saldanha and Berg River) are part of the West Coast Region under the jurisdiction of the West Coast District Municipality.

The total area of the Swartland Municipality is three thousand six hundred and ninety-nine square kilometres (3699km²) which represents 12% of the West Coast region. The Swartland municipal area stretches from the Atlantic coast in the west to Kasteelberg in the east and beyond.

[1] Scope of Work: SPLUMA Section 12 and SMA Section 24 (1) and 26 (e)

Figure 2: Map representing the new Swartland Municipal Wards



The Swartland municipal area (WCO15) is divided into 12 Wards. The wards consist of 11 urban settlements and surrounding rural areas, listed in the table below.

Ward	***Areas included***
1	*Koringberg, part of Moorreesburg and rural areas*
2	*Moorreesburg*
3	*Riebeek West, Ongegund, Misverstand dam and rural areas*
4	*Chatsworth, Riverlands, Mount Royal (Malmesbury), Ruststasie and rural areas*
5	*Yzerfontein, Jakkalsfontein, Grotto, Ganzekraal, part of Darling, Dassen Island and rural areas*
6	*Darling and rural areas*
7	*Abbotsdale, Kalbaskraal and rural areas*
8	*Malmesbury South*
9	*Malmesbury, Wesbank*
10	*Malmesbury North (Panorama, Tafelzicht) and West (Schoonspruit)*
11	*Malmesbury West (Ilinge Lethu)*
12	*Riebeek Kasteel*

1.3 Report Structure

The SDF provides the municipality with the necessary tools for the effective management of future development to ensure that development is balanced and sustainable and creates socio-economic opportunities. The report comprises the following chapters:

- Chapter 1: Purpose of the SDF, Principles and Tools
- Chapter 2: Issues, Visions and Goals
- Chapter 3: Spatial Analysis, Legislative & Sectoral Plan Directives
- Chapter 4: Land Requred and Demand
- Chapter 5: Spatial Development Proposals: Settlements
- Chapter 6: Spatial Development Proposals: Rural and Regional-Cross Border
- Chapter 7: Environmental Management Framework.
- Chapter 8: Capital Expenditure Framework.

1.4 Status of Swartland SDF and IDP, National and Provincial Policies Alignment+

The Swartland SDF, 2023 -2027, will be adopted as core component of the 5th generation Swartland IDP, 2023 – 2027 (MSA Section 26(e)). The rewrite of the SDF included the review the next five-year cycle SDF projects and 20-year development plan and alignment it with the Capital Expenditure Framework of Swartland Municipality

In accordance with Section 3(1) of the Swartland Municipality: Land Use Planning By-Law, April 2016, the Swartland SDF was prepared as part of the municipal IDP in accordance with the provisions of the Municipal Systems Act (MSA) (Act 32 of 2000). Sections 5-10 of the Swartland Municipality: Land Use Planning By-Law guides the content of and procedure to follow to compile or amend an SDF. The approval or adoption of this SDF, will be undertaken in accordance with Section 10 of the Swartland Municipality: Land Use Planning By-Law. This Swartland SDF once adopted is then valid for five years[2].

Besides legislation instructing the development and amendment of Spatial Development Frameworks, municipal spatial development frameworks have to be aligned with different national, provincial and local legislation, policies[3] and strategies which provide a spatial planning agenda. The alignment between these strategies is illustrated in the table below:

[2] Scope of Work: SPLUMA Section 12; MSA Section 24 (1) & 26 (e)

[3] National Policy Context: SPLUMA Section 12(5) and Section 7e(ii) & Municipal Policy Context SPLUMA Chp4, Section 12.1©, Sec 20(2) and Sec 7(e)(ii)

Political Mandate	NDP 2030	IUDF 2016	WCPSDP 2014	Swartland	
				SDF	IDP
Political Theme & SPLUMA & LUPA Principle: Jobs & Opportunities, Spatial Justice					
• Infrastructure-led growth • EPWP expansion • LED one stop shops, prioritise job- creation, partner local business • Implement taxi & bus services • Provide a range of housing • Ownership transferred • Connect communities to internet	1. Economy & Employment 2. Infrastructure 4. Inclusive rural economy 5. Local vs SA	1. Integrated urban planning and management 2. Integrated transport and mobility 6. Inclusive economic development	R2: Safeguard inland and coastal water resources and manage the sustainable use of water R3: Safeguard the Western Cape's agricultural and mineral resources, and manage their sustainable use E2: Diversify and strengthen the rural economy E3: Revitalise and strengthen urban space economies as the engine of growth S2: Improve inter and intra-regional accessibility	O1: Sustain material, physical & social well-being O2: Grow economic prosperity and facilitate economic sector growth	SG 1: Improve quality of life for citizens SG 2: Inclusive economic growth
Political Theme & SPLUMA & LUPA Principle: Responsive Local Government – Efficiency & Good Administration					
• Graduate recruitment appointments • Access drug addiction treatment	11. Building capable state	5. Efficient land governance and management 7. Empowered active communities 8. Effective urban governance 9. Sustainable finance	R1: Protect biodiversity and ecosystem services R4: Recycle and recover waste, deliver clean sources of energy, shift from private to public transport and adapt to and mitigate against climate change R5: Safeguard cultural and scenic assets	O3: Protect ecological and agricultural integrity O4: Protect and grow place identity and cultural integrity O5: Proximate convenient and equal access	SG 3: Quality & sustainable living environment SG 4: Caring, competent & responsive institutions, organisations and business SG 5: Sufficient, affordable & well-run services.
Political Theme & SPLUMA & LUPA Principle: Better Service Delivery – Efficiency & Spatial Sustainability					
• Maintain roads (potholes) • Access to electricity, water & sanitation • Regular maintenance of infrastructure	7. Improve education, training & innovation 8. Health care for all	2. Integrated transport and mobility 4. Integrated Urban Infrastructure 6. Inclusive economic development	E1: Use regional infrastructure investment to leverage economic growth	O3: Protect ecological and agricultural integrity O5: Proximate/ convenient and equal access	SG 3: Quality & sustainable living environment SG 5: Sufficient, affordable & well-run services.

Political Theme & SPLUMA & LUPA Principle: Stop Corruption – Good Administration					
• Effective systems: complaints processing • Staff appointed: add value • Exclude councillors from recruitment • Open tender adjudication • Open council meetings	12 Fighting Corruption	5. Efficient land governance and management 7. Empowered active communities 8. Effective urban governance 9. Sustainable finance	S1: Protect, manage and enhance sense of place, cultural and scenic landscapes.	O1: Sustain material, physical and social well-being O4: Protect and grow place identity and cultural integrity O5: Proximate convenient and equal access	SG 1: Improve quality of life SG 4: Caring, competent & responsive institutions, organisations & business SG 5:Sufficient, affordable & well-run services
Political Theme & SPLUMA & LUPA Principle: Meaningful redress – Spatial Justice					
• Inclusive amenities & spaces • Reliable public transport • True B-BBEE • Urban planning integrate communities & levels of income	3 Environmental resilience 6 Transform settlements 13 Nation Building	1, Integrated urban planning and management 2. Integrated transport and mobility 3. Integrated sustainable human settlements	S3: Promote compact, mixed use and integrated settlements S4: Balance and coordinate the delivery of facilities and social services S5: Promote sustainable, integrated and inclusive housing in formal and informal markets	O1: Sustain material, physical and social well being O2: Grow economic prosperity and facilitate economic sector growth O3: Protect ecological and agricultural integrity O4: Protect and grow place identity and cultural integrity	SG 1: Improve quality of life SG 2: Inclusive economic growth SG 3: Quality & sustainable living environment SG 4 Sufficient, affordable & well-run services.
Political Theme & SPLUMA & LUPA Principle: Making Communities safer – Spatial Resilience					
• Prevention units: gang & drugs • Law enforcement service: traffic & crime	9 Social protection 10 Safer Communities	7. Empowered active communities 8. Effective urban governance	S3: Promote compact, mixed use and integrated settlements S4: Balance and coordinate the delivery of facilities and social services	O1: Sustain material, physical and social well being O3: Protect ecological and agricultural integrity O4: Protect and grow place identity and cultural integrity	SG 1: Improve quality of life SG 3: Quality & sustainable living environment SG 4: Caring, competent & responsive institutions, organisations & business.

1.5 Values and Performance Qualities

Planning shifted from separate development and modernism with its basis of functionalism to human and nature-centred approaches to settlement making. Such settlements are scaled for pedestrians (neither pedestrians nor vehicles dominate); are compact (with high building densities); are integrated; composite parts reinforce each other; have a strong spatial feel with well-defined public spaces and have complex spatial structures offering choices i.t.o. intensity of interaction, privacy of living conditions, lifestyles, housing options and movement systems (physical, social and economic integration).

Well-performing settlements and regions have the qualities of Liveable Environments and Sustainable Settlements. These performance qualities are defined and described below:

Definition	Features and qualities
Liveable Environments *A liveable settlement satisfies more than the basic needs of a community as the individual as well as the community's needs for social facilities and health facilities are met. Quality of life is key. (Van Kamp et al, 2003).*	*Liveable environments are recognized by the present relationship between people and their settlements and features economic growth, accessibility and Place identity.*
Sustainable Settlements *Well-managed entities in which economic growth and social development are in balance with the carrying capacity of the natural systems on which they depend for their existence and result in sustainable development, wealth creation, poverty alleviation and equity (Department of Local Government and Housing, 2005).* *A sustainable settlement improves the liveability of a settlement by reducing the impact on the environment through reduced use of resources and the generation of less waste.*	*Sustainable settlements present the future relationship between* ***settlement and environment and features*** *Ecological integrity (Planet), Social justice (People) and Economical effectiveness (Prosperity).* 

1.5.1 Spatial Elements of Settlements and Regions

Settlements are structured spaces that facilitate the interplay between a) formally planned development (assigned land uses and corresponding engineering services) and spontaneous development (settlement plans which accommodate uncertainty and change) as well as b) public environments, shared by all inhabitants, vs. private realms of individual households.

The spatial elements of regions are topography (form), cultivation and landscape and man-made elements that include road networks and settlements, as described below:

Element	Settlement	Regional
Connection or Networks (circulation networks and public transport systems)	• Refers to movement of all kinds, including fixed line systems e.g. roads, light and heavy rail, underground rail, pedestrian and bicycle routes. • Movement system is network of spaces through which people move (network of movement spaces) – allowing for the public life of a community.	Movement system and network of movement spaces connection settlement. Movement Infrastructure, Main Routes, Railway line and Stations, Existing Settlements.
Space, built and natural	• Lies at the heart of non-programmatic approach to settlement making not just one element e.g. public open space, but is part of the whole. • Characterised by diversity, different spaces on continuum of public to private, there is a structural order. • Public spaces are meeting places of people in settlements, comprising of urban rooms and seams of connectivity. There is a degree of both publicness and privacy. • A continuum or hierarchy of public spaces and movement systems, which attract and give order to activities, events and elements in accordance with their need for publicness or privacy. Considering roads as public spaces.	Delineated and merged landscapes which are characterised by conservation, cultivation and natural growth. Mountains and Fynbos Ecosystems, Rivers and Freshwater ecosystems, Wetlands, Formal and Informal Conservation areas, Arable land, Beaches and Dunes.
Institutions (public amenities)	• Institutions most valued by society, i.e. institutions of learning, worship, exchange, markets served as structuring elements. • Their location determined the location of other more private uses. Most important public institution today is the open or social space. Location of institutions in relation to other elements of structure is of critical importance (central places, easily accessible i.t.o movement patterns, announced by public space). • Abutting institutions give unique character and often attract informal activities.	

Utility services (engineering services)	• Refer to engineering services that are essential to functioning of settlements (water provision, sewage removal, stormwater disposal, solid waste removal and electricity supply to maintain public health). • Should be provided as efficiently and cost-effectively as possible, taking due cognisance of human and nature centred approach to settlement making. • Utility services should follow structure, not lead.	Refer to bulk services that are essential to functioning of settlements e.g. solar farms.

1.5.2 Structural Tools

Settlements demonstrating desirable spatial element qualities are scaled for pedestrians (neither pedestrians nor vehicles dominate); are compact (with high building densities); are integrated and composite parts reinforce each other; have a strong spatial feel with well-defined public spaces and have complex spatial structures offering choices i.t.o. intensity of interaction, privacy of living conditions, lifestyles, housing options and movement systems.

The application of four spatial measures is central to the use of space to create positive settlements: definition, scale, flexibility and intensity. Each spatial measure consists of two opposite measures or structural tools as per the table below:

Spatial Measures	Description	Structural Tools
Definition	In positive environments, public open spaces are defined by buildings and other space defining elements such as walls and landscaping. The elements create a feeling of enclosure in contrast with free standing elements in a shapeless sea of space.	Continuity and Discontinuity (Containment).
Scale	Refers to the relationship between size, distance and height. "Human Scale" is a norm for all development planning.	Externalization and Localization.
Flexibility	Refers to the creation of spatial structures that accommodate unexpected change over a period of time.	Same and Different (Homogeneity and Heterogeneity).
Intensity	Refers to the creation of • high level support for economic and social goods and services. • an economic climate to prosper economic activities. • the conditions for sustainable public transport systems. • effective infrastructure use. • improved land use, contributing to compact urban areas, reduced transportation and energy use as well as the reduction of pollution.	Denseness and Sparsity (Openness).

The application of structural tools creates man-made spatial elements e.g.

- Centres/ Parks/ Precincts (Administrative, Educational, Legal and Services).
- Nodes (Collective & Specialised Economies, Services, Manufacturing, Tourist Attractions, highly accessible: high-intensity land use activity located along or at the start and end points of existing, emerging or national corridors: include areas of residence, industrial activity or trade that are either generators transport demand and/or supporters of transport functions).
- Hubs (Economic specialization: Jewellery, Petro Chemical, Logistics, highly accessible).
- Axis or Streets (Transport & mobility Spines).
- Corridors (include, but not limited to scenic, tourism, freight, transport, industrial development zones (IDZ), intensive agriculture or rural including agri-industry & related & supportive services and Conservation etc.).,
- Zones/ Precincts (Tourism, Commercial (special economic zones), Agricultural and Irrigation, Alternative Energy, Industrial (IDZs and SIDZs).

The table below provides a description of the structural tools applied to the spatial elements and its resultant man-made elements and or qualities:

DENSENESS (REINFORCEMENT)			
Connection	**Space**	**Public Institutions**	**Public Utilities**
• Single corridor movement network: Different forms of transport are brought together (pedestrian, bicycle, train, taxi, bus and vehicles). • Activity Axis: Core of activity corridor/ tertiary network or Street (local network). • Activity nodes: Different forms of transport connect.	• Economic agglomeration (integration of different developments (new and old)) • Densification and Strategic densification: Reduction of erf size, alternative housing types (housing topologies), infilling, redesign, mixed development.	Systems of public spaces (facilities) which order activities.	Infrastructure cluster where different utilities are managed e.g. water & sewerage.
SPARSITY (OPENNESS)			
Single mode transport networks (thresholds are too low to justify other modes) or Roads.	• Movement networks (part of a system of public places). • Protection and enhancement of Heritage Resources through: - Heritage overlay zone. - Conservation (biophysical) overlay zones and categories. - Coastal Management lines and zones.	Multipurpose facilities where different social services are offered.	Single Infrastructure yard e.g. sewerage works.

CONTINUITY			
Connection	**Space**	**Public Institutions**	**Public Utilities**
Ordering structure of movement networks: Settlement level: network energy released through stopping, exit (not through movement); server rather than integrate space. Inter-settlement level: Routes which do not allow stopping (i.e. freeways) serve as integrators of space.	Enclosure: Achieving a sense of enclosure and definition: Buildings, either through the building itself, its walls, or planting, should contribute to defining the public space it abuts.	Integration: Integrate new parcels of development with existing development to obtain agglomeration economies. Absorb settlement output: in green spaces i.e. evaporation ponds and storm water retention systems.	Above Ground Infrastructure.
DISCONTINUITY (CONTAINMENT)			
Along higher-order routes, create special places, such as public open space (squares) and parks. On lower-order routes create qualities of secrecy or privacy; discourage through-traffic.	Natural habitats: Ecological systems, complex, continuous, allow migration of species, productive/ conservation/ preservation space. Integrate natural and rural areas into urban landscape.	Public space used to interrupt built form, to ensure convenient access, dimensions of scale. Mobile services. Multifunctional centres.	Underground Infrastructure.
EXTERNALIZATION			
Connection	**Space**	**Public Institutions**	**Public Utilities**
Social facilities and higher order urban activities should be located along continuous movement routes rather than within residential precincts.	Higher order facilities should reinforce private quality of residential areas and contribute to symbiotic relationship between different activities and facilities.	Higher order facilities not to be entirely dependent on the resources of a particular local community. Facilities to be widely accessible.	District or regional utilities.
LOCALIZATION			
Intensive activities concentrated at most accessible points along continuous movement routes.	• Multi-purpose facilities as public spaces. • Corridors as agglomeration of economic and industrial activities.	Functional integration ensures availability and accessibility of a wide range of service and facilities.	Local Utilities.
SAME			
Connection	**Space**	**Public Institutions**	**Public Utilities**
Non-motorized vs motorized.	• Public and private space: • Reflect diversity in terms of sameness, areas of diversity or mixed-use development and cultural homogeneity (private) and cultural diversity (public).	Minimalism: Centralize decisions at institutional level, not at site development level.	Centralize decision making involving local directives and needs
DIFFERENT			
Non-motorized vs motorized corridors: intensification of development; mix uses; pedestrian and cycling friendly; high quality streetscaping.	Connection between space and structure recognises that different activities, cultures, and lifestyles have their own requirements, which must be met in the settlement making process.	Mixed use: commercial, social, service, trade and residential areas of different densities and types.	Various Utility types e.g. solar farm, electrical transformers, etc.

1.6 Policy as Structural Tool

Some policies, when applied, organise space and provide structure. The policies applicable to the Swartland are the Critical Biodiversity Framework, Spatial Bioregional Planning Categories (intensity of land use – denseness and sparsity) and Coastal Management (define spaces – continuity and discontinuity):

1.6.1 Environmental Principles and Guidelines

Sustainable development is generally defined as development that satisfies the needs of the current generation without jeopardising the ability of future generations to provide for their needs. In the National Environmental Act, Act 107 of 1998, sustainable development is defined as integration of social, economic and environmental factors through planning, implementation and decision making to ensure that development can also support future generations.

In order to allow for effective planning of sustainable development in the rural and natural areas the Biodiversity Spatial Plan of 2017 has been included in the Swartland SDF. A detailed map was created for the Swartland region as well as more detailed plans for the environs around each of the towns and settlements in the Swartland. These Critical Biodiversity Areas maps were again used to inform the Spatial Planning Bioregion Planning Categories Map for the Swartland Region.

1.6.2 Critical Biodiversity Framework

The Western Cape Critical Biodiversity Framework (WCBF) (2010) was a project by Cape Action for People and Environment and the Department of Environmental Affairs and Development Planning (CAPE/ DEA&DP), with contributions from Cape Nature and SANBI. WCBF aimed at integrating all biodiversity planning products for the Western Cape into a common, user-friendly framework to give guidance in the land-use decision making process. The WCBF integrated key biodiversity information relevant to land-use such as Protected Areas, Critical Biodiversity Areas (CBAs) and Ecological Support Areas (ESAs) into a single layer.

It was recently replaced with the provincial Biodiversity Spatial Plan, 2017, which included CBA and ESA areas for the entire province. CBA maps for the Swartland were developed, which were used to inform the development of the Bioregional Spatial Planning Categories maps for the Swartland.

1.6.3 BioregionalSpatial Planning Categories

The Bioregional Spatial Planning Categories (SPCs), consistent with the principles of bioregional planning and UNESCO's MaB (Man and the Biosphere) Programme have their origins in the Bioregional Planning Framework for the Western Cape. Bioregions can occur across local authority areas to provide meaningful geographical areas with common interest. The implementation of the categories is to support conservation and integration of natural areas, e.g. nature reserves can be integrated with areas where natural vegetation occur such as agricultural areas and mountains.

The Bioregional Spatial Planning Categories (SPCs), as adopted and adjusted by the Department of Environmental Management and Development Planning to Spatial Planning Categories, were adopted in the Swartland SDF. All urban and rural areas within the Swartland were categorised using the following bioregional spatial planning categories.

Table 1: Categories on CBA & ESA Maps and recommended corresponding Spatial Planning Category

*(CBA – Critical Biodiversity Areas, ESA – Ecological Support Areas, ONA – Other Natural Areas, NNR – No Natural Remaining)

Biodiversity information critical to land use**vs. *Spatial Planning Categories***	Protected Areas	CBA* 1	CBA 2	ESA* 1	ESA 2	ONA*	NNR*
Core 1	■	■					
Core 2			■	■			
Buffer 1						■	
Buffer 2					■	■	
Intensive Agriculture							■
Settlement							■
Industry & Existing Mining	■	■	■	■	■	■	■

The table below describe the Spatial Planning Categories and recommend land use activities.

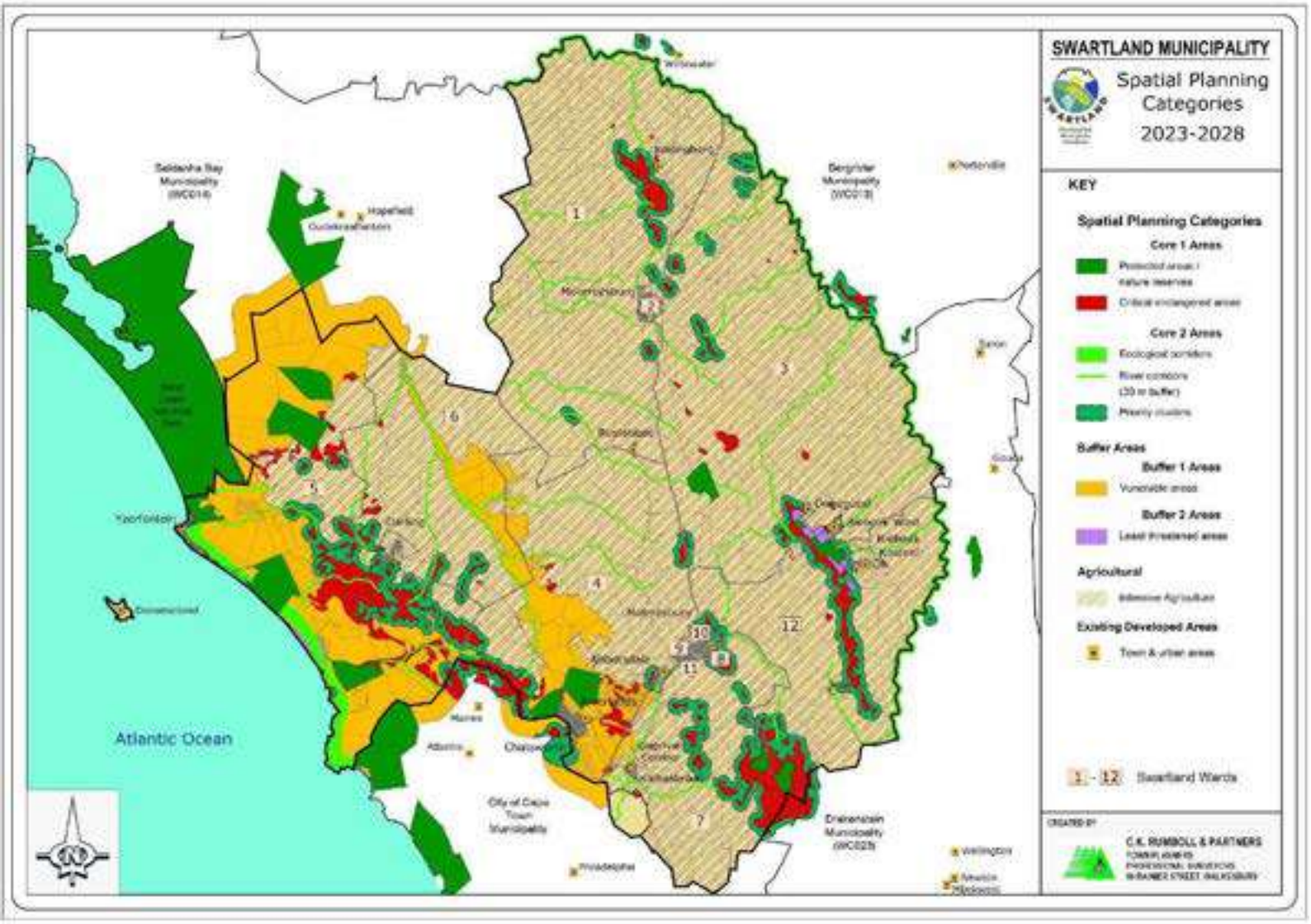
Table 2: Description of Spatial Planning Categories and recommended land use activities

Spatial Planning Categories	Formal Conservation Status:
Core 1, Wilderness areas, & Critical Biodiversity Areas 1 regardles of if area is located in a rural or urban area or in a formal conservation area or not.	No go area, Only non-consumptive activities are permitted, e.g. passive recreation and tourism (hiking trails, bird watching) religious ceremonies, research and environmental education & associated buildings, no agriculture. Wilderness areas: Statutory and de facto wilderness areas serving as a 'benchmark' for environmental health and providing primitive, non-consumptive, nonmechanised outdoor recreation.
Core 2, Statutory Conservation areas, Degraded critically endangered habitat areas & ecologically	Biodiversity compatible and low impact conservation land uses as per Core 1 areas, but allowing for a limited increase in the scale of development in less sensitive areas.

support areas 1, private conservation areas	Acceptable land uses are those that are least harmful to biodiversity and include compatible and low impact conservation land uses as per Core 1 Areas, whilst allowing for a limited increase in scale of development in less sensitive areas (provided ecological processes are not disrupted). To be informed by detailed site-level mapping of habitat conditions, transformation thresholds and cumulative impacts.
Buffer 1, *Other Natural areas, public conservation, private conservation*	Biodiversity compatible uses as informed by transformation thresholds, including: low density rural residential development, resort and holiday accommodation, tourist and recreation facilities, additional dwelling units, renewable energy projects. Extensive agriculture: game and livestock farming: Public conservation areas: Public conservation areas with statutory conservation status - not qualifying for A.a status, surrounding, or within Core Areas, e.g. contractual national parks, national monuments, local authority nature reserves. Private conservation areas: De facto conservation areas in private ownership, no statutory conservation status, but ideally within registered conservancies – protecting integrity of core areas.
Buffer 2: Other Natural areas, ecological corridors, rehabilitation areas.	Activities and uses directly related to primary agricultural enterprise, including a homestead, agricultural buildings and worker accommodation, additional dwelling units to limited 5 units. Additional land uses include: small scale holiday accommodation (farm stay, B&B, guesthouse, boutique hotel); restaurant, lifestyle retail, venue facility; farm stall & farm store; home occupation; local product processing (e.g. cheese making), and Tourist and recreational facilities (e.g. hiking trail, mountain biking, 4x4 routes). Ecological Core Areas or corridors: Natural linkages between ecosystems that contribute to the maintenance of natural processes, e.g. rivers, continuous tracts of natural vegetation. Rehabilitation areas: Rehabilitation Areas designated for rehabilitation (i.e. conservation-worthy areas previously degraded by agriculture, mining, forestry).
Intensive Agriculture *Agriculture*	Activities and uses directly related to the primary agricultural enterprise, Farm buildings and associated infrastructure (e.g. homestead barns, farm worker accommodation, etc.). 5 Additional dwelling units. Ancillary rural activities of appropriate scale, not detract from farming production but diversify farm income, and add value to locally produced products.
Settlement	Agricultural activities of an excessive scale (regional product processing) and non-agricultural activities not suited for location in the Intensive Agricultural and Buffer 1 and Buffer 2 areas to be located within settlements or their “fringe areas”.

A SPC map has been developed for the Swartland municipal area.

Map 1: Swartland Spatial Planning Categories



1.6.4 Coastal Management Lines

Continuous economic and population growth and climate change will prominently impact the coastline. Despite climate change increasing the abrasive nature of wave action and storm events, the onshore areas will remain host to settlements along the coast. Coastal zones direct the most desirable location of settlement, industry, harvesting of natural resources as well as recreational activities. The sensitive, vulnerable, often highly dynamic and stressed ecosystems found along the coast require specific attention in management and planning to preserve coastal resources, protect coastal quality and reduce coastal related risk.

In 2014 the Western Cape Department of Environmental Affairs and Development Planning delineated coastal set-back or management lines for the West Coast District. The Swartland coastal area, Ward 5, stretches from Grotto Bay in the south to Yzerfontein and the West Coast National Park in the north.

Coastal Management/Setback Lines

The use of coastal management/setback lines involves both qualification and risk and proactive planning of future development. The West Coast management/setback line differentiates between areas along the coastline with existing development rights and future development options and those areas that should be left undeveloped due to a high risk from dynamic coastal processes or as coastal public property. The following coastal features were considered along the coastal risk zone to determine the coastal management/setback line:

- *Environmental buffers* required inland to form the high-water mark to maintain a functional coastal ecosystem under future sea level rise scenarios;
- *Social buffers* required along the coast. For example, public beach access through and along the coastal frontage, areas which have cultural significance or heritage resources and historically sensitive locations that require specific management:

**CML - Coastal Management Line*

Social Buffers			
Heritage resource	**Description**	**Location**	**Action/comment**
Bokkerivier, Bokbaai	Historical buildings on beachfront.	Bokbaai	Falls outside the Risk Zone. Not included in the CML. Retain CML on 1:100yr risk line.
Yzerfontein Middle Stone Age Site	A rich Middle Stone Age site with archaeological and palaeontological resources near Yzerfontein Harbour.	West of Yzerfontein Harbour against embankment.	Will be within CML once Admiralty Reserve is included as sensitive area.

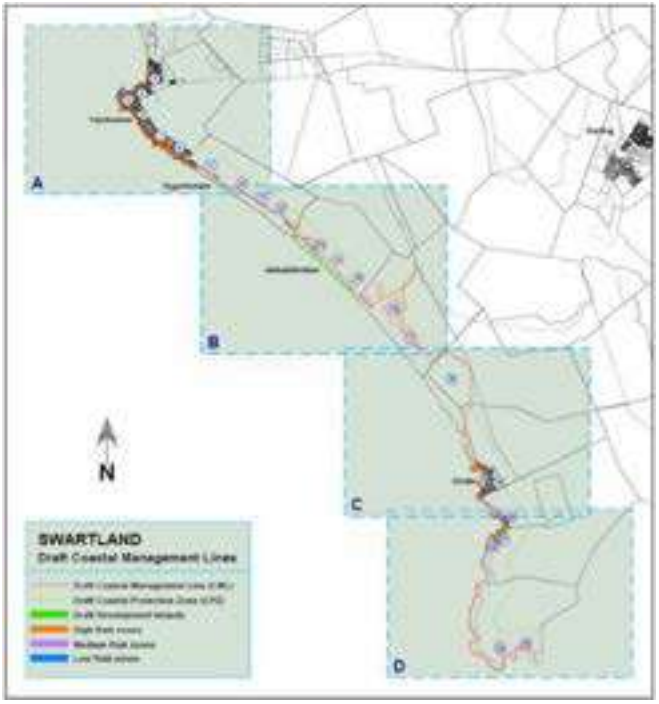
- *Economic development requirements* for the coast, for example allowance for new beach facilities that will need to be placed closer than standard development to serve the public.

The resultant zone is conceptualised as the area below the coastal management line. It includes all sensitive areas along the coast, both in terms of biophysical sensitivity and socio-economic value.

The demarcation of the actual coastal management/setback line is different for developed and undeveloped areas. In ***rural areas*** the coastal management/setback line follows the landward boundary of the long-term risk projections. Where necessary, a separate line can be drawn around existing development and development rights within the risk zone to protect the development rights. As it is not the intention to use the coastal management/setback line to impact on existing development rights, the line is drawn seaward of properties abutting the shoreline with existing development or development rights in ***urban or developed areas***.

This Swartland concept coastal management/setback line map has four sections A to D. Some inserts provides additional necessary detail and together with the sections maps are found in Annexure 1.

Figure 3: Swartland Coastline Sections of Coastal Management/ Setback Line



Coastal Management Overlay Zones

Coastal management overlay zones are collectively envisaged as the area close to the sea within which development should be managed in order to preserve coastal quality and protect property and lives. Development in these zones is possible under certain circumstances and after appropriate environmental and risk assessments have been undertaken. Restrictions in this area can be applied strictly and consistently, since it is informed by scientifically modelled coastal processes or hazard zones.

Three Coastal Management Overlay Zones are proposed for **urban areas** along the West Coast:

1. *High risk zone* – 20-year horizon – 0 meter above mean sea level;
2. *Medium risk zone* – 50-year horizon – high risk line to medium risk line;
3. *Low risk zone* – 100 years – medium risk line to low-risk line.

As per the above figure, the overlay zones refer to areas designated by risk modelling as subject to short term (1:20 year), medium term (1:50 year) or long term (1:100 year) risk emanating from coastal processes such as coastal erosion, storm surges, sea level rise and storm wave run-up. In **rural areas**, the risk grading from low to high is not necessary, and hence only a default 'risk' zone is indicated as the entire area between the 0m above mean sea level and landward boundary of the low risk (long term risk) zone. This risk zone is expanded in places where littoral active zones are present, as these contribute to the risk of exposure to possible future coastal erosion.

Figure 4: Application of LUMs Risk Zones Overlay Example

Coastal Protection Zone

The National Environmental Management: Integrated Coastal Management Act (ICM Act 24 of 2008) makes provision for the demarcation of a zone adjacent to coastal public property that "*plays a significant role in a coastal ecosystem*". The demarcation allows the area to be managed, regulated or restricted in a way that differs from non-coastal areas, in order to:

a) Protect the ecological integrity, natural character and the economic, social and aesthetic value of coastal public property;
b) Avoid increasing the effect or severity of natural hazards in the coastal zone;
c) Protect people, property and economic activities from risks arising from dynamic coastal processes, including the risk of sea-level rise;
d) Maintain the natural functioning of the littoral active zone;
e) Maintain the productive capacity of the coastal zone by protecting ecological integrity of the coastal environment; and
f) Make land near the seashore available to organs of state and other authorised persons for performing rescue operations; or temporarily depositing objects and materials washed up by the sea or tidal waters.

The ICM Act defines a default CPZ which, consists of a continuous strip of land, starting from the high-water mark and extending 100 metres inland in developed urban areas zoned as residential, commercial, or public open space, or 1 000 metres inland in areas that remain undeveloped or that are commonly referred to as rural areas. These default boundaries may only be changed through a formal process of adjustment by the relevant Provincial MEC or National Minister.

1.7 Application

The coastal management lines and overlay zones should be included in the Swartland Integrated Zoning Scheme after identification and adoption of a Coastal Overlay Zone.

The SPLUMA principles and structural and spatial tools will be applied at regional (rural) and settlement levels to generate SDF proposals (Chapters 4 and 5) to enhance the desired performance qualities.

CHAPTER 2: Issues, Vision and Goals

This chapter provides an overview of Strengths, Weaknesses, Opportunities and Threats. It spells out the Spatial Vision for Swartland and set Goals to achieve its desirable spatial form.

2.1 Strengths, Weaknesses, Opportunities and Threats

The following table provides a SWOT analysis of the biophysical, social and economic and built environments (as per the Status Quo report). The relevant municipal departments and ward councillors participated in the SWOT analysis.

Opportunities	**Threats**
▪ Access value chains: IDZ in Saldanha. Proximity to Cape Town. ▪ Access to information. ▪ Governance and regulation (SPLUMA). ▪ Education: West Coast College Head Office. ▪ World economy. ▪ World nature conservation initiatives.	▪ Economic globalization & exporting scarce resources. ▪ Climate change. ▪ Urbanization: Population increased from 72 115 (2001) to 113 782 (2011) and 133 762 (2016). ▪ Expensive potable water. ▪ Poverty. ▪ Loadshedding ▪ Limited Water resources (and Drought)
Strengths	**Weaknesses**
▪ Settlements: Growth towns/ Service centres (Malmesbury - regional, Moorreesburg – agricultural, Darling – agricultural & agri-tourism). Tourism nodes (Riebeek Valley & Yzerfontein). ▪ Water Sources/ Courses: Berg, Diep and Groenrivier. ▪ Land Cover: Mountains & Hills (Paardeberg, Porseleinberg & Kasteelberg). ▪ Diversity in agriculture: Natural coastal belt (West Coast). ▪ Infrastructure: Roads (N7, R27, R45, R46, R315). • Economy: Highest contributors: To Employment - Commercial services and agriculture. To GDP- Commercial services and manufacturing.	▪ Maintenance of Infrastructure: Maintenance and upgrading of infrastructure to provide for future development. ▪ Land Demand and Shelter: Housing backlog (14 607 in 2018). ▪ Low levels of income. Unemployment. Dependency on Municipal support. ▪ School dropout. Dependency on subsidies.

2.2 Swartland Priorities

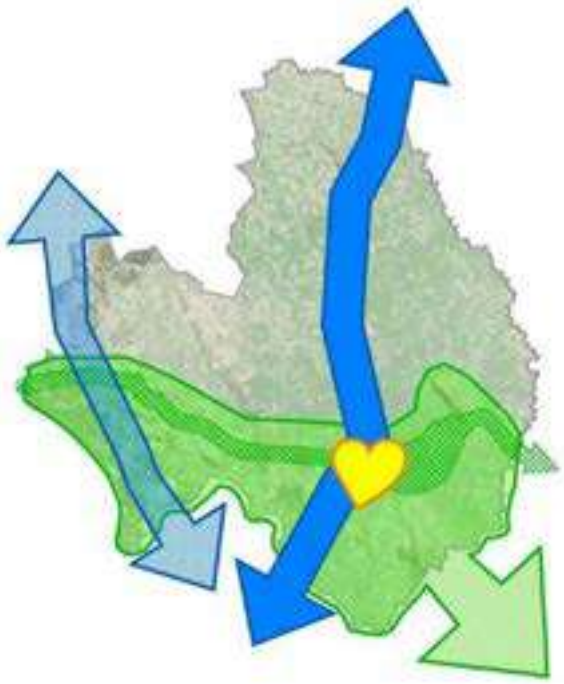
As per Swartland IDP, 2022-2027, the priorities are:

Table 3: *Swartland Priorities*

♣*PEOPLE:* -Improved quality of life for citizens
♣*ECONOMY*: - Inclusive economic growth
♣*ENVIRONMENT*: - Quality and sustainable living environment
♣ *INSTITUTIONS*: - Caring, competent and responsive institutions, organisations and business
♣*SERVICES*: - Sufficient, affordable and well-run services

2.3 Conceptual Proposal

From the SWOT analysis of the Swartland it can be concluded that the dual N7 is a powerful North South connector and R45 & R315 from the Riebeek Valley to Yzerfontein is vibrant and growing tourism corridor running East West. Both connectors present a variety of economic opportunities within the conservation worthy agricultural and natural landscape, intersecting at and pivoting around Malmesbury, the heart of the Swartland.



Within settlements, the following transitions are important:

From	To
Development in the sixties fragmented communities and destroyed the unique character and quality of life in rural settlements as it caused: ▪ Unsympathetic architecture and structure. ▪ Wide roads and excessive black tar surfaces. ▪ Conflict between pedestrians and motorcars. ▪ Commercial ribbon development and an overload of billboards. ▪ Security gates, telephone poles, masts and satellite dishes. ▪ Loss of continuous open spaces. ▪ Minimal landscaping (and being repeated day zero). ▪ No Non-Motorised Transport (NMT) and inadequate pavement provision.	Rejuvenate and grow settlements to be liveable, diverse and enable the population to be economically mobile. ▪ Promote complementing architecture and plant trees. ▪ Soften main roads in settlements and calm traffic. ▪ Promote pedestrian and cycling pathways (NMT). ▪ Develop a code for where and how to display billboards. ▪ Reticulate services underground (communication) instead of above ground. ▪ Protect the agricultural landscape. ▪ Promote open spaces as part of an OS networks. ▪ Encourage landscaping and require each land unit being created to plant two trees.

	▪ Prepare for climate change and as topography inform development.
Landscapes determines the status of assets and includes Agricultural landscape, Wilderness landscape, Waterways and connectors, Cultural-historical landscape, Connector routes and Corridors, social Foci and Community facilities and activities.	Enhance landscapes and utilise assets as tourist destinations.
Settlement urban edges were delineated for 5-, 10- and 20-year horizons whilst low densities prevailed.	Intensify land uses within settlement edges in accordance with IZS.
Swartland Municipality owns 1337.2ha common land and 3 208.7ha in total. A vacant land audit identified developable land within the urban areas.	Enhance economic mobility and sustainable settlements. NMT and adequate and well-maintained pavement provision
Density norms were determined for each town. A densification rate was determined and infill development is encouraged in order for settlements to achieve its 50- year's density parameters.	Promote rejuvenation of settlement whilst keeping precinct character including infill development, increased floor factor and where subdivisions or renewal development can occur.

2.4 Spatial Vision and Strategy

The spatial vision emerging from the IDP priorities and SWOT analysis of the biophysical, socio-economic and built environment (Status Quo) is:

"An economically prosperous region and sustainable liveable environment for all Swartland residents."

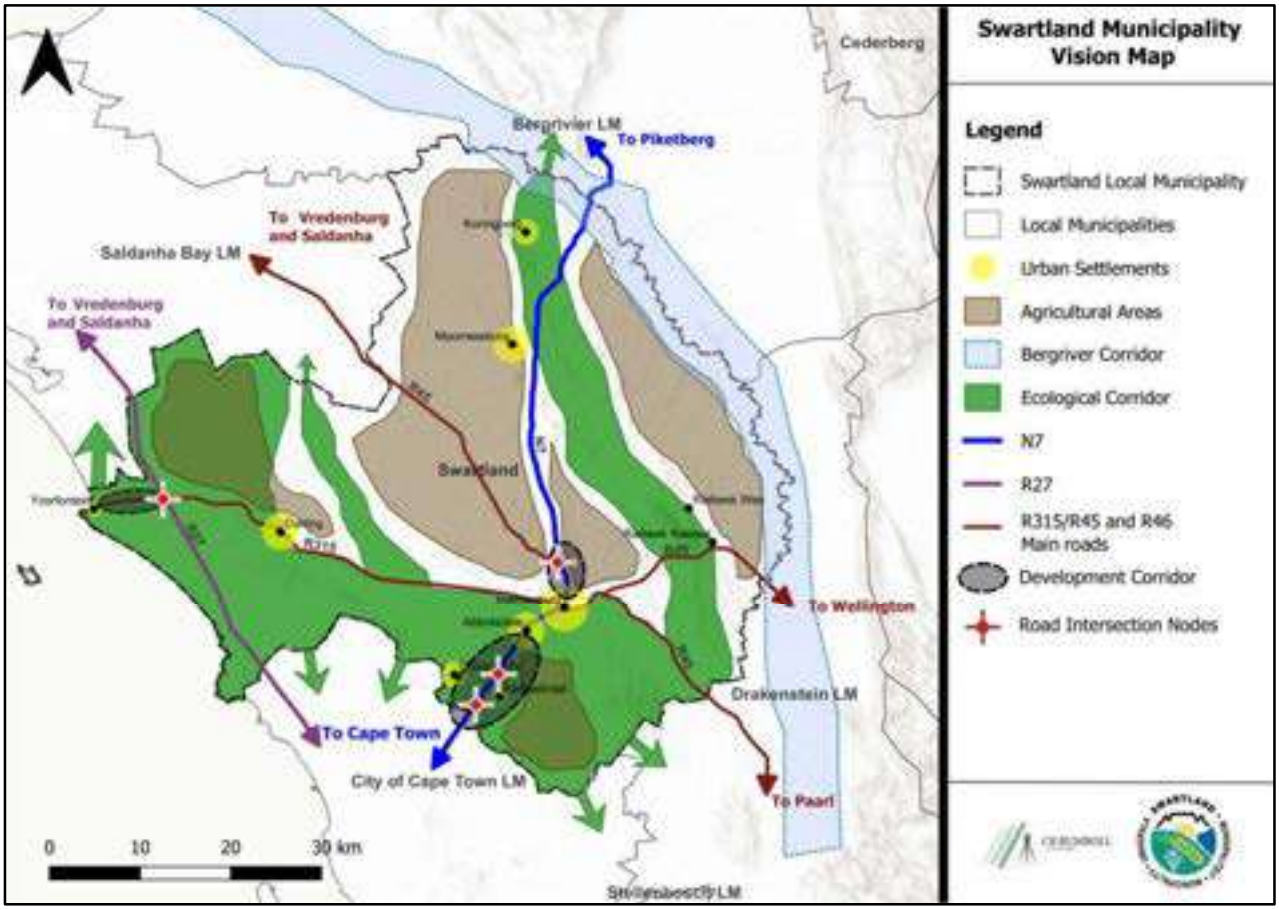
(See *Map 2 below: Swartland Vision Map*)

To attain this vision, the overall goal or mission is:

- To promote conservation and tourism and linking the West Coast National Park to the City of Cape Town boundary and establish a Climate Change Corridors, one west of the R27 and along the West Coast and another unrelated corridor from the Riebeek Mountains to the Paardeberg.
- To enhance the economic opportunities presented at intersections and along the dual N7 (North South) and the R45 & R315 (East West).
- Through strengthening the sense of place of Swartland settlements and rural areas whilst enhancing opportunities to establish sufficient business and industrially zoned land.

The SDF Vision is in support of Swartland IDP vision and mission: "Hope and a dignified life for all" as we shape a better future by dealing accountably and sustainably with all people and the environment.

Map 2: Swartland Vision Map



To prudently manage this vision in the spatial realm, five objectives in the section to follow, will assists in achieving it.

2.5 Spatial Objectives

The spatial objectives of the SDF will be informed by the IDP's strategic objectives and the Swartland SDF Vision:

SPATIAL OBJECTIVE	STRATEGIES
Objective 1: *Grow economic prosperity* [Economic Environment].	1. Protect Swartland's comparative trade advantage. 6. Grow (change) economic potential & trade advantage, strengthen mobility and economic links, stimulate diversification & product development. 11. Develop Swartland's competitive advantage, new markets and economic sectors (e.g. tourism).
Objective 2: *Proximate convenient and equal access* [Economic Environment].	2. Protect economic vibrancy. 7. Provide (change) sustainable infrastructure and services (smart growth). 12. Provide land for residential and industrial development.
Objective 3: *Sustain material, physical and social well-being* [Social Environment].	3. Protect safety and security. 8. Provide (change) of social infrastructure and services (as per norm) to facilitate smart growth. 13. Manage risk & disaster (man-made and natural).
Objective 4: *Protect and grow place identity and cultural integrity* [Built Environment].	4. Protect heritage resources. 9. Grow cultural potential. 11. Develop competitive advantage, new markets and economic sectors.
Objective 5*: Protect ecological and agricultural integrity* [Biophysical or Natural Environment].	5. Protect food & water security & formalise conservation of CBAs. 10. Grow conservation potential and apply bioregional classification and coastal management. 11. Develop competitive advantage, new markets and economic sectors (e.g. tourism and utilities).

2.6 Planning Legislation and Policy Frameworks

Several national acts and policies provide spatial directives which enabling Municipalities to guide development and to focus capital expenditure.[4] A list of these can be found in the Addenda.

[4] National Policy Context: SPLUMA Section 12(5) and Section 7e(ii)

CHAPTER 3: Spatial Analysis, Legislative & Sectoral Plan Directives

The spatial analysis of three environments, that is biophysical, socio-economic and built environment, will link to the directives derived from the applicable legislation governing these resources. The spatial analysis and derived directives will then be aligned with the sector plan directives and proposed directives for cross cutting resources and issues of neighbouring municipalities.

The directives generated from national, provincial and local laws, policies and strategies and aligned to the analysis of the Status Quo of the Swartland, can broadly be categorised into proposals:

- to protect,
- to change; and
- to develop resources in the three environments.

3.1 Spatial Analysis of Status Quo

The detailed spatial analysis and legislative directives are included as addendum and a abbreviated status quo report follows for the biophysical, socio-economic and built environment.

	Biophysical
Geology & Soils:	The majority of the Swartland area has a soil clay percentage of less than 15%. The western side of Swartland, above Malmesbury and the R45 has a clay percentage of between 15% and 35%. Soils vary over short distances and are therefore vulnerable to varying erosion rates.

Climate: Rainfall	Swartland has a mild Mediterranean climate with warm very dry summers and mild wet winters. Rainfall: Koringberg Rooikaroo area average 250mm, Middle Swartland Piketberg and Porterville average 300mm, Koeberg, Kortreiberg, Malmesbury and Voorberg average between 400 and 500 mm and Durbanville, Mamreweg, Paardeberg and Riebeek average between 500 and 600 mm with deposits of more than 700 mm occurring in the higher lying areas of the Riebeek mountains.
Wind	Wind Speeds: Koringberg Rooikaroo around 20km/hour in summer and higher during winter, Middle Swartland Piketberg and Porterville known for mild winds that rarely have speeds of more than 20km/h, Koeberg, Kortreiberg, Malmesbury and Voorberg known for wind speeds of less than 20km/h and Durbanville, Mamreweg, Paardeberg and Riebeek known for mild winds that rarely have speeds of more than 20km/h. Horizontal Global Irradiance for the entire Swartland is between 1901 – 2000 kWh/m2/annum.
Topography:	The landscape is characterized by undulating hills that flattens towards the coastline, with four prominent smaller detached mountains within the area known as *Kasteelberg, Porseleinberg, Paardeberg* and *Darling Hills* and creates a cosmic landscape character with some classic areas: does not contain individual places, but forms a continuous neutral ground (Norberg-Schulz's (1980)).
Hydrology:	Water management Areas in Swartland are the **Yzerfontein Subterranean Government Water Control Area** and The lower part of the **Lower Berg River Valley Subterranean Government Water Control Area.** The Berg River and Dieprivier are the two main river systems in the Swartland, with the Berg River the most prominent river which also forms the eastern and northern borders of the Swartland and is the only noteworthy water resource for irrigation purposes. Other Rivers are: Dwars, Modder, Salt, and Brak that are all prominent river systems in the Swartland.
Biodiversity:	Swartland Municipality lacks a comprehensive system of critical biodiversity area (CBA) corridors of which a large extent is formally or informally conserved. The land is covered with Coastal Renosterveld (or West Coast Renosterveld), Coastal Fynbos (or Salt Plain fynbos), Mountain Fynbos, Strandveld vegetation (or Strandveld succulent Karoo Fynbos) and Dune Thicket. The following different biomes are present: Forest Biome, Fynbos Biome and the Cape West Coast Biosphere Reserve which is located in the Cape Floral Region. Protected areas and threatened ecosystems include: Paardeberg, Riebeek and Porseleinberge, Areas aroud and between Darling and Riverlands, West of the R27, Malmesbury.
Mining:	There are twenty one (21) mines in the Swartland. Mining in the Swartland area is limited to - Lime, building sand, building clay, gypsum, salt, granite, kaolin and phosphate.
Agriculture:	Approximately 85% of the Swartland area represents arable land. Agricultural cultivation is mostly intensive, comprising vineyards, orchards and pastures. Both Agri-processing and Agriculture are significant economic contributors and employment sectors.
Tourism:	The growth of tourism is slowing down gradually and needs to be supported and expanded through the adoption of a Swartland tourism development strategy as envisaged in the Swartland SDF.

Socio-Economic

Demography

Between 2001 and 2022, the population in Swartland increased by approximately 42 000 people and 12 000 households in the first 10 years and 24 000 people and 5 700 households in the second 10 years.

	Census 2001	Survey 2007	Census 2011	Census 2016	Survey 2017	SEP 2021	SEP 2025
Population	72 115	110 324	113 762			137 567	146 940
Households (Hh Size)	17 403 (3.7)	30 646 (3.6)	29 324 (3.5)			32 272 (4.2)	34 986 (4.2)
Annual Growth Rate	1.99% (2001 -2011)			4.56% (2011 -2021) 1.7% (2021-2025)			

Table: Swartland Population

Swartland has the largest population in the West Coast District.

In 2021, the majority (70%) of the Swartland population was between 15 and 64 years of age, a cohort that represents the labour force.

Age	**0-14**	**15-19**	**20-64**	**65+**	**Total**
2016	33 872	12 316	80 152	7 421	133 761
2021	34 890	95 936		6 738	137567
% of '21 **total**	25.4%	70%		4.9%	100%

Urban Rural Population & Settlement Classification

Swartland's settlements classified according to their populations ('000) have:

- Malmesbury as regional service center (population between 25 000 – 60 000),
- Moorreesburg, Darling, Riebeek Kasteel & - Wes and Chatsworth as villages (population between 5 000 – 25 000) and
- Kalbaskraal, Koringberg, Yzerfontein as remote village (population ≤5 000)

Main Town	**'11 Census**	**'11 Survey**	**'16 Census**	**'17 Survey**
Malmesbury	39 290	39 072	54 610	52 211
Moorreesburg	12 811	12 145	17 840	18 643
Darling	10 315	11 340	14 664	12 370
Riebeek-Kasteel	4 730	5 340	6 646	8 465
Riebeek-Wes	4 338	4 253	6 166	7 830
Chatsworth	3 962	4 657	5 730	8 280
Kalbaskraal	2 379	2 061	3 338	3 470
Koringberg	1 206	1 349	1 711	1 810
Yzerfontein	1 097	2 669	1 384	2 170
Total	**80 128**	**82 886**	**112 090**	**115 249**

In 2016 Swartland had a predominantly urban population of 86.5%.

Health

In 2020, Swartland had the following Health Facilities:

- a Training hospital as well as a hospital for Tuberculosis in Malmesbury.
- A full-time primary health care clinic in Wesbank with satellite clinics in every other town within Swartland.
- There are PHCs (4 fixed and 1 community day centre) and 9 Satellite or Mobile PHCs.

	- The West Coast District Municipality operates an ambulance service from the Malmesbury hospital and this service is available for other towns.
Education	There are: • 65 pre-primary and playschools; • 17 primary schools • 4 secondary schools, and • 2 high schools • 30 schools in total and 22 no fee schools • 5 hostels in Malmesbury; 1 hostel in Riebeek Valley • 3 tertiary institutions in Malmesbury • 19 campuses for basic education for adults Of the population aged 20 years and older (as per StatsSA 2011), a total of

No or incomplete primary school	Completed primary or incomplete secondary schooling and are semi-skilled	Completed secondary schooling or a tertiary qualification
45.8%	35.4%	32.4%

Economy

Swartland's economy was valued at R8.6 billion (current prices) and having 46 667 people employed in 2019. Major contributors to Swartland's economy (GDP) in 2019 were:

Manufacturing sector, 26% or R2.9 billion, Secondary Sector

Wholesale, retail trade, catering & accommodation sector contributed 18.2% or R1.6 billion, Tertiary Sector

Agriculture, 12.5% or R1.1 billion, Primary Sector

General Government, 11.9% or R1 billion, Tertiary Sector

Finance, insurance, real estate and business services, 9.3% or R799.4 million), Tertiary Sector

Community, social and personal services, 6.9% or R594.7 million

Economic vs Employment Sector Contributors

Rank	1	2	3	4	5
Employment	Agriculture	Retail & Accom	Community&Social	Government	Manufacturing
Economy	Manufacturing	Retail & Accom	Agriculture	Government	Finance & Real E

(SEP, 2021)

	Built
Hierarchy and Role of Settlements	Malmesbury serves as the connection point for four major transport routes. The location of Malmesbury in terms of access and transportation routes as well as the town's proximity to other towns are contributing factors to the identification of Malmesbury as the regional service centre of the Swartland. Abbotsdale is classified as a small rural town.

Kalbaskraal is the southernmost settlement within the Swartland Municipal jurisdiction area.

Moorreesburg forms an important agricultural service centre to the surrounding extensive agricultural production area.

Riebeek West is situated close to the slopes of the Kasteelberg, surrounded by intensively cultivated agricultural activities including some of oldest wineries in South Africa.

Riebeek Kasteel is located along the slopes of Kasteelberg and the town's characteristic grid layout is encouraged by the surrounding vineyards along with intensive agricultural uses adjacent to the urban edge.

Riverlands is located 14 kilometres south of Malmesbury along the western side of the N7.

Chatsworth is located on the southern boundary of the Swartland Municipal area along the western side of the N7.

Darling is located near the West Coast Industrial Corridor.

Yzerfontein's location advantage and accessibility contributes to the town's attractiveness and growth over the past years.

Key: Low= Low, M= Medium, H=High, VH=Very High	Human Capital	Economic	Physical or Natural	Infra-structure	Institutional	Combined
Malmesbury (W 8-11)/ & Abbotsdale (W 7)	M	M	VH	VH	H	VH
Moorreesburg (W 2)	H	L	M	VH	H	H
Darling (W 5 & 6)	M	L	L	VH	H	M
Riebeek Kasteel (W 3)	H	M	VH	H	VH	H
Riebeek West (W 12)	H	M	VH	H	VH	H
Yzerfontein (W 5)	VH	M	VL	VH	H	M
Koringberg (W 2)	H	L	H	H	H	M
Kalbaskraal (W 7)	H	M	VH	H	H	H

Roads & Transportation modes

The National Household Travel Survey (NHTS), 2020 confirmed that in the Western Cape 1.6% commuters travelled by train, 5.2% by bus and 20.7% by minibus taxi, whilst 39.8% commuters travelled by private transport and 31.5% travelled by walking.

Regional and district transport nodes have not as yet been established within Malmesbury. However the dualing of the N7 has open up these opportunities

Waste

All the domestic waste in the towns are collected on a weekly basis with all the towns also provided with recycling bins located at easily accessible points for paper, plastic and glass. Swartland Municipality removes urban household waste of 97.7% Households at least once a week. A total of 95% of all domestic waste are dumped at the Highlands Landfill site south of Malmesbury. Darling also has a smaller landfill site. There is also a long-term plan to establish a composting plant for all garden waste and to process all building rubble. The Highlands landfill site has a 30-year lifespan.

Sewerage

91% Swartland Households have access to flush toilets connected to a sewerage system or network.

5% Households have access to flush toilets connected to a septic tank.

Only 3.6% households have poor or no sanitation.

Settlements	Treatment Capacity
Koringberg (W 1)	▪ Overloaded, must be upgraded. ▪ Oxidation dam system with insufficient capacity for current and future demand. Urgent upgrading is required.
Moorreesburg (including Hooikraal) **(W 1 & 2)**	▪ Not sufficient ▪ Formal treatment plant with sufficient capacity for the current and limited future demand. The treatment plant is old and the upgrading of mechanical and electrical components is crucial. Hooikraal does not have a flush sewer system.
Riebeek West & Ongegund (W 3), Riebeek Kasteel (W 12)	▪ New treatment works, sufficient capacity ▪ Oxidation dam system with insufficient capacity for current and future demand. Urgent upgrading is required.
Riverlands & Chatsworth (W 4)	▪ Actual capacity of oxidation dams is unknown ▪ Upgrading of sewerage works ▪ Maintenance on dam embankment and inlet work is needed ▪ Outlet does not comply to standards.
Yzerfontein (W 5)	▪ None, "honey sucker" (sewerage draining truck) collections
Darling (W 5 & 6)	▪ Upgraded, require an additional upgrade (Require R5 million) ▪ Formal treatment plants with insufficient capacity, a new sewer treatment plant is required
Kalbaskraal (W 7)	▪ Sufficient, yet oxidation dam capacity uncertain.
Abbotsdale (W 7) **Malmesbury (W 8 – 11)** (including Wesbank, Illingu Lethu)	▪ Sufficient

Electricity

For 98.3% of households electricity is the main energy resources used for lighting as per 2011 Census

Towns	Capacity
Koringberg (W 1)	Adequate
Moorreesburg incl. Hooikraal **(W 1 & 2)**	Adequate
Riebeek West & Ongegund (W 3), Riebeek Kasteel (W 12)	Adequate
Riverlands & Chatsworth (W 4)	Adequate
Yzerfontein (W 5)	Limited, inadequate for planned developments; Bulk Eskom supply upgrade planned for 2016/2017.
Darling (W 5 & 6)	Adequate
Kalbaskraal & Abbotsdale (W 7)	Adequate
Malmesbury (W 8 – 11) (including Wesbank, Illingu Lethu)	Adequate capacity in northern Malmesbury, Lack of capacity in south west of Malmesbury.

Water

The Voëlvlei and Misverstand dam are the water sources for the West Coast.

The West Coast District Municipality provides water to Swartland Municipality.

The system from the Voëlvlei Dam services Riebeek Valley, Malmesbury, Darling and Yzerfontein as well as Abbotsdale, Kalbaskraal, Riverlands and Chatsworth. The system from the Misverstand dam services Moorreesburg and Koringberg.

A total of 99.5% households has access to water at least 200m from their dwelling of which 83.3% has access to piped water within their dwellings and a further 15.6% have access inside their yards.

Settlements	Bulk Water Supply
Koringberg (W 1)	▪ Sufficient ▪ No capacity for extension ▪ 250 kl reservoir must be built to provide for storage capacity.
Moorreesburg (including Hooikraal) **(W1 & W2)**	▪ Sufficient ▪ No capacity for extension
Riebeek West & Ongegund (W 3), Kasteel (W12)	▪ Sufficient ▪ No capacity for extension ▪ Additional reservoirs are required to provide for storage capacity
Riverlands & Chatsworth (W4)	▪ Require new pumping gear
Yzerfontein (W 5)	▪ Sufficient ▪ No capacity for extension
Darling (W 5 & 6)	▪ Sufficient ▪ no capacity for extension
Kalbaskraal (W 7)	▪ Sufficient ▪ No capacity for extension
Abbotsdale (W 7) & Malmesbury (W 8–11) (including Abbotsdale, Wesbank, Illingu Lethu)	▪ Sufficient, new reservoir

Human Settlement and Tenure

Housing:

2020	Housing Backlog:		Pipeline
Waiting List	Subsidized	Affordable/ GAP & Flats	2020 to 2023
Abbotsdale	913	271 (Flats) 46	550 (Social) 56 FLISP
Chatsworth	664	26	130 UISP
Darling	2064	622	46 FLISP
Koringberg	182	-	300 SubS
Kalbaskraal	534	-	570 SubS

Malmesbury (Saamstaan) Ilinge Lethu	3 483 3 104	(Affordable / GAP) 616 (Wesbank Flats) 292	710 (Social) 1435 Subs
Moorreesburg	1 415	-	115 UISP 1150 Subs
Riebeek Kasteel	1 171	-	435 UISP 500 SubS
Riebeek West	755	-	15 SubS
Riverlands	227	-	57 SubS
Yzerfontein	7	-	0
Totals	14 519	1 873	

The greatest need for housing exists in Malmesbury & Abbotsdale (backlog of 7500), Moorreesburg, Darling, and Riebeek Valley.

Amenities

The provision of amenities in Swartland complies with the compulsory and discretionary norms.

Heritage

Eight hundred (800) and more preservation worthy buildings are in the Swartland with the highest concentration of buildings located in the towns of Malmesbury, Moorreesburg, Darling, Riebeek West and Riebeek Kasteel. A summary of the built heritage resources, mainly in Malmesbury, Moorreesburg and Darling, are tabulated below:

Town	Grade 2	Grade 3A	Grade 3B	Grade 3C	Total
Malmesbury	5	25	112	160	302
Moorreesburg	1	9	73	112	195
Darling		11	35	67	113
Riebeek West		16	18	34	68
Riebeek Kasteel	1	5	10	62	78
Koringberg			13	20	33
Yzerfontein				5	5
Abbotsdale		1	2	3	6
Kalbaskraal			2	9	11
Chatsworth			2		2
Riverlands					0
Total					813

3.2 Spatial Analysis and Sectoral Plan Directives

There are two sector plans and one strategy providing spatial and development directives as per the table below:

	Local Economic Development	Human Settlement Plan	Disaster Management Strategy
Economic Sector & Rural Development.	1. Improve local competitive advantages.	S2: Enhancing settlement integration and economic mobility. (Well-located land).	Assurance activities This element considers all assurance providers available to the institution and integration of their scope of responsibility.
Stable Environment.	2. Attract business to locate and grow here.	S3: Delivery according to corporate capabilities. (Secured funds. Sustainable Infrastructure).	Monitoring of the achievement of the risk management strategy and assess whether or not key milestones are achieved. More importantly it is also monitoring whether the risk management strategy is producing the sustainable outcomes as originally envisaged.
Policy & Enabling Environment.	3. Make local markets work better to increase opportunity for small business.	S2: Enhancing settlement integration and economic mobility.(Well-located land). S3: Delivery according to corporate capabilities. (Secure funds. Sustainable Infrastructure).	Structural configuration and institution structure in terms of committees and reporting lines to give effect to the risk management policy.
Human Capital & Labour.	4. Attract more rate paying citizens to live here.	S3: Delivery according to corporate capabilities. (Secured funds, Sustainable Infrastructure).	Accountability, roles and responsibilities and delegation of the authority and responsibilities to give effect to the risk management policy. (Refer to individual guidelines, included in this framework, for the specific roles and responsibilities of each role player).
Investment, Capital Expenditure.	5. Make it easier for local citizens to access economic opportunity.	S1: Responding to demand over the whole spectrum of income groups.(Implementation Agents). S3: Delivery according to corporate capabilities (Secured funds, Sustainable Infrastructure).	Risk management activities and risk assessment processes and methodologies, monitoring activities and risk reporting standards to give effect to the risk management policy.

CHAPTER 4: Land Demand, Supply and Settlement Development Guidelines

The Western Cape Growth Potential Study (2014) determined the settlement and socio-economic status of settlements in the Western Cape outside of the Cape Town metropolitan area along with their growth potential and investment directives. The study identifies the growth potential of the Swartland municipal area as High (63) in relation to the Western Cape, as is the case for other adjacent municipalities to the Cape metropole. At a settlement level Darling, Koringberg, and Yzerfontein have a Medium growth potential with Moorreesburg, Riebeek Kasteel and Riebeek West having a High potential and Malmesbury a Very High potential.

4.1 Land Demand and Supply Projections

4.1.1 Population Growth Projections

SPLUMA requires that the future demand/need for housing and related social and infrastructure services be considered and addressed as part of the SDF to allow for effective and sustainable planning of areas. For each urban area the demand for land within the short term (5 years) and long term (15-20 year) timeframes has been considered in the spatial proposals.

The needs and projected demands were established using the demographic information from the 2016 Community Census data as incorporated in the Status Quo report. Out of the total population, the urban rural split is 70:30: 81 504 (72%) live in urban areas while 32 258 (28%) reside in the rural areas.

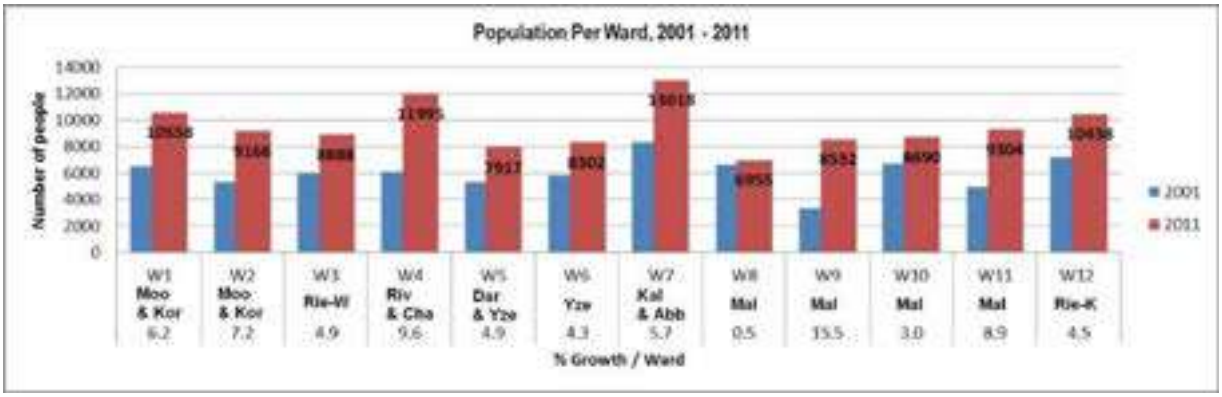
The community profile of the Swartland is tabulated below:

Table 4: Swartland Community Profile: Population & Households (StatsSA, 2001, 2011 & 2016)

		2001	2011	2016
Population	Total Population	72 115	113 782	133 762
	Population Growth Rate	1.99%	4.56%	3.3%
	15-64 years of age	47 577 (66%)	87 631 (70%)	92 469 (69.13%)
Household	Number of Households	17 403	29 324	39 139
	Average Household Size	3.9	3.9	-
	Female Headed Households	4 316 (25%)	8 384 (29%)	11 890 (30.38%)
	Housing Owned / Paying off	9 815 (56%)	15 337 (52%)	22 045 (56.32%)
	Formal Dwellings	16 254 (93%)	26 068 (91%)	34 648 (88.53%)

Applying the 2011 growth rate of 4.56% until 2031, the population is expected to increase to 277 529 people (nearly two and half times the current population).

Graph 1: Population per Swartland Wards (Source: StatsSA, 2001, 2007 & 2011)



4.1.2 Land Demand

To determine the existing demand for housing, the growth rate as well as existing municipal waiting lists need to be considered. The biggest demand is for subsidized housing, expressed with an existing total backlog of 16 139 opportunities, with Malmesbury representing 7 484 of those opportunities. The biggest need for affordable GAP and social housing, 1 873 opportunities, exist in Malmesbury. There is a substantial demand for holiday housing in the coastal town of Yzerfontein and medium and higher income housing for retirees and holiday homes in Darling and the towns in the Riebeek Valley which are popular destinations for weekends.

The current housing backlog as per the Swartland waiting lists for 2023 is tabulated below:

Table 9: Households on the Swartland housing waiting list

	Settlement	Housing: Subsidized		Affordable/ GAP & Flats, 2018	Subsidised, 2018
		'16 & '18	2023	'16 & '18	
4	Abbotsdale	903	1 181	271 & 46 (Flats)	550 (Social) 56 FLISP
4	Chatsworth	671	737	26	130 UISP
5 & 6	Darling	2 054	2 136	622	46 FLISP
1	Koringberg	191	150	-	300 SubS
7	Kalbaskraal	533	523	-	570 SubS
8 – 11	Malmesbury (Saamstaan) Ilinge Lethu	3 495 3 128	7 484	(Affordable / GAP) 616 (Wesbank Flats) 292	710 (Social) 1 435 Subs
1 & 2	Moorreesburg	1 397	1 474	-	115 UISP 1 150 Subs
12	Riebeek Kasteel	1 170	1 228	-	435 UISP 500 SubS
3	Riebeek Wes	762	885	-	15 SubS
4	Riverlands	230	216	-	57 SubS
5	Yzerfontein	8	0	-	0
	Other	65	125		
	Sub-Totals	**14 607**	**16 139**	1 873	

Land requirements for future settlement development are tabulated below:

Table 5: Additional land required in Swartland urban areas

WARDS Land Required for:	1 & 2 Moorreesburg	3 Riebeek West	4 Riverlands & Chatsworth	5 & 6 Darling & Yzerfontein	7 Kalbaskraal & Abbotsdale	8 – 11 Malmesbury	12 Riebeek Kasteel	Total
Subsidized Housing	140.1	46.5	37	131	76.4	360.2	41	*832.2*
Affordable Housing	156.5	39.8	29	117.3	55.5	256.6	30.6	*685.3*
Private housing	138.7	35.3	20.4	103.6	20.8	270.5	100	*689.3*
Total Land Required: 5 years	35.2	19.8	17.7	57.7	37.5	130.3	23.1	321.3
Total Land Required: 20 years	423.3	121.6	79.3	351.9	152.7	757	171.6	2 206.8
Land as per SDF	127.9	75.8	31.7	389.4	59.7	1 110.1	59.5	*1 854.1*
Shortfall	307.4	45.8	54.7	(37.5)	93	(222.8)	112.1	**352.7**
*All areas given in hectare (ha) *Koringberg (Ward 1 and 2) not included in Vacant Land Audit								

Land for future growth is under-provided for at 352.7ha. While sufficient provision was made for land in the next 5 years, there is not sufficient land identified for the long term (next 20 years).

4.1.3 Bulk Infrastructure Capacity

The availability of bulk infrastructure and services contribute to the economy and future development in Swartland settlements. The need for water and sewerage infrastructure is very high in Chatsworth and Riverlands. Overall, there is a need for upgraded water infrastructure in all settlements except Malmesbury. Improved sewerage capacity is required in Koringberg, Moorreesburg, Kalbaskraal, Darling and Yzerfontein. The need for increased electrical capacity, although indicated as medium, is high in Ilinge Lethu (9) and Saamstaan (11) as it is also required to unlock the catalytic project planned at De Hoop. Electricity upgrades are also required in Riebeek West and Kasteel .Green/renewable projects for Swartland are provided for in Malmesbury and Darling.

Table 6: Swartland Infrastructure Status Quo

Infrastructure Status Quo in settlements												
Ward	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Elect	A	A	Ltd	A	A	A	A	MP	MP	MP	UR	Ltd
Wtr	SNE	SNE	SNE	NPG	SNE	SNE	SNE	NR	NR	NR	NR	SNE
SEW	OL	InS	S	UR	NU	RU	S	S	S	S	S	S
Combined Services Need	H	H	H	VH	H	H	M	L	M	L	M	H
	A – Adequate, Ltd – Limited, MP – Making provision, SNE - Sufficient, no extension capacity, InS – insufficient, S – Sufficient, UR – upgrade require; NPG – require new pumping gear, OL – Overloaded, VH – very high – L- low H – High, NU – non & require upgrade, NR – new reservoir											

Bulk availability vs residential development required for HS purposes.

The provision of bulk services considered the housing backlog and housing need projections as per HSP (2019 -2025), with the exception of where land invasion took place, in the bulk services forward planning.

The following threats, strengths and weaknesses related to infrastructure were identified.

Opportunities	**Threats**
• Catalytic projects enabling the provision of infrastructure	▪ Expensive potable water
Strengths	**Weaknesses**
▪ Infrastructure/ Roads (N7, R27, R45, R46, R315)	▪ Upgrade of infrastructure - future development ▪ Housing backlog (14 607 in 2018) ▪ Low levels of income & dependency on Municipal support

New developments and upgrades should be aligned with WCPSDF, 2014, policy R2: *Safeguard inland and coastal water resource, and manage the sustainable use of water* by providing sustainable social infrastructure and service/ utilities to facilitate smart growth (SS7) and bringing about spatial sustainability (SPLUMA principle). The Swartland SDF principles Denseness – Sparsity and Same - Different apply to achieve Objective 2: *Proximate convenient and equal access*.

Effective management and use of water as a scare natural resource requires an overarching approach to water demand and the provision of adequate bulk water infrastructure in the Swartland to adequately plan for the impact of future droughts and climate change conditions.

The following directives apply:

1) Ensure that a base level of services is available for all residents in the municipality including those households qualifying for indigent grants.
2) Where possible implement GAP housing schemes as part of subsidy projects so as to help cross-subsidise the required infrastructure projects.
3) For low density settlements promote sustainable use of natural resources and reduce dependency on conventional grid services. The following solutions are proposed:
    - Promote the use of solar hot water projects;
    - Promote use of solar water heaters; PV panels; grey water recycling; waste separation at source; and passive building design to minimize energy, solid waste and water demand;
    - Encourage rainwater harvesting and grey water recycling.
4) Determine the bulk infrastructure required in the Swartland over the next 20 years considering the growth rate, densification strategy and needs of the community.

5) Determine the most suitable locations for bulk infrastructure facilities to allow the delivery of services at an acceptable cost.
6) Use non-renewable resources in a responsible manner not exceeding predetermined limits.
7) Provide environmentally friendly infrastructure and services in rural areas (improved quality of life of people living in the rural areas and effective environmental sustainability).
8) Investigate alternative water resources in Swartland to plan for future drought conditions.

An overview of the bulk infrastructure and supply capacity was tabulated in the Status Quo Analysis as part of the Built Environment[5]:

4.2 Land Supply

4.2.1 Settlement Form and Function

A Vacant Land Audit was completed for the Swartland towns during 2014 as part of the Built Environment Support Program (BESP) initiated by the Department of Environmental Affairs and Development Planning. The Vacant Land Audit identified all vacant land or derelict structures, on municipal land, within the urban edge of the different Swartland settlements and thus acts as an instrument, for easy land identification for future development and growth. To inform calculations to accommodate future growth and land to be zoned residential, commercial and industrial, the total extent of vacant municipal land, within the urban areas, has been incorporated in this part of the SDF, as part of the Land Supply in Swartland Settlements. The audit served to inform the Human Settlement Plan of the Swartland 2019 to 2025.

As Swartland Municipality had a long-term view with determining the urban edges the need for tenure opportunities can be met within the approved urban edges. The HSP informed the areas for inclusion and expansion. The HSP demand could fit well into the long-range view of the SDF. Hence the remaining portion of De Hoop farm was procured to provide for settlement making. Land earmarked for *residential settlement development is indicated as residential, high and medium density residential or mix use areas as these precincts should provide for different typologies, inclusionary housing and social and commercial amenities* according to the CSIR standards. .

The spatial demarcation of urban edges, settlement patterns and the identification of agricultural and conservation areas serves to protect spaces whilst unlocking opportunities. Consideration was given to the following to inform proposals:

[5] Capital investment Framework: SPLUMA Sections 21(n) &(p)(i-v)

Settlement Status and Economic Basis: Function

Rural development dictates settlement status and economic basis. The economic basis of settlements was used to generate overall development proposals (opportunity generation). Such proposals are aligned with WCPSDF, 2014, policy S3: *Ensure compact, balanced & strategically aligned activities & land use* by prioritising rural development investment where economic growth and spatial resilience (SPLUMA principle) is present. The Swartland SDF principles Same - Different apply whilst the Objective 1: *Grow economic prosperity* is supported.

Settlement Form: Densification and Intensification

Densification ensures optimal use of land and efficient use of infrastructure and services. Densification is strongly promoted in new housing developments and existing precincts in Malmesbury, Moorreesburg, Kalbaskraal, Riverlands and Chatsworth, whilst densification in the Riebeek Valley, Koringberg, Darling and Yzerfontein is cautiously promoted. These proposals are aligned with the SPLUMA principles of spatial sustainability and efficiency and WCPSDF, 2014, policies S1 and S5:

- *Protect, manage and enhance the province's sense of place, heritage and cultural landscapes* and
- *Ensure Sustainable, Integrated and Inclusive housing planning and implementation by providing a wider range of housing opportunities with regards to diversity of tenure, size, density, height and quality and taking heritage resources into account*.

The CSDF principles Denseness – Sparsity and Continuity - Discontinuity apply whilst Swartland SDF objectives 3 & 4 are supported: *Sustain material, physical and social well-being* and *Protect and grow place identity and cultural integrity.*

The policies cited promote smart growth and ensure the efficient use of land by containing urban sprawl and prioritising infill, intensification and redevelopment within settlements. To protect the unique character of settlements, densification targets should be set for each settlement, mindful of transport infrastructure, biodiversity, heritage resources, open spaces, flood lines, services capacity and the existing densities:

Table 7: Proposed densification targets for Swartland settlements

Towns	2016	Average Density Targets du/ha		
	du/ha	2017	2022	2027
Malmesbury	10.8	12.4	14.9	17.9
Abbotsdale	6.8	7.5	7.9	8.3
Moorreesburg	5.2	6.0	6.9	7.9
Darling	6.8	7.5	7.8	8.2
Yzerfontein	8.3	9.1	10.5	12.0
Riebeek Kasteel	8.2	8.5	8.5	8.5
Riebeek West	7.4	8.1	8.3	8.4
Koringberg	4.9	5.3	5.4	5.5
Kalbaskraal	3.0	3.4	3.9	4.5
Chatsworth	8.8	10.3	11.1	12.0

The following directives shall apply for intensification and densification along corridors and linkages:

- Sensitively infill and redevelop major arterial axes in clearly defined precincts;
- Delineate corridors to concentrate activities as activity streets or corridors and develop on both sides of the identified street;
- Sensitively development around and of heritage buildings;
- Enhance street character through landscaping and guiding the architecture of new developments;
- Encourage a multiple level of entry into the economic market and enhance job creation through mixed and compatible land uses;
- Promote the uniting of structures or land uses (corridors, nodes and linkages) between town and township; and,
- Encourage supporting densification patterns and infrastructure provision in corridors.
- Cluster together a hierarchy of three levels of urban nodes, containing business and community facilities, to ensure that larger investments, for higher order facilities, will be enjoyed by the greatest number of people:
    - Tertiary: Technicon's, hospitals, courts, multi-purpose centres, regional or metropolitan transport interchanges, museums and indoor sports complexes; and
    - Secondary: High schools, day care centres, hospitals, libraries, sports and community halls and sports fields; and
    - Primary: Primary schools, crèches, clinics, bus and mini-bus taxi stops.

Develop nodes to concentrate the business therein and, where growth is required, the nodes should be encouraged to grow, along the corridor, towards each other. This is to manage and prioritise the implementation of the needed infrastructure, in a strategic and orderly manner, and to provide the best opportunity for success of these businesses.

Settlement From: Restructuring and Integration

The restructuring and integration of towns in the Western Cape are supported by the Western Cape Provincial Spatial Development Framework of 2014 under the theme, *Developing Integrated and Sustainable Settlements*. The specific spatial policies that relate to the restructuring of towns are aligned with the SPLUMA principles of spatial sustainability, resilience and efficiency and WCPSDF, 2014, policies S1, S3 and S5 and Swartland SDF Objectives 1, 3 and 4.

WCPSDF, 2014

Policies S1: Protect, manage and enhance the province's sense of place, heritage and cultural landscapes.

Policy S3: Ensure compact, balanced & strategically aligned activities & land use.

Policy S5: Ensure Sustainable, Integrated and Inclusive housing planning and implementation by providing a wider range of housing opportunities with regards to diversity of tenure, size, density, height and quality and taking heritage resources into account.

The policies, support restructuring and target economic assets as leverage to regenerate and revitalise settlements. The policies further support functional integration and mixed uses as key components for achieving improved levels of settlement liveability and to counter the spatial patterns created by apartheid.

Restructuring of towns can be achieved through *functional integration:*

Implement the "within walking distance" principle (walking distance norm: 20 minutes/1 kilometre) for at least 50% of all social amenities or facilities. In older, established areas, integration of infrastructure can be achieved through the rezoning of residential erven within these communities. The same applies for the provision of secondary business nodes in subsidized precincts.

If infrastructure and services are present, support densification and reinforcement (mixed use).

In the Swartland settlements much functional integration has already happened. Most communities are located within a 20-minute walking distance from the commercial and social infrastructure.

Restructuring of towns can be achieved through *socio economic integration:*

Position social services and infrastructure centrally for sharing by various communities, for example - sports fields, market squares, open space networks, such as rivers and natural areas, including social spaces like picnic areas.

Provide a variety of housing types, especially around the centre of town and, if required, upgrade or replace infrastructure. Encourage different income (social gradient) and property values between adjacent areas. Thus, provide residential opportunities that is market driven and affordable to a section of society whose income is below the neighbourhood's median or average household income. The typology is aimed at first time home owners, young professionals, couples, retirees,

Furthermore, Integration Zones and Social Housing Restructuring Zones should be identified in urban settlements, as these zones will support convenient and equal access as promoted by several WCPSDF policies.

Specific proposals for functional and social integration are tabulated below for all Swartland settlements and wards:

Integration					
Wards	**Towns**	**Functional Integration**	**Social Integration**	**Offer a wider variety of housing types**	**Spatial Integration**
Wards 8 to11	**Malmesbury/ Abbotsdale**	More social and commercial services in Wesbank, Ilinge Lethu and Abbotsdale along activity streets within walking distance.	An integrated and active open space network along Diep & Platteklip rivers. Integrated community sport facilities.	Different housing typologies and densities in brown field developments.	Mixed uses along Bokomo/ Darling Way to integrate Malmesbury and Wesbank. Develop between Malmesbury and Abbotsdale.
Wards 1 & 2	**Moorreesburg**	A safe pedestrian and cycling route along Main road. Commercial uses in Rosenhof reinforced.	A centrally located community node between Moorreesburg and Rosenhof.	Different typologies and densities in brown field developments.	Integrated development along link road between Rosenhof and central Moorreesburg.
Ward 6	**Darling**	Smaller and better placed social and commercial services in northern section of Darling.	A central community plain along connecting route between northern and southern parts of Darling.	Different housing typologies and densities in brown field developments.	Mixed uses along activity streets. Infill development on vacant land in town.
Ward 12	**Riebeek Kasteel**	A commercial and social node in Esterhof. Promote formal pedestrian walkways between Esterhof and Riebeek Kasteel.	Development reinforced along connecting route between Esterhof and Riebeek Kasteel.	Different housing typologies & densities in brown field developments. Infill higher density development along connecting route.	Mixed use along link road between Esterhof and central part of Riebeek Kasteel.
Ward 3	**Riebeek West**	Provision of additional social and community services in new housing project area.	A community sports complex to serve bigger community.	Different housing typologies and densities.	Infill development in areas to achieve a more effective urban form. Mixed use development along main pedestrian and activity routes.
Ward 3	**Ongegund**	Limited social services	More efficient use of sports facilities	Different housing typologies and densities.	Infill development on vacant land to support a more effective urban form.
Ward 5	**Yzerfontein**	Social infrastructure specifically for large retired community.	Integrated community open space system. Link coastline with continued pedestrian walkway.	Different housing typologies and densities.	Mixed and alternative uses along activity roads enhancing tourism and scenic potential.
Ward 4	**Riverlands**	Central community node, social infrastructure and transport route between Riverlands and Chatsworth.	Central community node between towns where different social activities incl. sport, recreation and education are provided.	Different housing typologies and densities.	Central community node along the transport route between Riverlands and Chatsworth.
Ward 4	**Chatsworth**	Central community node, social infrastructure and transport route between Riverlands and Chatsworth.		Different housing typologies and densities.	Central community node and Mixed use along the transport route between Riverlands and Chatsworth.
Ward 7	**Kalbaskraal**	Improved social infrastructure in central location accessible to community.	Public areas along Diep River to be integrated into an open space system.	Support subdivisions of larger erven to increase densities.	
Ward 1	**Ruststasie**	Minimal provision of social infrastructure for surrounding farming community.			

Social and functional integration is achieved mainly through development along main activity routes which include mixed use (a combination of commercial, residential and low impact service industries).

Of note is the land requirement according to the standards for the provision of social amenities:

- 1 crèche / 5 000 persons – 0.08ha
- 1 primary school/ 3 000 – 4 000 persons of 1 000 dwellings – 2.8ha
- 1 secondary school/ 6 000 – 10 000 persons of 2 500 dwellings – 2.6ha
- 1 library/ 10 000 persons of 2 500 dwellings – 0.1ha
- 1 church / 1 000 persons – 0.015 – 0.3ha
- 1 mobile clinic / 5 000 persons of 1 250 dwellings
- 1 community hall/ 10 000 persons/ 2 500 dwellings – 0.2ha
- 1 police station/ 25 000 persons/ 6 250 dwellings – 0.1ha

Land use integration and interface

The intensification areas are seen as the prime instruments for promoting integration between towns and townships. Hence the guidelines below shall apply:

- Locate activities (residential, transport, work, recreation, etc.) within walking distance;
- Locate most frequented activities in the most central / accessible localities, e.g. industrial and commercial;
- Do not, as a general rule, target Human Settlement schemes exclusively at a single income group, usually Subsidy or Site and Service, and always include at least a GAP housing and top structure subsidy component;
- Arrange housing, for the various income groups, according to the socio-economic gradient principle, with the higher end of the market closest to the main thoroughfare;
- Use all well-located vacant land;
- Locate all future residential areas within walking distance of urban centres, where space permits; and,
- Give residents freehold tenure immediately, i.e. title deeds, so that shack upgrading will commence as soon as possible.

4.2.2 Urban Edges

Acknowledging the spatial importance afforded to urban edges to guide and control orderly development of the built environment, the existing edges as approved in the Swartland Spatial Development Framework of 2012 were revised according to the growth potential and requirements of each town. These proposed urban edges for the 2017-2021 Swartland Spatial Development Framework provide the demarcated urban areas for the next five (5) year to twenty (20) years. Urban development for the next five (5) years should therefore be contained within these demarcated areas.

In order to support spatial sustainability in accordance with the planning principles as advocated in SPLUMA and LUPA, a compact urban form is supported. For the proposed urban edges of the towns in the Swartland, consideration was given to the protection of high value agricultural land and compact urban form, as well as provision of opportunities for spatial integration (Malmesbury and Abbotsdale) while providing for additional land to address the future urban growth.

The revision of the urban edges was conducted within the framework of national, provincial and relevant Swartland municipal guidelines. The revision took into account the economic and social development as well as the environmental sustainability of the Swartland region.

The directives below shall apply:

- Give sufficient protection to land requiring protection, inter alia, high value agricultural land currently under cultivation;
- Encourage contraction (a compact urban form) rather than expansion of urban settlements to promote non-motorised transport modes and spatial integration where appropriate;
- Provide sufficient land for development to satisfy the needs of the area for about the next 20 years, given the current growth rate and the availability of under or unutilized vacant land.

4.2.3 Urban Design Guidelines

- Create open space systems that integrate the elements of a settlement to contribute to a meaningful urban structure. This can be done by:
  - Providing connectivity between open spaces;
  - Establishing linkages between open spaces;
  - Surrounding the open space system with public buildings; and
  - The continuation of special activities or functions along major routes/ linkages.
- Link symbolic elements (statues) or public facilities (library, clinic, etc.) to open spaces in relation to their importance and character.
- Ensure the definition of public spaces through the effective design of an interface between public and private domains.
- Create visual recognition and surveillance along open spaces and public routes through:
  - Locating buildings around open spaces and streets so that sufficient enclosure is created; and
  - Ensuring the appropriate heights of buildings; and
  - Locating the highest buildings to the southern side of the open space, with lower buildings or trees on the northern side.
- Permit markets at highly accessible locations, in terms of the movement network and urban structure, to ensure the greatest viability possible. These locations could be modal interchanges and intersections.
- Accommodate a variety of users in and uses along streets by the following:

  - Concentrate intensive activities along major vehicular and public transport routes;
  - Locate the majority of public buildings and increase densities along these routes; and
  - Locate buildings closer, rather than further, from the streets to increase pedestrian activity, a sense of enclosure and surveillance.

- Create appropriate road cross-section widths that can provide for vehicle traffic, parking, pedestrian movement, cycling and landscaping.
- Protect mobility function of routes: Arterial Management Plans to be developed, where applicable to DTPW Roads Branch approval.
- Promote access (penetration) and encourage economic activity by orientating the short side of blocks to major streets, wherever possible.
- Plan for adequate solar exposure of buildings. Orientate roof pitches of buildings in such a way that roof solar panels maximise continuous direct access to the sun.
- Consider the heritage value, elements of vernacular architecture and, where possible, retain these important elements when entertaining proposals for the development of buildings. Similarly, the historical characteristics of existing buildings should be considered to be integrated, where practical, into the design and construction of close by new buildings.
- Encourage the use of local materials in the construction of new buildings.
- Encourage appropriate water-wise landscaping.
- To encourage a pleasant gateway experience into the settlements, ensure that the main streets of urban areas are appropriately landscaped

CHAPTER 5: Spatial Development Proposals: Settlements

The SPLUMA principles and structural and spatial tools were applied at regional (rural ward) and settlement levels for making proposals for the enhancement of settlements and regions and to create Liveable Environments and Sustainable Settlements.

The aim of the Small-Town Regeneration Strategy (STR), 2021 is a regionalist approach to small town development and regeneration, which has resulted in a move away from jurisdictional/administrative regions to functional social, spatial and economic regions. Hence Swartland is part of the West Coast region and included in the West Coast Regional Spatial Development Framework. The STR highlights the importance of undertaking a Socio-Economic Baseline Study, infrastructure planning, maintenance and provision and places emphasis on the importance of including all in the regeneration process.

Settlement should have a clear vision to address the developmental needs of its inhabitants. Development needs should address the social needs of people living and working in small towns, now and in the future, and create opportunities for the establishment of sustainable communities. The STR Strategy is to
(1) create a spatially enabling environment, by following a
(2) broad-based approach to local social development that will bring about
(3) equitable economic growth, through
(4) co-operative, coherent and responsible governance, management. and
(5) strengthened institutional mechanisms for monitoring and evaluation and data

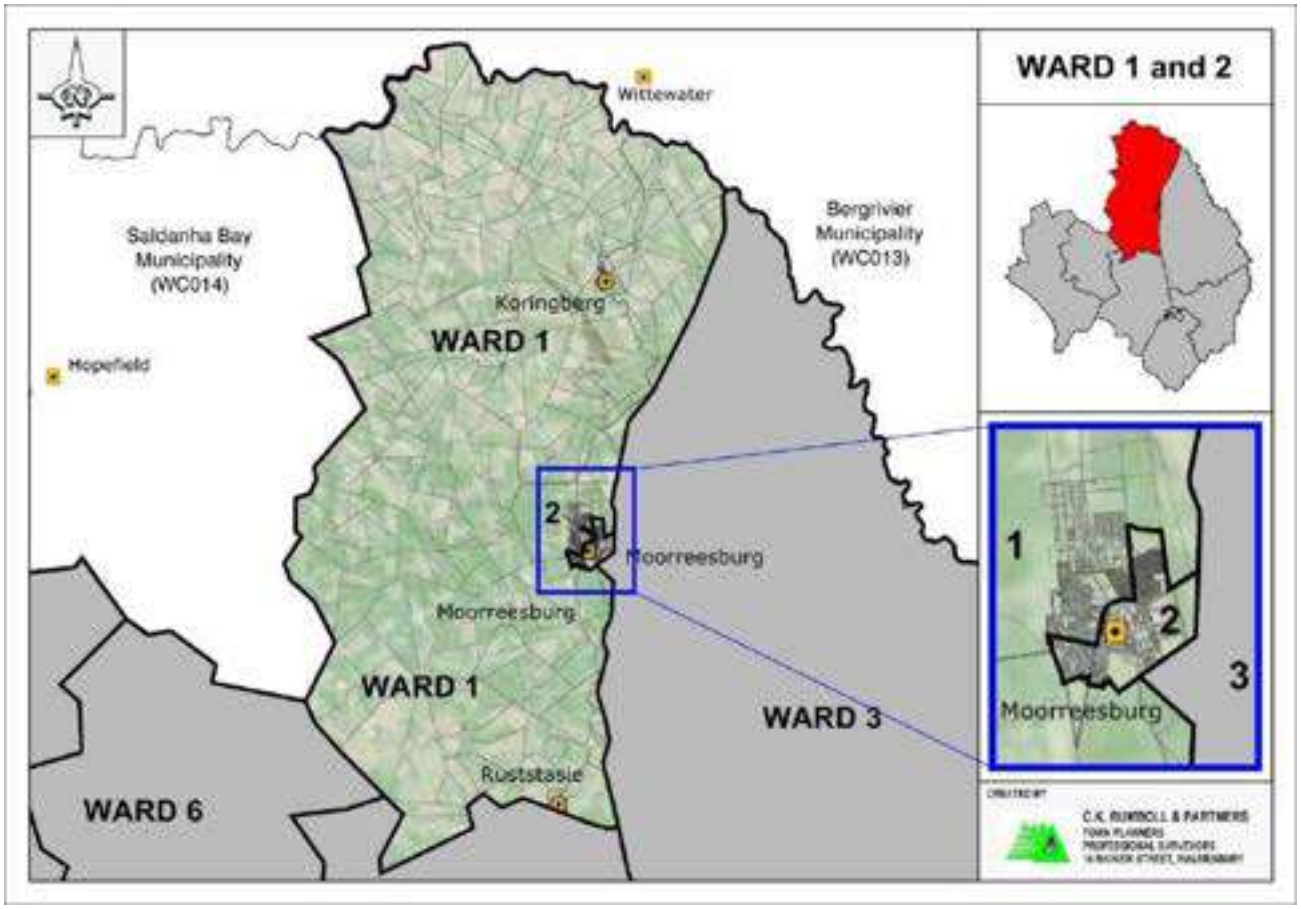
A settlement includes all actors and stakeholders who have vested intereset or are impacted by the socio-economic status of a settlement. A small town is a settlement of varying size (in population and geographical area) existing below intermediate cities in the settlement hierarchy, creating the spatial and economic link between the cities and rural areas and serves as a local node, which typically relies on natural resources and other functions, and is characterised by varying levels of resources, services, infrastructure, and a limited presence of effective governance structures/authorities.

For each settlement the structural elements of *Connectivity, Utilities, Social Infrastructure* and *Space* form the framework categories for proposals. These proposals are then followed by land use zone proposals, outlining the development potential in zones. The delineation of zones is aligned with the development proposals for each settlement[6]. For the region, the development proposals are aligned to spatial strategies:

[6] Support municipal guidelines: link LUMS & SDF: SPLUMA Section 12(5), 13, Section 14, 21(l)(o)

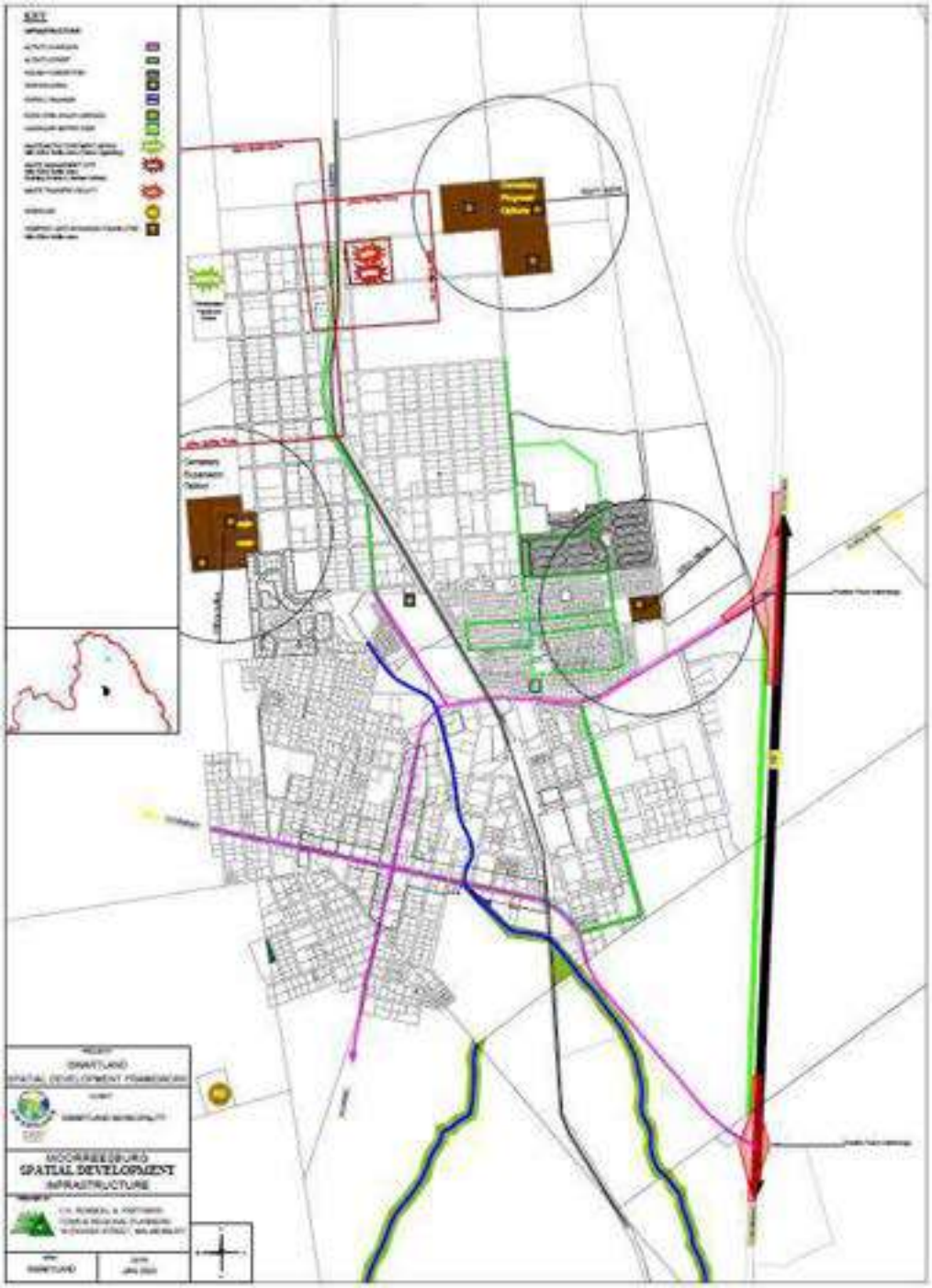
5.1 Wards 1 and 2: Moorreesburg, Koringberg and Rural Areas

Wards 1 and 2 are in the most northern part of the Swartland and include the settlements of Koringberg (Ward 1), Moorreesburg (Ward 1, 2 & 3) and Ruststasie (Ward1). The rural areas consist of extensive crop farming. The urban area of Moorreesburg is divided between Wards 1, 2 and 3.



5.1.1 Moorreesburg

Moorreesburg is located approximately 100 kilometres north of the Cape Metropole along the N7 route and 70 kilometres to the east of the West Coast towns of Langebaan and Saldanha. The town is centrally located in the northern part of the Swartland and is an important agricultural service centre to the extensive surrounding agricultural production area.



Objective 2: Proximate convenient and equal access

CONNECTIVITY			
	Elements	**No.**	**Proposals**
Protect	Main Roads:	1	N7, main movement network.
		2	Unhindered access to Cape Town.
		3	Locality along regional & national corridor.
	Roads:	4	R311 connector to Riebeek Valley.
		5	Dirt roads north to Koringberg.
		6	R307 south towards Darling.
	Activity Streets & Corridors:	7	Main & Long Street.
	Rail:	8	Operational railway connection.
Change	Main Roads:	9	Upgrade southern and northern entry points (increased safety of these intersections).
	Roads:	10	Upgrade road network between Moorreesburg and Darling (R307).
	Activity Corridors & Streets:	11	Strengthen Main & Long Streets' intersection.
		12	Develop commercial activities along roads parallel to and along Main and Long Streets.
	Rail:	13	Enhance rail as an alternative transport network between Cape Town and Bitterfontein.
	Pedestrian and cycle routes:	14	Build safe pedestrian walkways & bicycle routes between Rosenhof residential areas, along Main street to CBD (2 - 3 km).
		15	Improve disabled access.
Develop	Main Roads:	16	Develop Petroport at northern entry intersection.
		17	Develop industrial activity nodes to optimally use frontage towards N7.
		18	(Name streets of industrial area along N7).
	Roads:	19	Connectivity to West Coast (±70km).
	Rail:	20	Improve mobility: Investigate passenger coach between station and Rosenburg.
	Pedestrian and cycle routes:	21	Develop pedestrian walkways and bicycle routes along the No Go River (part of Open Space Network).

Objective 2: Proximate convenient and equal access

PUBLIC UTILITIES			
	Elements	**No.**	**Proposals**
Protect	Water:	22	Adequate water storage capacity: Byeneskop Reservoir (750kl capacity) stores water from Misverstand Scheme. Three reservoirs (9000kl capacity) store water from Withoogte Scheme (managed by WCDM).
	Waste Water:	23	Adequate waste water treatment capacity:
		24	Manage WWT plant capacity.
		25	Septic sewer in Hooikraal (±50 households).
	Bulk Electricity and Reticulation:	26	Adequate bulk electrical capacity: Manage allocation for planned developments.
	Roads and Storm water:	27	12 km of gravel roads, mostly in Hooikraal.
	Waste:	28	Transfer stations (weekly) for domestic waste removal and transport to Highlands.
	Safety and Risk Management Services:	29	Maintain WCDM Disaster Management unit including Fire Station.
		30	Maintain Police Station.
Change	Future Demand:	31	Provide adequate land for future bulk infrastructure expansion: reservoirs, overhead power lines, future roads and a water pipeline.
	Water:	32	Extend water provision to all properties.
		33	Manage adequate capacity for future demand as per "Water Services Development Plan":
			2017: 960,140 / 2022: 1044,634 / 2027: 1138,685 / 2032: 1243,485
		34	Reduce bulk water demand: 870 120kl per annum.
	Waste Water:	35	Manage & address unknown bulk pipeline carrying capacity.
		36	Upgrade treatment plant components.
	Bulk Electricity and Reticulation:	37	Manage adequate street lightning.
	Roads and Storm water:	38	Maintain gravel roads.
	Waste:	39	Maintain building material and garden waste site.
		40	Manage transfer stations.
	Safety and Risk Management Services:	41	Implement river maintenance and upgrade programme.

		42	Promote & support sustainable use of resources – e.g. water harvesting, alternative energy.
Develop	Future Demand:	43	Ensure adequate capacity of bulk infrastructure to support industrial expansion.
	Water:	44	Upgrade water reticulation infrastructure system & increase provision of stopcocks.
		45	Upgrade water pump stations and install an additional pump.
		46	Address potential impacts of climate change.
	Waste Water:	47	Provide formal treatment plant capacity for current & limited future demands.
		48	Change septic to flush sewer in Hooikraal.
	Bulk Electricity and Reticulation:	49	Upgrade obsolete electrical infrastructure.
	Roads and Storm water:	50	Upgrade storm water system in Long and Royal Street.
	Waste:	51	Establish a composting plant in either Moorreesburg or Malmesbury.
	Safety and Risk Management Services:	52	Address potential impacts of climate change.

Objective 1: Grow economic prosperity and facilitate economic sector growth and
Objective 4: Protect and grow place identity and cultural integrity

SPACE, BUILT			
	Elements	**No.**	**Proposals**
Protect	Heritage & Tourism:	53	Church town character, established by Dutch Reformed Church in 2nd half of 19th century, proclaimed as town in 1898 and received municipal status in 1909.
		54	Traditional grid pattern (urban structure) along two main access streets (Long & Main).
		55	Unique agricultural character as "Bread Basket" of Western Cape.
	Residential:	56	Urban Structure consisting of: - Lower density areas in southern and western precincts; - Central Business District (CBD); - Higher density areas in north east in Rosenhof (subsidized housing); - Very low density, rural, Hooikraal, on northern periphery; - Eclectic built form & distinctive style of church & administrative buildings.
	Commercial & Industrial:	57	CBD at intersection of two main access roads & along several secondary roads leading off main roads.
		58	Small secondary business node, in south western part of Rosenhof.
		59	Main industrial area, east of railway line with access towards N7.
		60	Significance as agricultural service centre supporting agricultural services and other unrelated light industries.
		61	Home of Administrative seat of West Coast District Municipality.
Change	Heritage & Tourism:	62	Support tourism related uses in the town to diversify the economy and create more opportunities.
		63	Improve information about heritage assets.
		64	Improve roadside signage and buildings in sensitive landscapes.
		65	Address loss of, and impact on cultural & heritage resources.
		66	Control alterations and demolitions of buildings older than 60 years.
		67	Conserve graded buildings, areas and features.
	Residential:	68	Develop higher density residential developments (flats) within and around CBD ("cupcake" principle).
		69	In principle maintain minimum erf sizes of 1900m², but allow for minimum erf size of 600m² in transition zone between Hooikraal and higher density residential areas.
		70	Promote mixed use, including residential in CBD.
		71	Provide different housing types to accommodate a wider market and support densification.
	Commercial & Industrial:	72	Diversify agricultural sector.
		73	Establish affordable & integrated commercial properties in Rosenhof. (Secondary CBD): MR_30, 2.8ha
		74	Support establishment of house shops along activity streets and home occupation in residential areas.
		75	Renew CBD: MR_25, 47.8ha in Zone F, E and D
		76	Explore medium development potential.
		77	And use optimally the "Growth Potential Study (2007)" attributing to: - Connectivity (N7 and railway); - Accessibility & proximity to Cape Town & West Coast; - Infrastructure (primary education).
Develop	Heritage & Tourism:	78	Utilise central location within West Coast Region.
		79	Promote landscape features of the Swartland as part of the tourism attraction.

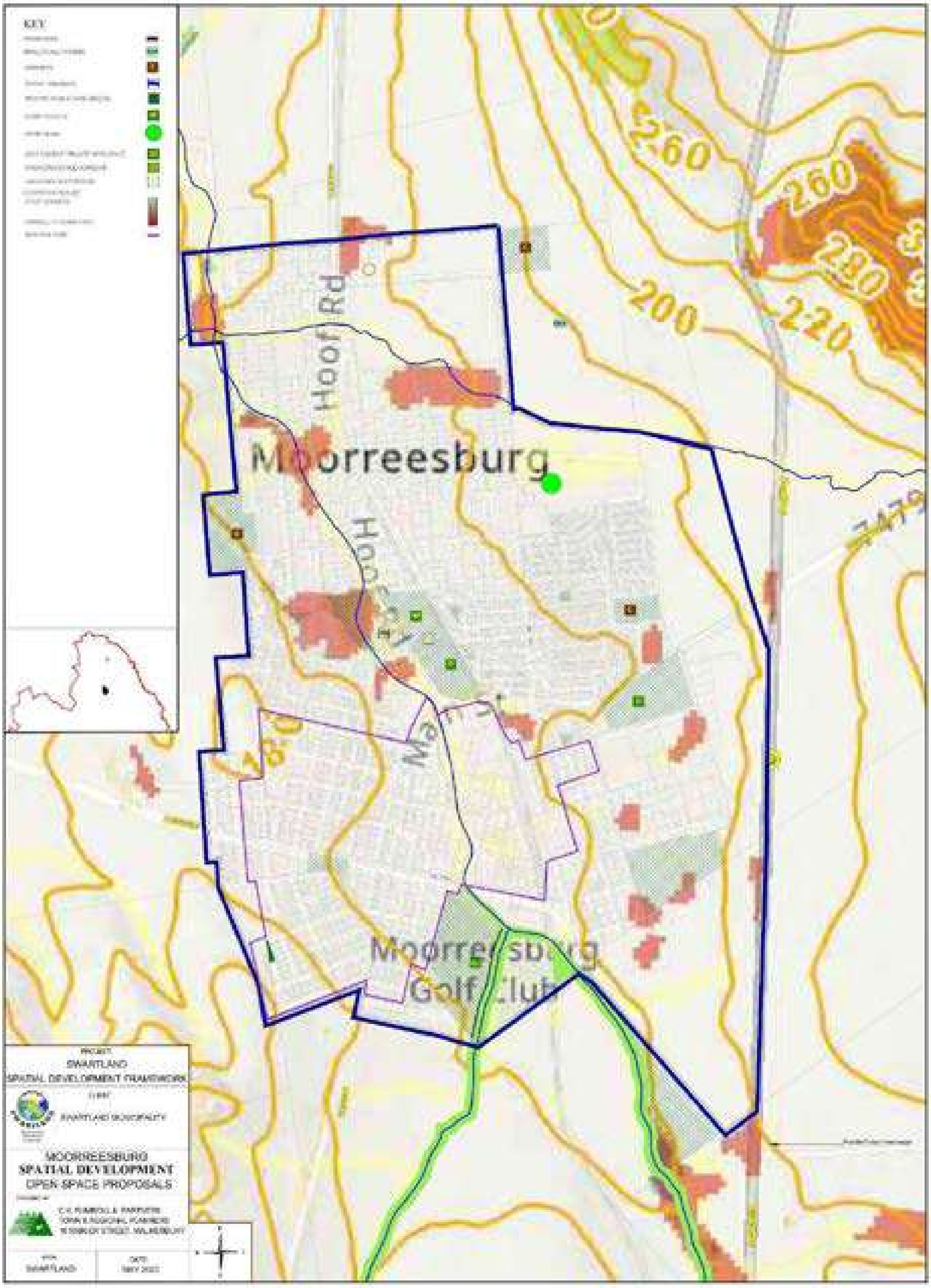
		80	Utilize heritage assets as tourism attractions. Acknowledge heritage resources' significance & need for protection.
		81	Revitalise station and mill as core nodes (agricultural character).
	Residential:	82	Support mixed uses in CBD including residential opportunities: MR_25, 47.8ha in Zone F, E and D
		83	Government residential developments, supported by Human Settlement programmes, will be supported.
		84	Provide subsidized housing & affordable land Register farm workers on housing waiting list.
		85	Promote residential development on Erf 3715 including uses such as businesses and social facilities (school, crèche and church).
		86	Provide land for future residential expansion on Erf 2876 to the east of Moorreesburg along the N7.
		87	Allow limited GAP housing extension east of Rosenhof.
		88	Increase density by 2027 from the current 5.2 units per hectare to 7 units per hectare in Moorreesburg.
		89	Provide 400.2ha land to accommodate residential growth for the next 20 years in Moorreesburg. Vacant Land Audit identified 56.4ha available for future growth in Moorreesburg.
	Commercial & Industrial:	90	Support a service industry and business node at intersections between access road and N7: MR_30, 2.8ha, and Zone C
		MR_35	Primary Business District
		91	Expand commercial areas along southern access road to Moorreesburg off the N7: MR_25, 47.8ha in Zone D
		92	Support agri-processing industries to allow value added products close to the source.
		93	Allow agricultural related industries.
		94	Develop a composting facility.
		95	Provide more industrial erven with easy access to N7.
			In Zone C: MR_03, 16.3ha; MR_04_1.5ha, MR_05, 1.7ha, MR_06, 2.4ha, MR_07, 7.9ha
			In Zone D: MR_07, 7.9ha and In Zone C & D: MR-02, 78.6ha
		96	Improve access (ownership) to industrial areas.

Objective 3: Sustain material, physical and social wellbeing

PUBLIC INSTITUTIONS			
	Elements	**No.**	**Proposals**
Protect	Social Infrastructure & Services:	97	Adequate social services and infrastructure to create safe living environments.
		98	Protect good infrastructure: sport facilities & well-known secondary education facility.
Change	Social Infrastructure & Services:	99	Locate community facilities (library, sport grounds and museum) in a central area between CBD & Rosenhof.
		100	Align provision of social infrastructure to norm to enhance safety.
		101	Promote Administrative seat of West Coast District Municipality.
		102	Promote multi-functional use and provide effective and functional recreational areas (e.g. children's play parks, day camping and picnic facilities) close to sport facilities and along No Go River.
		103	Allow for adequate expansion of cemeteries.
			Develop sportfields at Dirkie Uys School. 
Develop	Social Infrastructure & Services:	104	Promote & support adequate primary health & education facilities: crèches, secondary/tertiary facilities (agricultural skills focus).
		105	Promote the development of a Higher Technical School on Erf 3712.
		106	Expand & integrate sports facilities between Rosenhof & Moorreesburg CBD.
		107	Provide a community sports field in northern extension of Rosenhof.
		108	Provide a new cemetery for Moorreesburg. The proposed areas are located southwest and northeast of the town.

Objective 5: Protect ecological and agricultural integrity

SPACE, NATURAL			
	Elements	**No.**	**Proposals**
Protect	Natural and Conservation:	109	Scenic routes and vistas.
		110	Landscape of hills covered with wheat fields and scattered renosterveld Settlement located on plain, at foot of Neulfontein koppie.
	Waterways:	111	No Go River, running north south through centre of town, joins Berg River near Misverstand Dam.
		112	Moorreesburg stream, north of town, manipulated by agricultural activities.
	Vegetation:	113	Malmesbury Shale covered with Renosterveld and Coastal Fynbos.
Change	Natural and Conservation:	114	Prepare for potential threat of climate change on natural environment and production potential.
		115	Improve visual character of higher density residential, and in particular subsidised housing developments, though planting of trees along streets & developing functional open space areas.
		116	Support interactive development along open spaces where developments face the open space networks.
	Public & Private Open Space:	117	Provide street furniture & landscape central town.
		118	Beautify main town access points.
		119	Develop market areas in Sentrum Street & link to town square at Town Hall.
		120	Sport complex between Rosenhof and Moorreesburg CBD.
Develop	Natural and Conservation:	121	Create and protect open space areas inside and adjacent to urban (allow for movement between habitat areas along No Go River, natural areas in and around Hooikraal area, and Neulfontein koppie.
		122	Maintain setback lines along river systems (limit potential impacts and improve safety).
		123	Develop hiking trails, mountain bike trails and alternative uses for events facilities and venues.
		124	Green main activity routes.
	Public & Private Open Space:	125	Link open spaces e.g. main town square in front of Town Hall & small public area at bus stop in Main Road next to Rosenhof residential area.
		126	Improve intersection between Long and Main Street as public place.


KEY
Moorreesburg
Hoof Rd
Moorreesburg Golf Club
260
260
280
200
220
SWARTLAND
SPATIAL DEVELOPMENT FRAMEWORK
MOORREESBURG
SPATIAL DEVELOPMENT
OPEN SPACE PROPOSALS

LAND USE ZONE PROPOSALS FOR MOORREESBURG

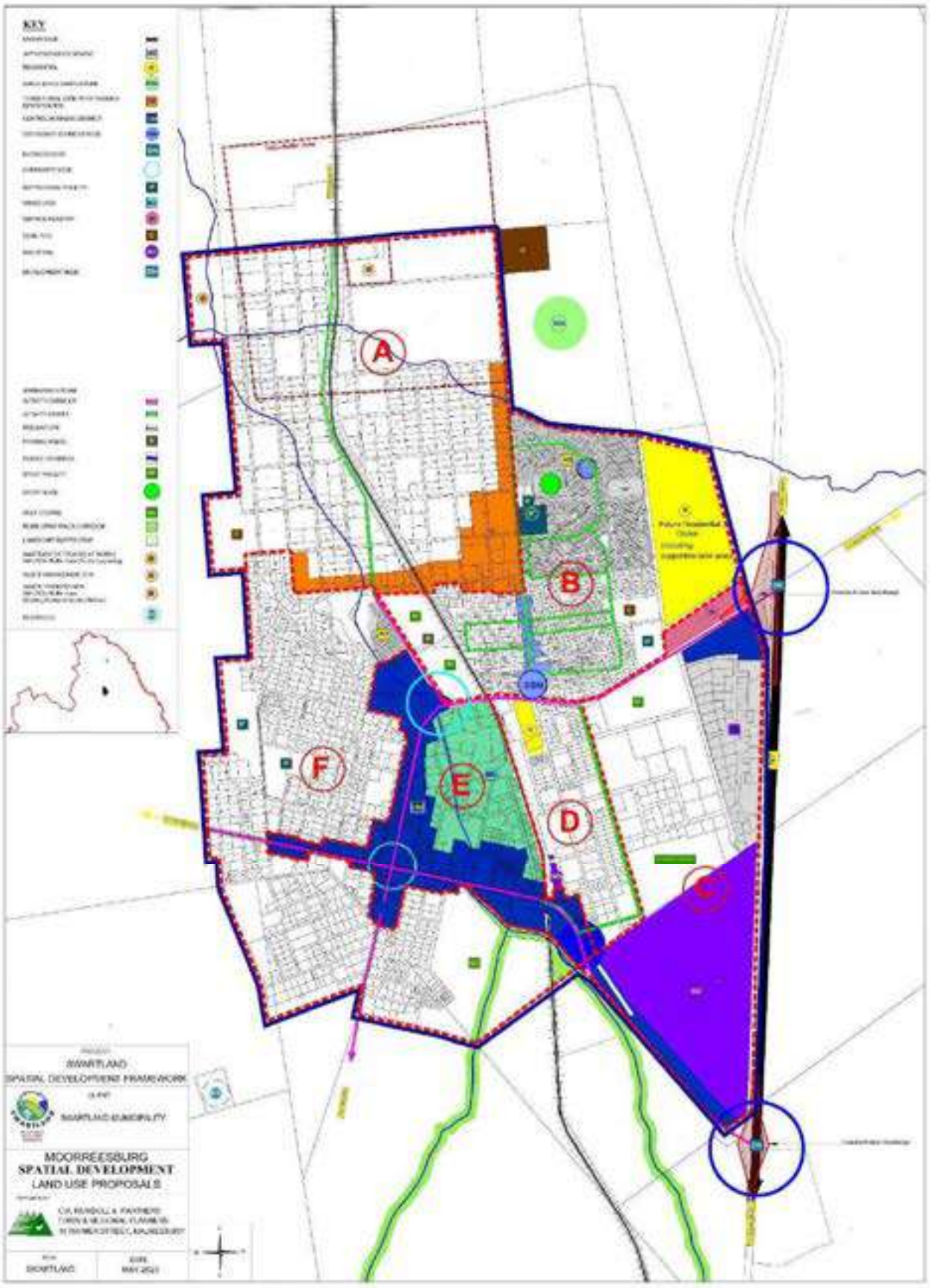
Refer to the land use zone map for Moorreesburg: The urban area of Moorreesburg is divided into six (6) zones (areas with common features) and the recommended land uses for the different zones are listed in the table below:

MOORREESBURG LAND USE ZONES		Low Density Residential Uses	Medium Density Residential Uses	High Density Residential Uses	Secondary Educational Uses	Place of Education	Professional Uses	Business Uses	Secondary Business Uses	Places of Worship	Institution	Guest houses	Authority	Sport/Recreational Facilities	Industries & Service Trade
A	Zone A is a low density rural residential area known as "Hooikraal" with a required minimum erf size of 1 900m². Densify on southern and eastern boundary of Hooikraal in transitional zone. Rehabilitation of a waste transfer station as composting and recycling plant.	X			X	X	X	X 1	X 1	X	X	X	X	X	X 4
B	Zone B is a high density residential area with relevant supporting uses and infrastructure. Support the expansion of business and other related mixed uses within the business nodes and along activity streets.	X	X	X 1,2	X	X	X	X 1,2	X 1,2	X	X	X	X	X	X 4
C	Zone C is the industrial node with the opportunity for expansion. This zone includes two commercial/transport growth nodes at the intersection of access roads with the N7. Limited commercial opportunities to be supported.					X	X	X	X	X	X		X	X 3	X
D	Zone D consists of mixed uses including residential, industrial and business functions.	X	X	X	X	X	X	X	X	X	X	X	X	X	X
E	Zone E represents the Central Business District. Strengthen the area as the business core of the town. Allow for various mixed uses in the area between CBD and railway line which include residential, commercial and light industries	X	X	X	X	X	X	X	X	X	X	X	X	X	X
F	Zone F is mainly a low density residential area, with the golf course as a supportive sports facility. Allow for expansion of the golf course in the southern direction. The area mainly provides opportunities for infill mixed density residential uses and other supporting social facilities.	X	X	X 1	X	X	X	X 1	X 1	X	X	X	X	X	X 4

(1) Along activity streets/corridors
(2) At identified business and mixed use nodes
(3) Caravan parks on show grounds
(4) Only service trade

Business Uses e.g. shop, supermarket, restaurant, offices, service station
Place of Education e.g. Schools, places of instruction
Professional Uses e.g. offices like doctors, dentists, attorneys, architechts, engineers and town planners.
Secondary Business Uses e.g. neigbourhood bussines uses such as house shops, small offices and home occupation. House taverns only to be allowed along activity streets in residential areas on discretion of the Municipality.
Secondary Educational Uses e.g. Crèches/day care

*Find description of proposed land uses for development zones in Annexure 4


KEY
A
B
C
D
E
F
SWARTLAND
SPATIAL DEVELOPMENT FRAMEWORK
MOORREESBURG
SPATIAL DEVELOPMENT
LAND USE PROPOSALS

5.1.2 Koringberg

Settled amongst rolling hills in an extensive agriculturally productive area, Koringberg is the most northerly located urban settlement in the Swartland. Access is off the N7 via Divisional Road 1173, which also links to Hopefield. The town is characterized by gravel streets and large single residential erven utilised for urban agriculture, with keeping of animals and olive orchards, features which add to the uniqueness of the town.

Objective 2: Proximate convenient and equal access

CONNECTIVITY			
	Elements	**No.**	**Proposals**
Protect	Roads:	1	Divisional Road 1173 approximately 8km off the N7: Main access route, Main Road and main activity route.
		2	Serves surrounding farms.
		3	Other link roads: to Moorreesburg.
	Activity Corridors & Streets:	4	Main Road runs along railway line through town. Commercial uses located along this route.
		5	Wilge Street going onto Zambezi Street, both are activity streets, runs north east and parallel to and connected to Main Street by connectors.
		6	Rautenville: Uitsig and Leeubekkie Street have limited commercial opportunities (i.e. house shops).
	Rail:	7	Cape Town to Bitterfontein railway line.
Change	Roads:	8	Divisional Road 1173 and other: Maintain gravel roads to keep rural character, improve mobility of local community to access economic opportunities in neighbouring towns).
	Activity Corridors & Streets:	9	Support mixed uses along main road between CBD and Rautenville (social & economic integration).
		10	Upgrade Main, Sterling, Wilge Streets and connection street to Rautenville.
		11	Maintain taxi rank in Rautenville.
	Rail:	12	Enhance passenger use between Koringberg and Moorreesburg.
	Pedestrian / cycle routes:	13	Develop hiking trails and mountain bike routes in the surrounding natural areas including Koringberg and Swartberg.
Develop	Roads:	14	Provide supporting infrastructure to improve mobility of community and tourists.
		15	Upgrade approximately 7 km gravel**.**
	Activity Corridors & Streets:	16	Maintain taxi rank at Rautenville entrance.
		17	Upgrade Leeubekkie and Uitsig Streets.
	Rail:	18	Enhance tourism use of rail between Koringberg and Moorreesburg.
	Pedestrian / cycle routes:	19	Build safe pedestrian walkway between residential area of Rautenville and CBD. Surface, shade and lighten adequately.

Objective 2: Proximate convenient and equal access

PUBLIC UTILITIES			
	Elements	**No.**	**Proposals**
Protect	Water:	20	Koringberg is served by the Misverstand Scheme: Reservoir has a capacity of 200kl. Future extensions will take place next to the existing reservoirs.
	Sewerage and Sanitation:	21	Subsidised housing is connected to a reticulated sanitation system with sewerage dams (upgraded in 2001), and located north east of town. Remainder of town is served with on-site septic tanks, which could contaminate ground water.
	Electricity:	22	Eskom provides electricity & reticulation.
	Waste:	23	Domestic waste is removed weekly & transported to Highland landfill, Malmesbury.
		24	Has a building material and garden waste dump site.
Change	Future Demand:	25	Identify areas earmarked for expansion of bulk infrastructure and limit impact on Swartland landscape.
	Water:	26	Extend Water provision to all properties.
		27	Manage adequate capacity for future demand as per "*Water Services Development Plan*": 2017: 57 681 | 2022: 62 611 | 2027: 68 010 | 2032: 73 923
	Sewerage and Sanitation:	28	Expand flush sewer system to include the rest of the town. Flush sewer system limited to Rautenville.
		29	Increase capacity of suction tank truck service which currently cannot accommodate future expansion.
		30	Expand oxidation dam system with insufficient capacity for current and future demand.
		31	Upgrade or provide a new sewerage system.
	Electricity:	32	Increase inadequate street lighting.

	Safety and Risk Management Services:	33	Support sustainable & effective use of natural resources through alternative methods i.e. alternative energy, water wise developments.
Develop	Future Demand:	34	Ensure bulk infrastructure planning is in line with SDF growth proposals.
	Water:	35	Build an additional 250 kl reservoir.
		36	Harvest rainwater in tanks on residential erven.
	Sewerage and Sanitation:	37	Urgently upgrade of oxidation dam system to provide for current and future demand.
		38	Increase suction truck service capacity.
		39	Expansion of existing service can be accommodated on the existing site.
	Electricity:	40	Develop alternative energy sources.

Objective 1: Grow economic prosperity and facilitate economic sector growth and
Objective 4: Protect and grow place identity and cultural integrity

SPACE, BUILT			
	Elements	**No.**	**Proposals**
Protect	Heritage & Tourism:	41	Church town character. Town established by Dutch Reform church in 1923 on the farm Brakfontein, which changed to Koringberg.
		42	The spring on Brakfontein, was used by the Khoisan leader, "Harry die Strandloper".
		43	Residential centre within an extensive agricultural area, home to farm workers, city dwellers on weekends, artists and artisans.
		44	Urban structure is a traditional grid pattern.
		45	Large plots shaped by extensive agricultural landscape.
	Residential:	46	Urban structure of residential areas, with lower density residential areas in southern part adjoining CBD, with strong rural character.
		47	Compact town with a small CBD along Main Road and a primary school located in higher density subsidised residential area of Rautenville.
		48	Built form of existing dwellings provides a historic wheat farm and railway character.
		49	Minimum erf size of 500m².
		50	Expansion in Koringberg is limited along the foothills of Koringberg "koppie".
	Industrial/ Commercial:	51	CBD location along entry road (Main Road).
		52	Industrial areas: west of railway line along Sterling Street and another on the south western periphery around the Silos.
		53	Service industries and small scale agri-processing found on the north eastern periphery of town close to Rautenville.
		54	Industrial development opportunities limited to agri-processing, grain storage and agri-tourism.
Change	Heritage & Tourism:	55	Develop architectural guidelines to maintain and enhance town character.
		56	Identify and preserve streets & buildings with unique historical character.
		57	Improve visual quality of the town and beautify and develop open space network.
		58	Control alterations and demolition of heritage buildings.
		59	Conserve graded buildings, areas, streets and features.
		60	Recognise development potential is very low.
	Residential:	61	Strategically densify providing medium density housing types (group and town houses and second dwellings).
		62	Support compact form of Koringberg with medium and higher density development along higher order roads with main road as activity corridor.
		63	Integrate new residential developments and locate in close proximity to job opportunities and social infrastructure.
		64	Support different types of housing subject to directives of immediate surrounding area.
	Industrial/ Commercial:	65	Expand commercial areas and develop along Rautenville access route.
		66	Allow commercial and mixed use in CBD, along Main Road and other activity routes.
		67	Support house shops/home occupation in residential areas along activity streets.
		68	Support integrated development and mixed-use activities in neighbourhoods.
		69	Promote light industrial development opportunities e.g. wineries, breweries, etc.
Develop	Heritage & Tourism:	70	Promote Koringberg and surrounding rural area as a tourism attraction. (Bread basket of the Western Cape).
		71	Establish high quality tourist accommodation by allowing holiday accommodation and housing.
		72	Protect Heritage streets by promulgating an overlay zone and compile guidelines for future development.
		73	Focus investment on social services & tourism.

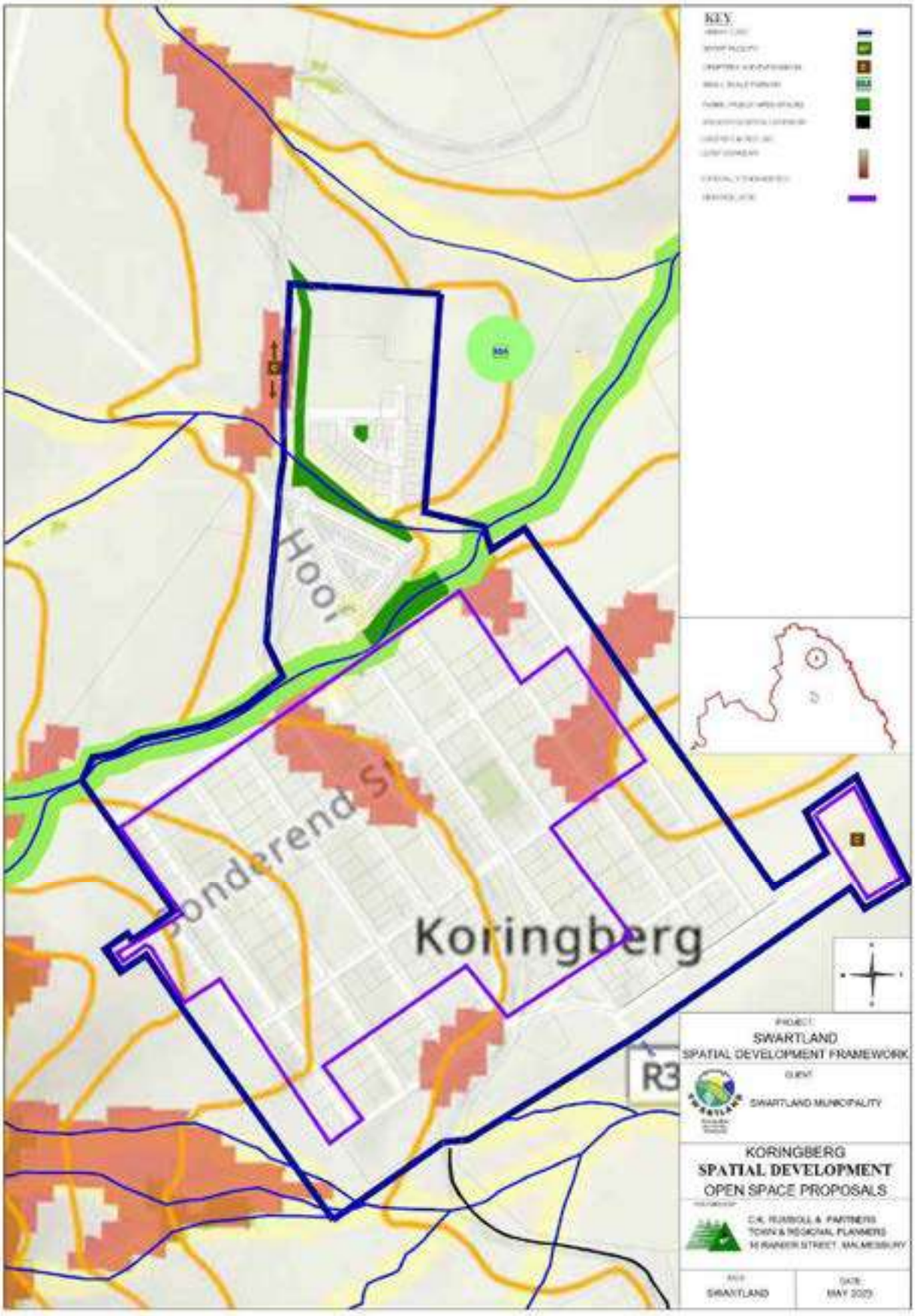
		74	Accommodate growth by internal subdivision of larger erven in line with character of town.
	Residential:	75	Develop in accordance with available infrastructure and services.
		76	Plan for expansion of bulk infrastructure to support future residential growth.
		77	Enrol farm workers on waiting lists.
		78	Allow farm owners opportunities in town to provide farm worker housing.
		79	Increase density by 2027 from the current 4.9 units per hectare to 5.5 units per hectare in Koringberg.
		80	Increase density of 4.9 units per hectare to change to 5.5 du/ha through internal subdivision and intensification of uses.
		81	Provide 35.2ha land to accommodate residential growth for the next 20 years in Koringberg.
		82	Provide an opportunity for future residential expansion on Farm RE/329.

Objective 3: Sustain material, physical and social wellbeing

PUBLIC INSTITUTIONS			
	Elements	**No.**	**Proposals**
Protect		83	Provide skills development in agri-tourism industry to amplify economic opportunities.
Change		84	Develop facilities for early childhood development and education.
		85	Allow expanded use of school sport grounds by community.
		86	Facilitate expansion of the private cemetery.
Develop		87	Develop Erf 499 as satellite library and early childhood development facility.
		88	Support crèches within residential areas.
		89	Develop community gardens in Rautenville using purified water from Waste Water Treatment Works.

Objective 5: Protect ecological and agricultural integrity

SPACE, NATURAL			
	Elements	**No.**	**Proposals**
Protect	Natural conservation:	90	Landscape of undulating hills and settlement Located at foothills of highest "koppie", Koringberg.
	Waterways:	91	A water course forms the northern western edge and midway eastwards crosses the settlement. The water course need and needs protection. A buffer of 32 meter no development buffer, measured form the bank of the river, should be adhere to and riverbank vegetation should be controlled.
	Vegetation:	92	Some intact natural vegetation surrounds the town.
		93	Clusters of Blue Gum trees characterize the town.
	Public & Private Open Spaces:	94	Entry to town is a definite entry point.
		95	Space areas include: central square in town, play park and sports ground in Rautenville, showground, cemetery (private, church owned), river corridor along the northern boundary. The cemetery has sufficient capacity with no need for expansion.
Change	Natural conservation:	96	Maintain and conserve the stream on northern periphery of town.
		97	Create and develop conservation corridors and open space networks linking natural and urban areas, the river area on northern periphery within Koringberg and Koringberg "koppie".
		98	Integrate open space network and pedestrian walkways along main activity routes between CBD and Rautenville.
		99	Enter into stewardship agreements with Cape Nature for conservation worthy open space system.
	Public & Private Open Spaces:	100	Enhance entry to town.
Develop	Natural conservation:	101	Develop and market hiking and mountain bike trails in natural areas in and around urban areas.
		102	Plant trees along routes to create between open spaces.
		103	Develop open space areas in Rautenville and plant trees and provide street furniture.
		104	Maintain the relevant setback lines along the river to limit potential impact on environment and safety of areas.
	Public & Private Open Spaces:	105	Upgrade central market square.
		106	Upgrade other public areas.


KEY
Hoof
Sonderend St
Koringberg
R3
SWARTLAND
SPATIAL DEVELOPMENT FRAMEWORK
SWARTLAND MUNICIPALITY
KORINGBERG
SPATIAL DEVELOPMENT
OPEN SPACE PROPOSALS
SWARTLAND
MAY 2023

LAND USE ZONE PROPOSALS FOR KORINGBERG

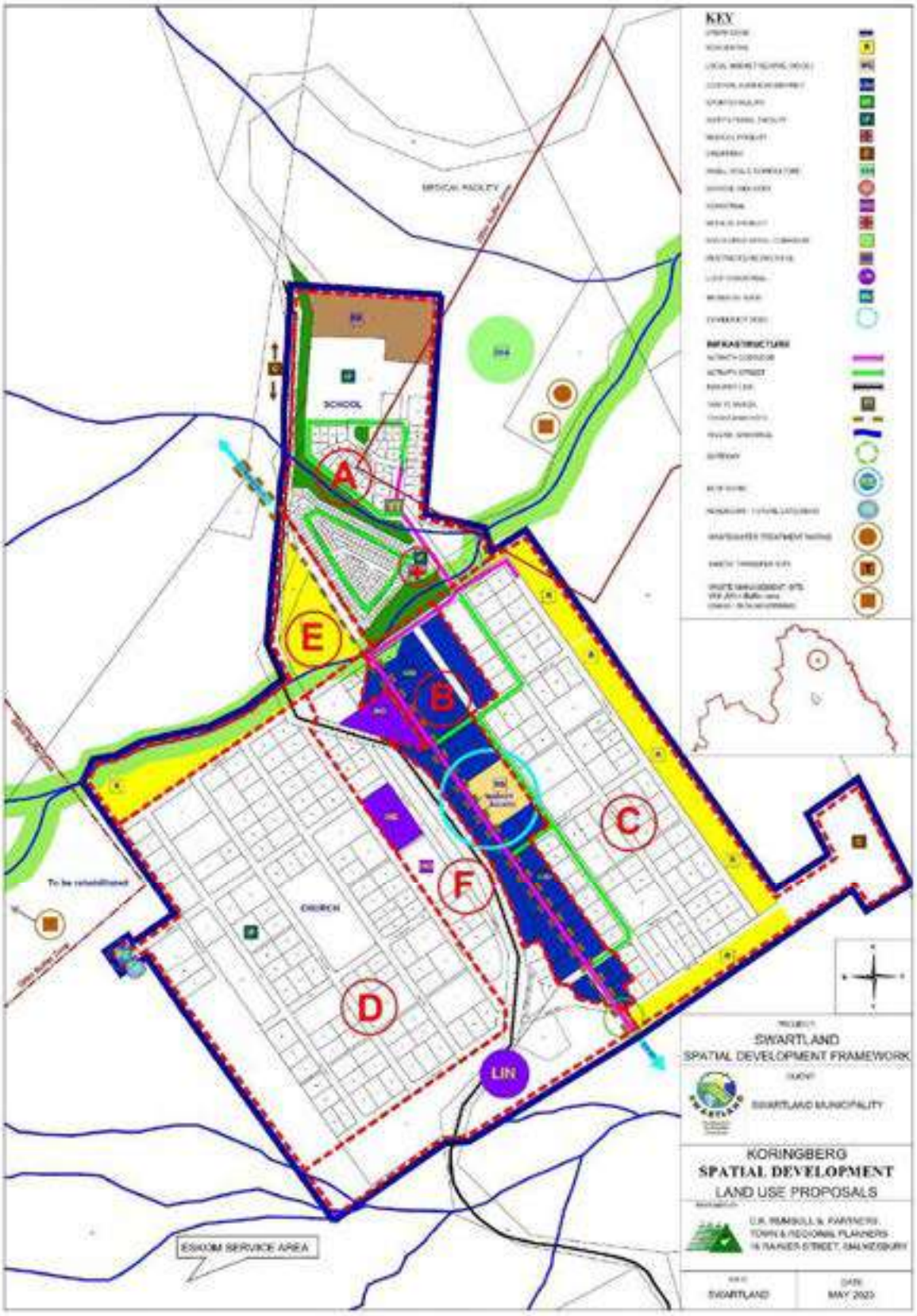
Refer to the land use zone map for Koringberg: The urban area of Koringberg has been divided into six (6) zones (areas with common characteristics) with the relevant development potential relating to specific land uses for every zone.

KORINGBERG LAND USE ZONES		Low Density Residential Uses	Medium Density Residential Uses	High Density Residential Uses	Secondary Educational Uses	Place of Education	Professional Uses	Business Uses	Secondary Business Uses	Place of Worship	Institution	Guest houses	Authority	Sport/Recreational Facilities	Industries & Service Trade
A	Zone A is a high density residential area known as "Rautenville" with supportive social services and limited opportunities for infill development. Allow for limited commercial opportunities.	X	X	X 2	X	X	X	X 1	X 1	X	X	X	X	X	X 5
B	Zone B represents the Central Business District.	X	X	X	X	X	X	X	X	X	X	X	X	X	X 5
C	Zone C is a low density residential area on the eastern boundary of the town. Expansion opportunities for residential development are proposed on the north- and south-eastern periphery.	X	X		X	X	X	X 1	X 1	X	X	X	X	X	X 5
D	Zone D is a low density residential area at the foothills of the Koringberg.	X	X		X	X	X			X	X	X	X	X	
E	Zone E provides opportunities for further residential development. Extension should be sensitive to the existing surrounding area.	X	X		X				X 4	X	X	X	X		
F	Zone F represnts limited industrial and residential functions.	X	X		X		X	X	X	X	X	X	X		X 3

(1) Along activity streets/corridors
(2) Flats along activity streets
(3) Only Service trade & light industries
(4) At proposed future residential development nodes
(5) Only service trades

Business Uses e.g. shop, supermarket, restaurant, offices, service station
Place of Education e.g. Schools, places of instruction
Professional Uses e.g. offices like doctors, dentists, attorneys, architechts, engineers and town planners.
Secondary Business Uses e.g. neigbourhood bussines uses such as house shops, small offices and home occupation. House taverns only to be allowed along activity streets in residential areas on discretion of the Municipality.
Secondary Educational Uses e.g. Crèches/day care

*Find description of proposed land uses for development zones in Annexure 4


KEY
SCHOOL
CHURCH
A
B
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LIN
To be rehabilitated
ESKOM SERVICE AREA
SWARTLAND
SPATIAL DEVELOPMENT FRAMEWORK
SWARTLAND MUNICIPALITY
KORINGBERG
SPATIAL DEVELOPMENT
LAND USE PROPOSALS
SWARTLAND
MAY 2023

5.1.3 Ruststasie

Ruststasie is located approximately 16 kilometres to the south of Moorreesburg, almost halfway between Moorreesburg and Malmesbury to the west of the N7. Access to the town is via a gravel link road off the N7 that links the N7 with the R45 to Hopefield.

Objective 2: Proximate convenient and equal access

CONNECTIVITY			
	Elements	**No.**	**Proposals**
Protect	Roads:	1	Access via a minor road off the N7 that also serves as a link road between the N7 and the R45 across the surrounding farms.
	Rail:	2	Cape Town to Bitterfontein railway line.
Change	Roads:	3	Maintain gravel roads to keep rural character, improve mobility of local community to access economic opportunities in neighbouring towns.
	Rail:	4	Maintain and encourage the use of the railway line for the transport of agricultural products.
Develop	Roads:	5	Support the development along central activity street.
	Rail:	6	Enhance agricultural use of railway line.

Objective 2: Proximate convenient and equal access

PUBLIC UTILITIES			
	Elements	**No.**	**Proposals**
Protect	Water:	7	Water to Ruststasie is provided directly from the Voëlvlei Dam via the West Coast District Municipal pipeline system.
	Sewerage and Sanitation:	8	Dwellings make use of onsite sewerage systems.
	Electricity:	9	Eskom provides electricity & reticulation.
	Waste:	10	Domestic waste is removed weekly & transported to Highland landfill, Malmesbury.
Change	Water:	11	Extend Water provision to all future subdivisions for densification.
	Sewerage and Sanitation:	12	Future subdivisions of properties will be required to make use of a contained systems that will need to be pumped and disposed of at the sewerage treatment plant.
	Safety and Risk Management Services:	13	Support sustainable & effective use of natural resources through alternative methods i.e. alternative energy, water wise developments.
Develop	Water:	14	Support harvesting of rain water.
	Sewerage and Sanitation:	15	Contained systems will need to be pumped and disposed of at the sewerage treatment plant.
	Electricity:	16	Support the development of alternative energy sources.

Objective 1: Grow economic prosperity and facilitate economic sector growth and
Objective 4: Protect and grow place identity and cultural integrity

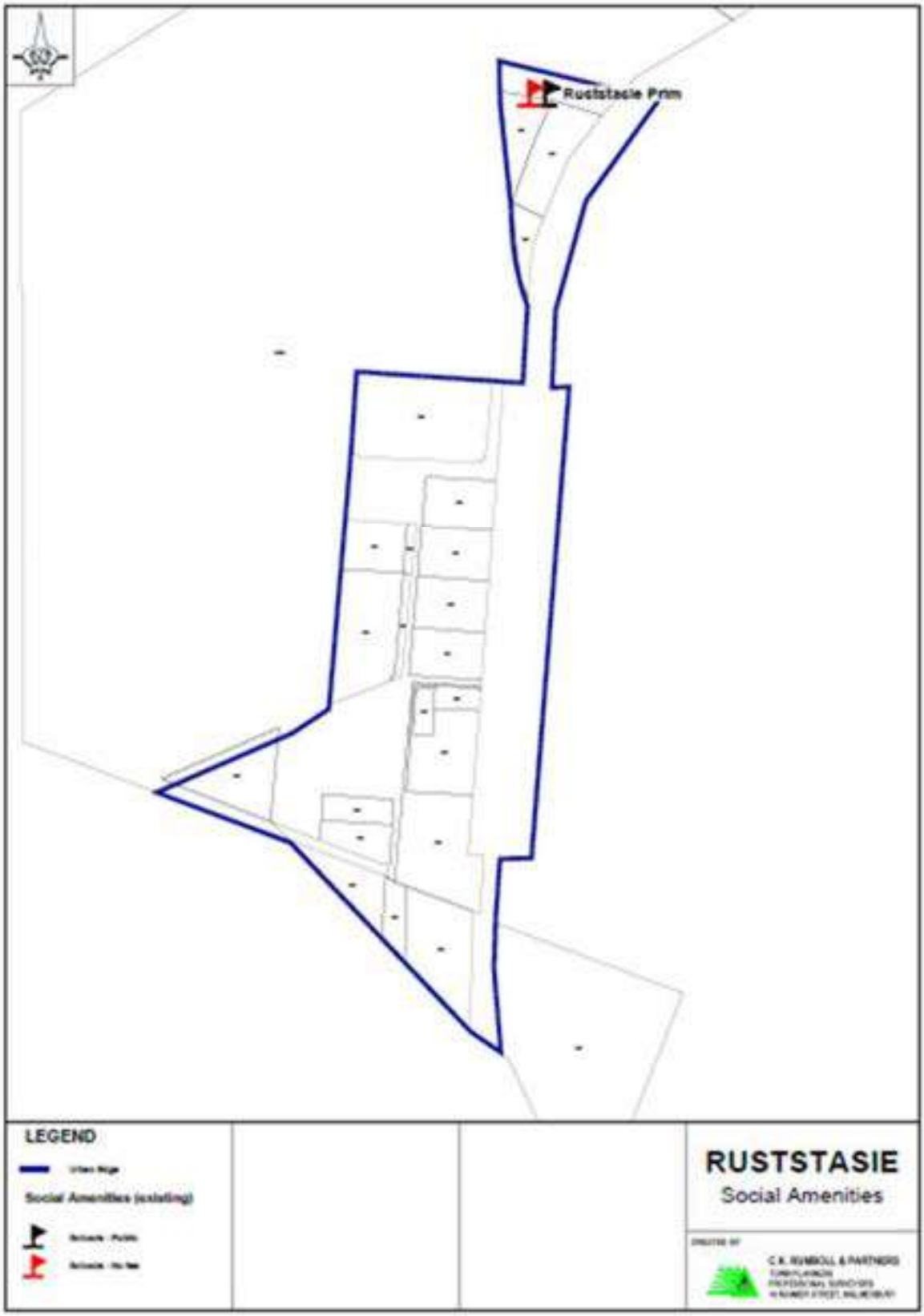
SPACE, BUILT			
	Elements	**No.**	**Proposals**
Protect	Tourism:	17	Protect existing community hall and tourist facility.
	Residential:	18	Protect rural residential characteristics of the town.
	Industrial/ Commercial:	19	Limited commercial opportunities exist.
Change	Tourism:	20	Improve visual quality of the town and beautify to support rural character.
	Residential:	21	Support infill residential development through subdivision of larger erven.
	Industrial/ Commercial:	22	Support commercial development for local needs and to support local needs.
Develop	Tourism:	23	Support small scale tourist opportunities.
	Residential:	24	Subdivision to take surrounding area and possible impacts into consideration.
	Industrial/ Commercial:	25	Support commercial development along activity street.

Objective 3: *Sustain material, physical and social wellbeing*

PUBLIC INSTITUTIONS			
	Elements	**No.**	**Proposals**
Protect		26	Support the important role that the Primary School plays in the education of children for the surrounding farm workers.
Change		27	Develop facilities for early childhood development.

Objective 5: Protect ecological and agricultural integrity

SPACE, NATURAL			
	Elements	**No.**	**Proposals**
Protect	Natural conservation:	28	Surrounding landscape of undulating hills.
	Vegetation:	29	Inside town clusters of Blue Gum trees characterize the town.
	Public & Private Open Spaces:	30	The central area is characterised by the clustering of blue gum trees.
		31	The grain silos are a dominant feature in the surrounding rural landscape, but due to their relationship with agricultural functions they blend into the agricultural landscape.
Develop	Natural conservation:	32	Internal development to consider the existing surrounding character and rural landscape.


Ruststasie Prim
LEGEND
Social Amenities (existing)
RUSTSTASIE
Social Amenities

5.1.4 Rural areas of Ward 1 and 2

The proposals below are ward specific. Any proposal that extends across ward boundaries was documented as part of the regional proposals.

Proposals are grouped according to the five objectives. Proposals per objective differentiate, where appropriate, between agriculture and tourism.

Regional proposals according to the five objectives follow below:

Objective 1: Grow economic prosperity and facilitate economic sector growth [Economic Environment]

Space	Agriculture	Tourism
Industrial	Support agricultural industries e.g. bag silos, and composting facilities.	
Commercial	Develop a node at the entry point of Moorreesburg.	
	Strengthen value chain, particularly in Koringberg.	Encourage film industry uses.
	Support development of extensive agricultural units due to limited access to water (sustaining increased input cost of crop farming) except along Berg River.	Promote festivals building agricultural brand i.e. Bread Festival or Bazaar in Koringberg, "Ploegdag" & an annual Swartland Agricultural Show.
Residential	Development of subsidized housing in Koringberg and Moorreesburg.	
Tourism	Develop design and development parameters for settlements to ensure the protection of the visual landscape (Koringberg "koppies" as the backdrop).	Promote heritage resources e.g. Hooggelegen (c1709) first and oldest farm in the Swartland.
		Support resorts & holiday accommodation along Berg River.
Waterways	Create open space network along No Go River through Moorreesburg and along the stream in Koringberg.	Support development of accommodation & support services along Berg River for Berg River Canoe Marathon.
	Support aqua culture.	

Objective 2: Proximate convenient and equal access [Economic Environment]

	Agriculture	Tourism
N7	Optimise links to markets (Cape Town & Windhoek): Dual carriage way between Cape Town and Malmesbury increased accessibility & reduce travel time. Develop nodes at N7 intersections and where SANRAL criteria allow nodes. - Nodes that blend in with surrounding agricultural landscape. - Nodes focus on tourism and agricultural development and support services.	
R311	Strengthen the links with West Coast, Hopefield (R311 and R45), Riebeek Valley (R311) and adjoining municipalities including Berg River, Drakenstein and Cape Metropole. Strengthen the link between N7 & R45.	
Railway	Support private operators providing alternative transport between Malmesbury & Moorreesburg.	Implement special train trips between Moorreesburg & Koringberg (Grain and Canola fields, rolling hills and railway line to Bitterfontein).

Objective 3: Sustain material, physical and social wellbeing [Social Environment]

No specific proposals for wards 1 and 2 to support this objective.

Objective 4: Protect and grow place identity and cultural integrity. [Built Environment]

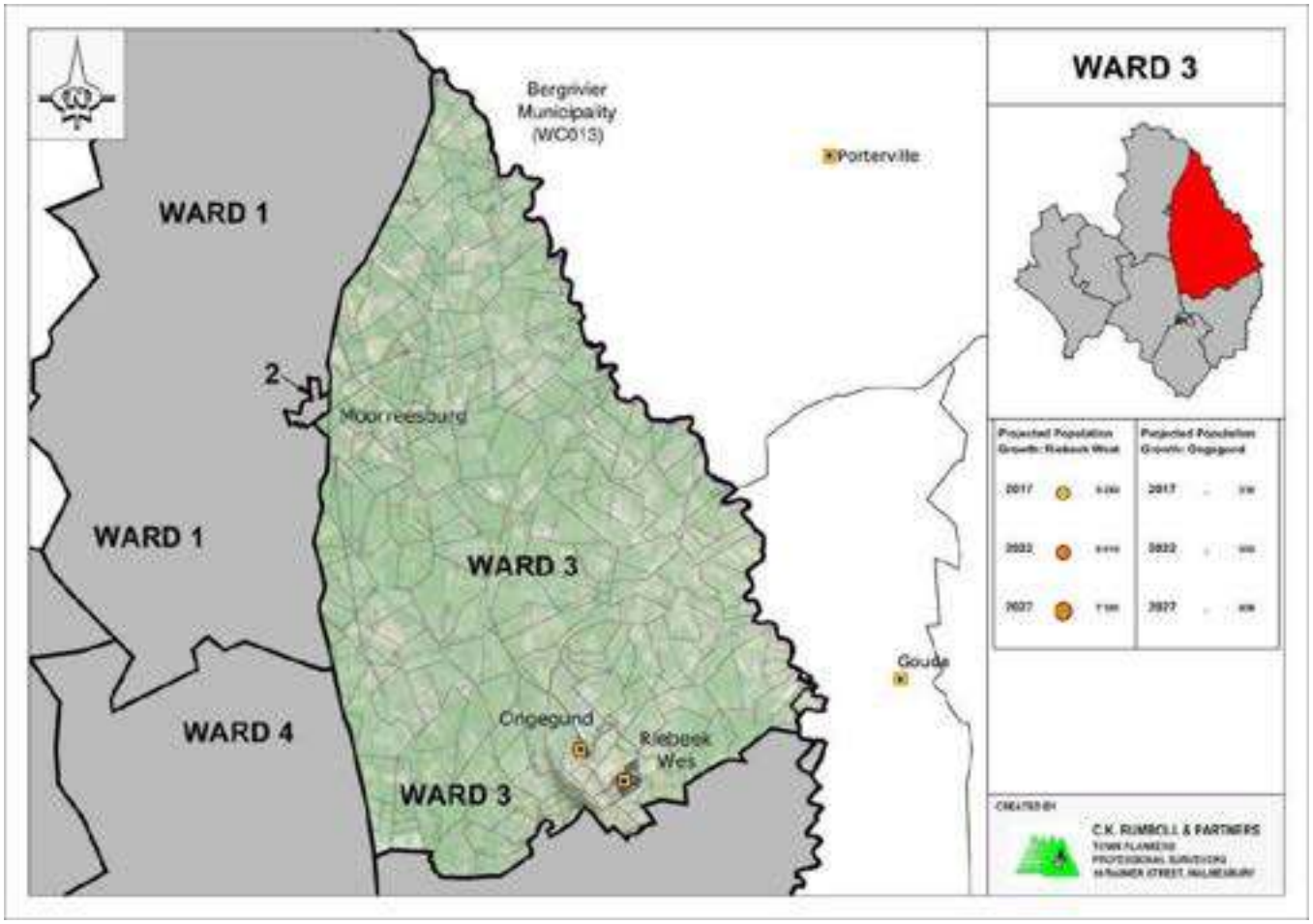
Administrative	Develop Moorreesburg as regional & Agricultural service centre. Support Koringberg and Ruststasie as rural settlements.
Heritage tourism route	Develop a tourism rail route along N7 between Kalbaskraal and Koringberg (start/end at station buildings & include rail experience). Develop the doll museum in Koringberg as a destination. Protect all and promote some of the 80 rural sites surveyed in Swartland Rural Heritage Survey 2014 in Ward 1: Grade 3 A (high local significance) – 1: Grade 3 B (some local significance) – 53: Grade 3C (limited local significance) – 22: No grading (no heritage resource) – 4.

Objective 5: Protect ecological and agricultural integrity [Biophysical or Natural Environment]

Waterways	Create open space network along No Go River through Moorreesburg and along the stream in Koringberg.

5.2 Ward 3: Riebeek West, Ongegund, Misverstand Dam and Rural Areas

Ward 3 forms the north eastern part of the Swartland next to the Berg River. This area contains extensive agricultural areas and includes the urban areas of Riebeek West and Ongegund in the Riebeek Valley, located along the foothills of the Kasteelberg.



5.2.1 Riebeek West

Riebeek West is located in the east of the Swartland District, approximately 6 kilometres north of Riebeek Kasteel, in the Riebeek Valley. The town is close to the slopes of the Kasteelberg, surrounded by intensively cultivated agricultural activities including some of oldest wineries in South Africa, namely Groenrivier, Allesverloren and Brandwag. Access to Riebeek West is from the R311, the main traffic route in the Riebeek Valley that connects with the N7 at Moorreesburg, and the R45 between Malmesbury and Hermon.

Objective 2: Proximate convenient and equal access

CONNECTIVITY			
	Elements	**No.**	**Proposals**
Protect	Roads:	1	Voortrekker Street or R311 (Road 227).
		2	Gravel roads connecting to farms.
	Activity Streets & Corridors:	3	High accessibility of Merindal, Hof, Smuts, Kerk and Station Streets.
Change	Roads:	4	Improved safety along Voortrekker Street: Reduce road width, raise pedestrian crossing, create island, and provide street furniture and parking - **avoiding large parking lots.**
		5	Enhance appearance of town entrances through tree planting, street furniture and pedestrian walkways.
	Activity Streets & Corridors:	6	Beautify activity streets in town.
		7	Increase safety.
		8	Promote mixed use.
		9	Concentrate development of higher order uses along activity streets.
		10	Facilitate development opportunities for local entrepreneurs.
	Pedestrian and Bicycle routes:	11	Improve accessibility of sidewalks, road crossings and pedestrian walkways for disabled.
		12	Provide an environment that supports recreational/sport events along R311 to enhance tourism (marathon, bicycle race).
Develop	Roads:	13	Upgrade, beautify (landscape) & maintain Voortrekker as main activity corridor.
		14	Support mixed use developments along Voortrekker Street and activity streets as movement network to capitalise on the N7 connection south of Moorreesburg and R45 (Malmesbury to Hermon).
	Activity Streets & Corridors:	15	Develop guidelines for commercial facades, advertising signs and information signs along Voortrekker Street to align and enhance local character and historical setting.
		16	Provide adequate parking for new developments.
		17	Introduce speed calming e.g. raised pedestrian crossings around intersections.
		18	Provide disabled parking.
	Railway line:	19	Develop alternative transport network for bulk materials e.g. PPC cement or grain.
	Pedestrian and Bicycle routes:	20	Develop integrated pedestrian and bicycle routes along the Kasteelberg interface (part of Open Space Network).
		21	Develop hiking trails on Kasteelberg in the conservation area.
		22	Develop a cycle route along the R311 between Riebeek Kasteel, Riebeek West and Ongegund.
		23	Develop a safe and functional pedestrian walkway along Voortrekker Road and along main activity routes to adjoining neighbourhoods.

Objective 2: Proximate convenient and equal access

PUBLIC UTILITIES			
	Elements	**No.**	**Proposals**
Protect	Water:	24	Voëlvlei Scheme supplies Riebeek West with water which is stored in four (4) reservoirs with a total capacity of 1750 kl. Kasteelberg reservoirs also supplies Ongegund.
	Waste Water:	25	Limited flush sewer system.
	Electricity:	26	Eskom supplies the area.
	Waste:	27	Landfill has been closed and rehabilitated.
		28	Waste is collected weekly.
	Safety & Risk Management Services:	29	No satellite fire or police stations.
Change	Future Demand:	30	Provide land for future provision of bulk infrastructure (reservoirs, overhead power lines, water pipeline).
		31	Align bulk infrastructure planning & SDF growth proposals.
	Water:	32	Extend Water provision to all properties.
		33	Manage adequate capacity for future demand as per "*Water Services Development Plan*".
		34	Total bulk water demand: kl per annum: 2017: 179,917 2022: 189,347 2027: 199,338 2032: 209,924
	Waste Water:	35	Encourage replacement of septic tanks.
		36	Ensure combined Waste Water Treatment Works for Riebeek Valley supports future growth potential.

	Electricity:	37	Provide adequate street lighting.
	Storm water:	38	Upgrade 12 km gravel roads (keep gravel).
	Waste:	39	Continue delivery of domestic waste to Highlands's landfill, Malmesbury.
	Safety & Risk Management Services:	40	Support natural resources use e.g. alternative energy, water wise developments, harvesting rainwater.
		41	Investigate provision of a satellite fire station.
Develop	Future Demand:	42	Align location of infrastructure with landscape qualities (minimize impact).
	Water:	43	Fix/replace reservoirs which are leaking.
		44	Identify additional reservoirs needs.
	Electricity:	45	Upgrade obsolete electrical infrastructure.
	Storm water:	46	Upgrade storm water system.

Objective 1: Grow economic prosperity and facilitate economic sector growth and
Objective 4: Protect and grow place identity and cultural integrity

SPACE, BUILT			
	Elements	**No.**	**Proposals**
Protect	Heritage & Tourism:	47	Riebeek Valley was discovered in 1661 during a European expedition to search for gold. The extension of the railway line from Wellington to Porterville in 1929, with stations in Riebeek Kasteel and Riebeek West, made the valley more accessible for farmers and for people who travel between the valley and Cape Town.
	Residential:	48	Compact urban form with limited opportunity to expand, hence densification. Riebeek West lies on eastern slopes of Kasteelberg and railway line running parallel to mountain.
		49	Riebeek West has four identified residential nodes: - Low density residential area at foot of Kasteelberg; - Medium and high-density residential uses in historic residential area surrounding the older CBD; - Lower density rural residential area in north-west; - High density residential area in east (subsidized housing).
	Commercial:	50	Business node located at intersection of Hof and Van Riebeek Streets.
		51	Municipal offices, church, park and surrounding businesses function as public node in western precinct.
	Industrial:	52	Industrial node is adjacent to station (north-eastern precinct).
Change	Heritage & Tourism:	53	Develop a tourism strategy for Riebeek Valley.
		54	Renew tourism infrastructure e.g. local tourism information office and tourism signs.
		55	Provide skills development in agri-tourism.
		56	Beautify entry points and CBD, plant trees.
		57	Control the demolition and alteration of heritage buildings.
		58	Ensure new developments are sympathetic to heritage buildings and the local character is protected.
		59	Enhance tourism facilities & venues and include Groenrivier and Allesverloren in urban edge.
	Residential:	60	Encourage infill development and renewal in CBD and along the activity axis.
		61	Promote rural character in future development opportunities in CBD area & other areas.
		62	Include farmworkers on housing waiting list.
		63	Provide adequate land for different residential topologies.
		64	Integrate new residential developments and locate in close proximity to job opportunities.
		65	Provide housing for retirees in Riebeek Valley.
		66	Provide sufficient bulk services capacity.
		67	Support densification through subdivision, infill development, renewal and restructuring in accordance with zone proposals.
	Commercial:	68	Support development of house shops along activity streets.
		69	Support Home Occupation in residential areas.
		70	Create integrated commercial areas in previously disadvantaged neighbourhoods.
	Industrial:	71	Support the expansion of the industrial area.
		72	Consider smaller scale agri-processing industries to allow value adding of products close to source.
Develop	Heritage & Tourism:	73	Support agri-tourism based development.
		74	Support accommodation facilities for tourist in rural and urban areas.
		75	Develop educational hiking trails in natural surrounds that include Kasteelberg. Market these features.
		76	Include Groenrivier Farm's function venue into the urban edge to support future development and expansion of this facility.

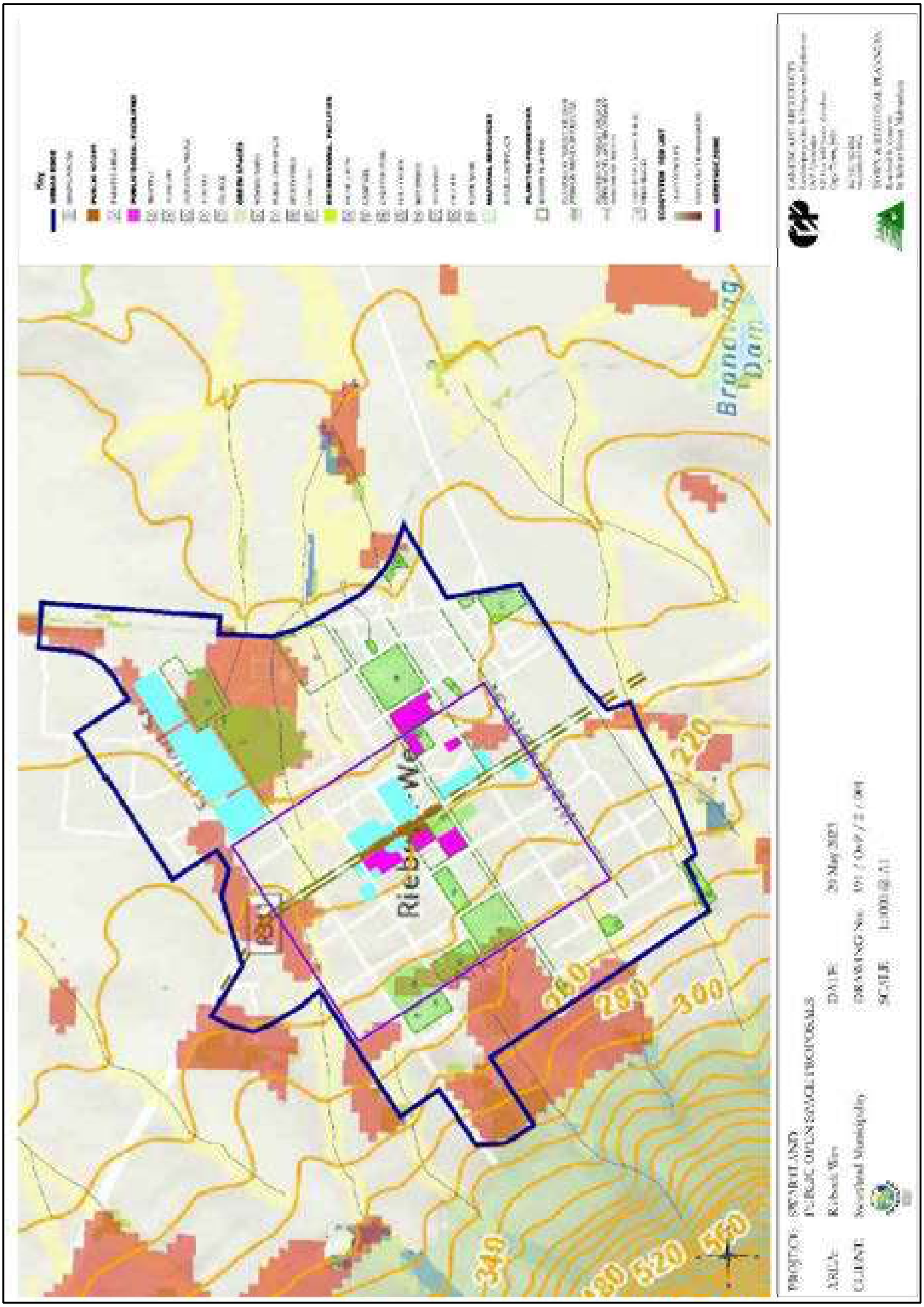
		77	Identify streets with unique historical character and with existing heritage buildings as Heritage streets.
		78	Apply overlay zones to these areas and compile guidelines for future development.
	Residential:	79	Provide 101.8ha developable land over next 20 years, as per the Swartland Human Settlement Plan. Vacant Land Audit identified 35.9ha for future growth in 17.6 Riebeek Wes.
		80	Increase density by 2027 from the current 7.4 units per hectare to 8.5 units per hectare in Riebeek Wes.
		81	Provide for future integrated subsidised housing in Riebeek West. Government residential developments, supported by Human Settlement programmes, will be supported.
		82	Utilise areas as identified in Vacant land Audit for future development.
		83	Allow for minimum subdivision size of single residential erven of 500m².
		84	Investigate the provision of GAP housing.
		85	Provide a variety of housing topologies.
		86	Promote residential development in Zone H (development constraints: privately owned and steep slope).
		87	Promote residential development on RE/23 (development constraints: privately owned and valuable agricultural land).
		88	Support the relocation of the sport grounds to the old landfill site in order to facilitate the development of the sport grounds for residential opportunities or vice versa.
	Commercial:	89	Develop CBD around Voortrekker Street (R311).
		90	Develop secondary business node in new subsidized housing project area.
		91	Make available affordable commercial properties in subsidized housing area.
	Industrial:	92	Provide adequate services and infrastructure for the industrial area.
		93	Redevelop show grounds and area north of Stasie Street for industrial, commercial and tourism related uses.
		94	Upgrade and maintain Stasie Road as an access road to the industrial area.

Objective 3: Sustain material, physical and social wellbeing

PUBLIC INSTITUTIONS			
	Elements	**No.**	**Proposals**
Change	Social Infrastructure & Services:	95	Create social infrastructure in previously disadvantaged communities.
		96	Facilitate adequate primary health facilities.
		97	Facilitate education facilities (e.g. primary, secondary and tertiary facilities including agricultural skills).
		98	Promote and develop tourism.
		99	Support establishment of crèches and other education facilities in residential areas.
		100	Identify areas for location of these services and liaise with relevant authorities for provision of the services.
Develop	Social Infrastructure & Services:	101	Landscape CBD and provide street furniture and adequate waste bins.
		102	Finalise expansion to cemetery.
		103	Provide a multi-functional community facility.
		104	Upgrade and improve public open spaces.
		105	Provide play park equipment in earmarked open spaces.
		106	Provide an integrated sports/community facility at Greenfields development (new housing project).

Objective 5: Protect ecological and agricultural integrity

SPACE, NATURAL			
	Elements	**No.**	**Proposals**
Protect	Nature & Conservation:	107	West of the Riebeek Valley, lies the Kasteelberg with its distinctive spatial and physical elements.
		108	Kasteelberg is surrounded by high potential agricultural soil and boasts high rainfall patterns.
		109	Several river/ streams cross through Riebeek West.
	Public & Private Open Space:	110	Riebeek West functions as a Service Centre for agriculture, the largest economic sector contributor.
		111	It has a rural character, scenic environment and a rich cultural heritage (tourism).
		112	Retired and people seeking country lifestyle live in the valley and commute to work in Cape Town.
Change	Nature & Conservation:	113	Determine a development (including agricultural activities) line along the slopes of Kasteelberg.
		114	Identify conservation areas within urban area.
		115	Identify a heritage route.
		116	Formalise use of natural/open space areas for recreation.
		117	Develop hiking trails, mountain bike trails and alternative uses and facilities for these events.
		118	Design interactive development interfaces along open space network.
	Public & Private Open Space:	119	Develop guidelines to control architectural style, scale and height of built structures.
		120	Develop guidelines to control information and advertising signage.
		121	Develop & strengthen public areas to support pedestrian movement and economic activity.
		122	Develop combined Open Space Network and recreational areas.
Develop	Nature & Conservation:	123	Develop a conservation management plan to preserve the Kasteelberg landscape.
		124	Manage conservation of Kasteelberg as part of the open space corridor.
		125	Expand stewardship programme with Cape Nature to conserve Kasteelberg and surrounding natural area.
		126	Develop an open space network in Ongegund.
		127	Plant trees along main activity routes.
	Public & Private Open Space:	128	Develop multi-functional sports ground in western precinct (integration).
		129	Upgrade the central square in front of the Town Hall and allow multi-functional use. Preserve character and place identity.



LAND USE ZONE PROPOSALS FOR RIEBEEK WEST

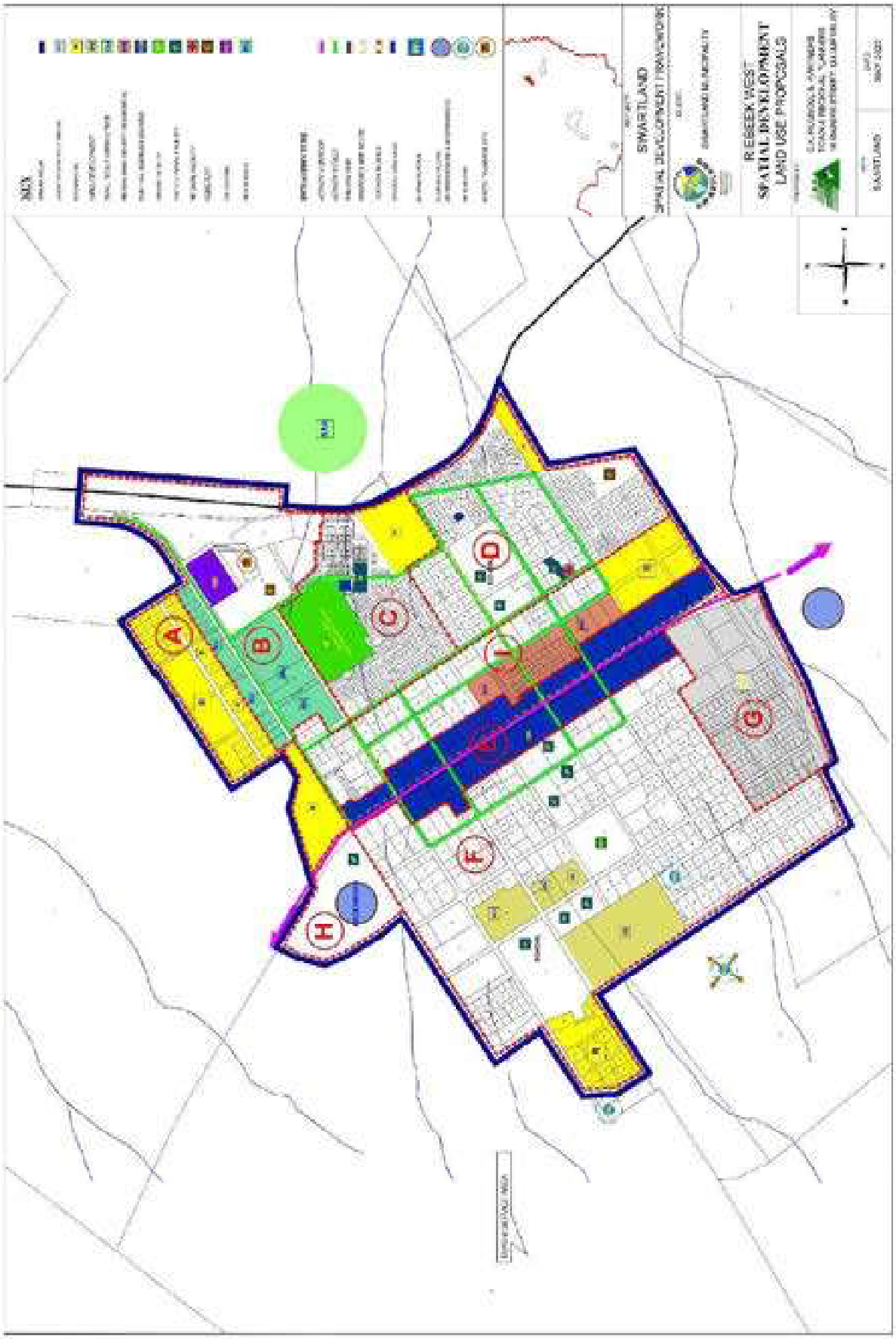
Refer to the land use zone map for Riebeek West: The urban area of Riebeek West has been divided into nine (9) zones (areas with common characteristics) with the relevant development potential relating to specific land uses for every zone.

RIEBEEK WEST LAND USE ZONES		Low Density Residential Uses	Medium Density Residential Uses	High Density Residential Uses	Secondary Educational Uses	Place of Education	Professional Uses	Business Uses	Secondary Business Uses	Place of Worship	Institution	Guest houses	Authority	Sport/Recreational Facilities	Industries & Service Trade
A	Zone A has a low to medium density character. Allow for low and medium density residential uses.	X	X	X 1,3	X		X	X 1,3	X 1,3	X	X	X	X	X	
B	Zone B has a light industrial character. Allows for mixed uses including light and service industries, commercial and tourism related uses.	X	X	X	X	X	X	X	X	X	X	X	X	X	X
C	Zone C is a residential area, earmarked for integrated infill development and the provision of an integrated sport facility.		X	X 3	X	X	X	X 1,2 3	X 1,2 3	X	X	X	X	X	
D	Zone D primarily a residential area including social, institutional and limited commercial uses.	X	X	X 3	X	X	X	X 1,2 3	X 1,2 3	X	X	X	X	X	
E	Zone E represents the Central Business District and are located along the main activity corridor through the town where commercial and mixed uses occur.	X	X	X	X	X	X	X	X	X	X	X	X	X	X 4
F	Zone F has a low density residential character with supporting social infrastructure and opportunities for infill development including higher density residential uses.	X	X	X 1	X	X	X	X 1	X 1	X	X	X	X	X	
G	Zone G is an area of proposed integrated development focusing on residential and mixed use.	X	X	X	X	X	X	X	X	X	X	X	X	X	
H	Expansion of urban edge to allow inclusion of tourism node allows for supportive services including residential and commercial uses.	X			X	X	X		X	X	X	X	X	X	
I	Zone I has a mixed density residential character with opportunities for infill development.	X	X	X 1	X	X	X	X 1,3	X 1,3	X	X	X	X	X	

(1) Along activity streets/corridors
(2) At identified business and mixed use nodes
(3) At proposed future residential development nodes
(4) Only service trades

Business Uses e.g. shop, supermarket, restaurant, offices, service station
Place of Education e.g. Schools, places of instruction
Professional Uses e.g. offices like doctors, dentists, attorneys, architechts, engineers and town planners.
Secondary Business Uses e.g. neigbourhood bussines uses such as house shops, small offices and home occupation. House taverns only to be allowed along activity streets in residential areas on discretion of the Municipality.
Secondary Educational Uses e.g. Crèches/day care

*Find description of proposed land uses for development zones in Annexure 4


REBEEK WEST
SPATIAL DEVELOPMENT
LAND USE PROPOSALS
SWARTLAND
A
B
C
D
E
F
G
H

5.2.2 Ongegund

Ongegund is located approximately 5 kilometres north of Riebeek West on the foothills of the Kasteelberg. Ongegund was home to the employees of the PPC cement mine and factory when the cement factory was established in 1950 on Farm Ongegund no 508. In 2001 Pretoria Portland Cement Company (PPC) sold the houses to residents and handed over town management to Swartland Municipality and a Homeowners Association. The unique location of the town in the Riebeek Valley with its scenic and rural environment increases the attractiveness of the town.

Swartland Spatial Development Framework -2023-2027

Objective 2: Proximate convenient and equal access

CONNECTIVITY			
	Elements	**No.**	**Proposals**
Protect	Roads:	1	MR227 (R311) is the main traffic route in the Riebeek Valley which links to the N7 just south of Moorreesburg and to the R45 route between Malmesbury and Hermon.
		2	MR227 provides access at two entrance points. A third entrance isolates the north-western residential precinct from the rest of town.
Change	Roads:	3	Revise access points off MR227/R311 to provide for future expansion along the Kasteelberg foothills.
		4	Do infill development on areas that access points open up.
	Activity Streets & Corridors:	5	Expand activity streets from the northern access point off the R311.
	Pedestrian and Bicycle Routes:	6	Surface, shade and light up pedestrian walkways.
		7	Extend open space network through town and into surrounding natural areas on Kasteelberg.
		8	Support recreational/sport events along the R311.
Develop	Roads:	9	Upgrade R311 (MR227) on eastern periphery of town.
	Activity Streets & Corridors:	10	Support mixed use including commercial opportunities along the activity route.
	Pedestrian and Bicycle Routes:	11	Develop pedestrian walkway within town linking with Kasteelberg hiking trail.
		12	Develop combined pedestrian and cycle routes along the Kasteelberg interface as part of the Open Space Network.
		13	Develop a cycle route along the R311 between Riebeek Kasteel, Riebeek West and Ongegund.
		14	Develop Kasteelberg hiking trails in the reserve.

Objective 2: Proximate convenient and equal access

PUBLIC UTILITIES			
	Elements	**No.**	**Proposals**
Protect	Water:	15	Water is supplied by Voëlvlei Scheme & is stored in four (4) reservoirs with a 1750kl capacity at Kasteelberg.
	Waste Water:	16	Combined WWT works for Riebeek Valley has sufficient capacity.
	Electricity:	17	Eskom supplies electricity. 0.35 MVA (2013) is provided for whilst real demand is 0.28 MVA.
	Storm water:	18	Internal streets are paved and are in good condition.
Change	Future Demand:	19	Align bulk infrastructure planning and SDF growth proposals.
		20	Align location of infrastructure with landscape qualities (minimize impact).
	Water:	21	Extend Water provision to all properties.
		22	Repair / replace leaking reservoirs in Riebeek West.
	Waste Water:	23	Replace domestic septic tanks.
		24	Phase out sewerage suction trucks.
	Electricity:	25	Replace obsolete electrical infrastructure (Responsibility of Eskom).
	Storm water:	26	Formalise storm water system (ditches and open channels to be piped).
	Safety & Risk Management:	27	Riebeek Valley (which includes Ongegund) requires both a fire and police station.
Develop	Future Demand:	28	Provide land for provision of future bulk infrastructure (reservoirs, overhead power lines, future roads and water pipeline).
	Water:	29	Provide additional reservoirs for storage capacity.
	Electricity:	30	Provide additional street lightning.
		31	Upgrade electrical connection to private properties.
	Safety & Risk Management:	32	Support use of natural resources e.g. alternative energy, water wise developments and harvesting of rainwater.

Objective 1: Grow economic prosperity and facilitate economic sector growth and
Objective 4: Protect and grow place identity and cultural integrity

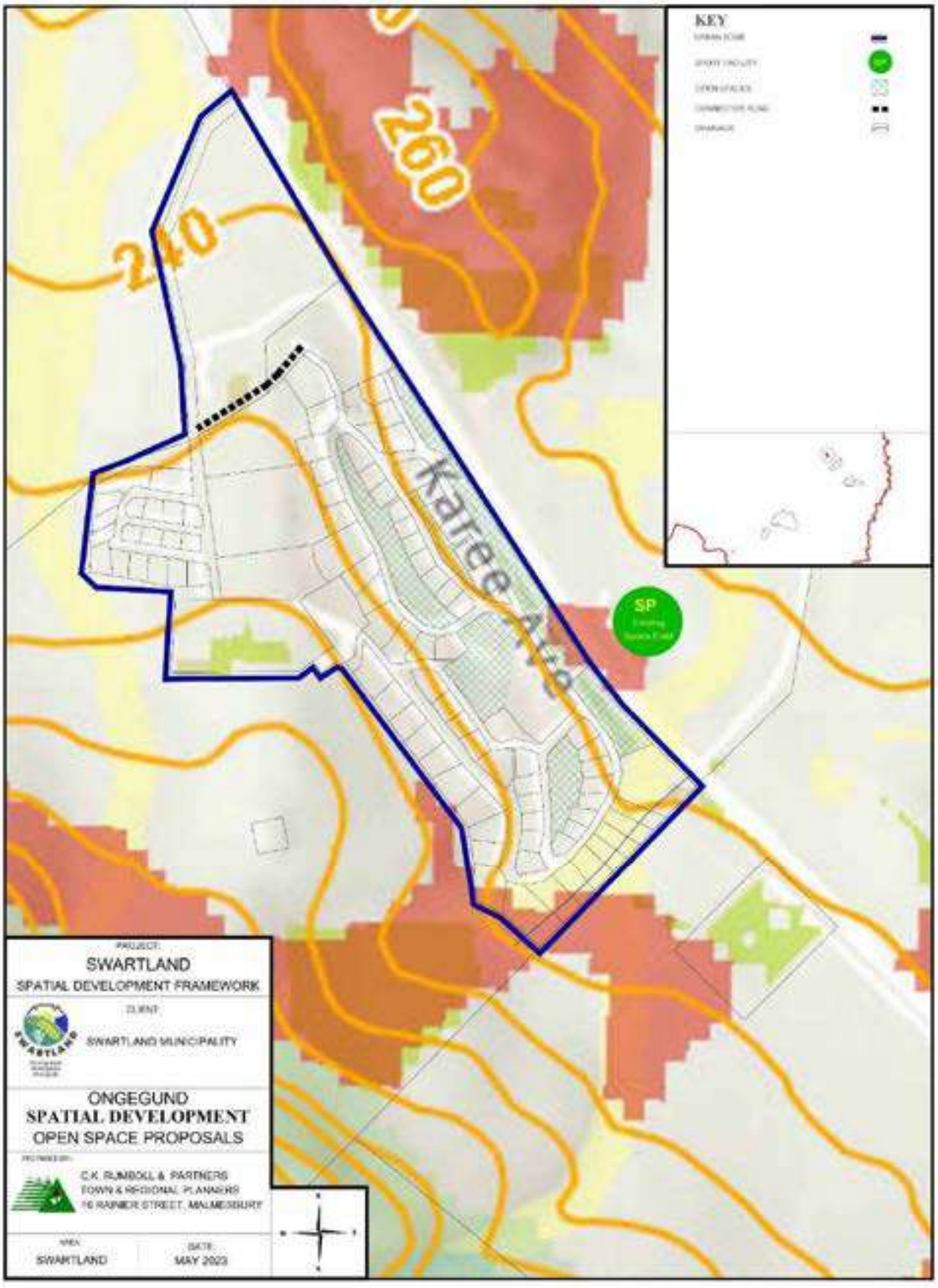
SPACE, BUILT			
	Elements	**No.**	**Proposals**
Protect	Commercial:	33	Economic base is Residential and Mining
		34	Development potential which is categorized by *Growth Potential of Towns in Western Cape Study (2004)* as low.
		35	Pulpit Rock Winery and Restaurant are located on southern outskirts.
		36	Commercial and social services are provided in Riebeek West.
		37	PPC mine and factory, located northeast of Ongegund on farm no 1222 and 1224, plan to expand to increase cement production.
Change	Residential:	38	Expand Ongegund through integrated development, residential mainly, with open space corridors.
		39	Ensure enrolment of farm workers on housing waiting list.
		40	Densify Ongegund through subdivision and infill development as per zone proposals.
		41	Develop in accordance with infrastructure capacity.
	Commercial:	42	Limit commercial development to neighbourhood level.
		43	Encourage Home Occupation in residential areas.
		44	Allow mixed use in Zone C to promote different residential density and commercial uses.
		45	Expand and support agri-tourism.
Develop	Residential:	46	Provide 19.8ha land to accommodate residential growth for the next 20 years in Ongegund. Vacant Land audit identified 39.5ha available for future growth in Ongegund.
		47	Develop 40 hectares of vacant land at Ongegund as the only large portion of land within the fertile Riebeek Valley.
		48	Provide different housing typologies.
		49	Provide housing for retirees in Riebeek Valley.
	Commercial:	50	Develop agricultural industries and service industries within Zone B.

Objective 3: Sustain material, physical and social wellbeing

PUBLIC INSTITUTIONS			
	Elements	**No.**	**Proposals**
Protect		51	Social infrastructure and job opportunities are within walking distance of residents.
		52	Ongegund depends on Riebeek West, Riebeek Kasteel and other nearby centres for economic and other social services and infrastructure.
Change		53	Use social facilities such as community hall, tennis courts, bowling greens and a swimming pool at the town's clubhouse and the open space public place at the entrance for various festive occasions.

Objective 5: Protect ecological and agricultural integrity

SPACE, NATURAL			
	Elements	**No.**	**Proposals**
Protect	Nature and Conservation:	54	Landscape characterized by large formalised open space areas within the urban area, old farmlands to the north and natural fynbos along the Kasteelberg.
		55	Kasteelberg has prominent landscape features.
	Public & Private Open Spaces:	56	Urban structure has allowed overall density with single row houses served by roads.
		57	Infill opportunities are limited by the capacity of underground services and storm water runoff (southern side of town).
Change	Nature and Conservation:	58	Enhance recreational uses in the natural areas in and around the settlement.
		59	Design interactive development interfaces along and further develop an open space network.
		60	Link proposed Greenfields development with open space network.
	Public & Private Open Spaces:	61	Enhance public open space at town entrance. Establish links between Riebeek Valley and the central sport facility.
Develop	Nature and Conservation:	62	Plant trees along main activity routes to link to open space network.
		63	Compile an effective conservation management plan.
		64	Determine a development (including agriculture) line along slopes of Kasteelberg.
	Public & Private Open Spaces:	65	Extend sports facility (Rugby Academy) to include an education component.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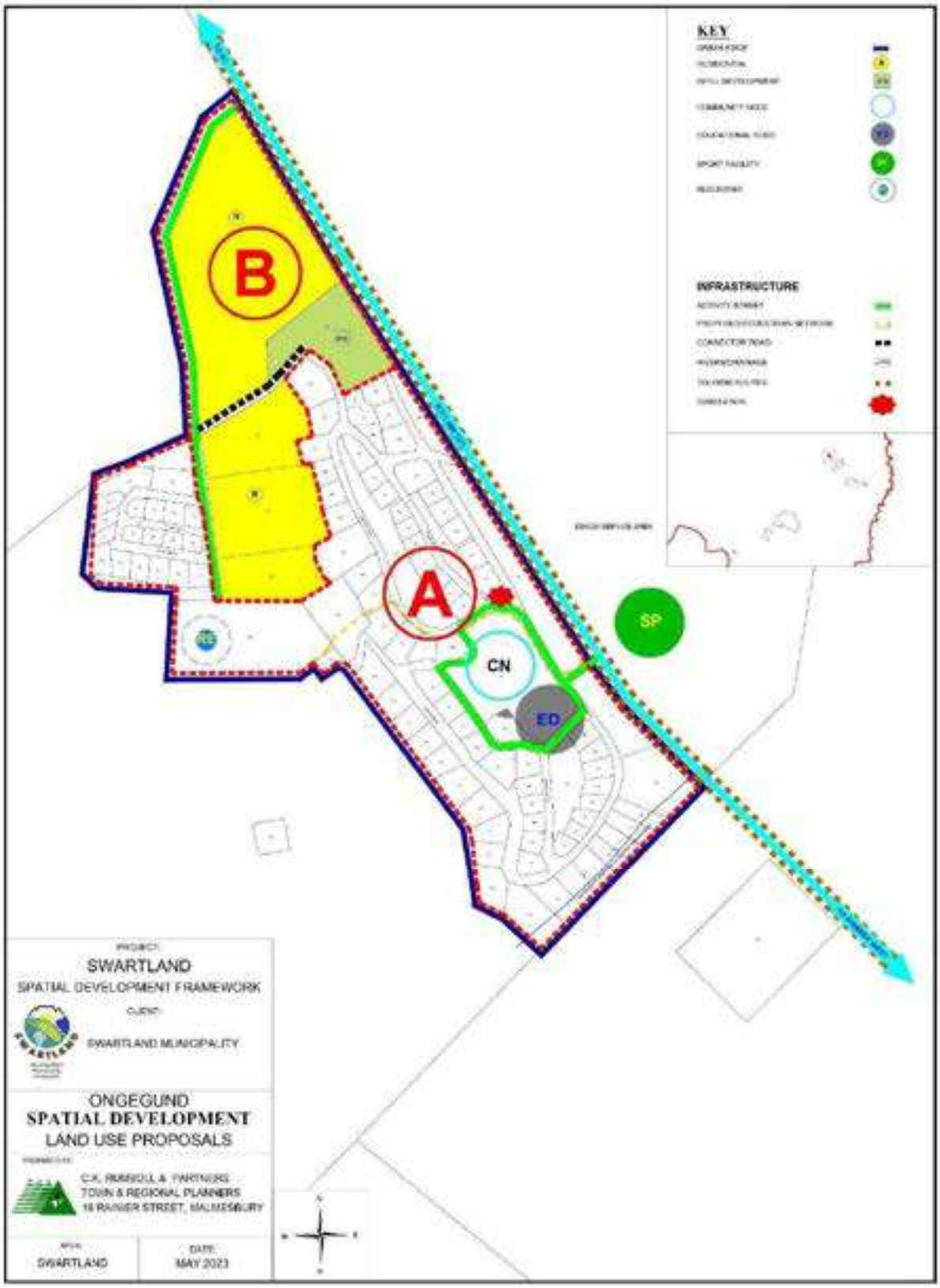
Karee Ave
SP
SWARTLAND
SPATIAL DEVELOPMENT FRAMEWORK
SWARTLAND MUNICIPALITY
ONGEGUND
SPATIAL DEVELOPMENT
OPEN SPACE PROPOSALS
C.K. RUMBOLL & PARTNERS
TOWN & REGIONAL PLANNERS
SWARTLAND
MAY 2023

LAND USE ZONE PROPOSALS FOR ONGEGUND

Refer to the land use zone map for Ongegund. The urban area of Ongegund is divided into two (2) zones (areas with common characteristics) with the relevant development potential relating to specific land uses for every zone.

ONGEGUND LAND USE ZONES		Low Density Residential Uses	Medium Density Residential Uses	High Density Residential Uses	Secondary Educational Uses	Place of Education	Professional Uses	Business Uses	Secondary Business Uses	Place of Worship	Institution	Guest houses	Authority	Sport/Recreational Facilities	Industries & Service Trade
A	Zone A forms the core of the town with mostly a low density residential character. There are also supporting recreational/sport functions. The expansion of education and commercial related uses are limited.	**X**	**X**		**X**	**X**	**X**	**X 1**	**X 1**	**X**	**X**	**X**		**X**	
B	Zone B - vacant land proposed for residential use and both mixed commercial and residential uses along the activity street.	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	
(1) Along activity streets		**Business Uses** e.g. shop, supermarket, restaurant, offices, service station **Place of Education** e.g. Schools, places of instruction **Professional Uses** e.g. offices like doctors, dentists, attorneys, architechts, engineers and town planners. **Secondary Business Uses** e.g. neigbourhood bussines uses such as house shops, small offices and home occupation. House taverns only to be allowed along activity streets in residential areas on discretion of the Municipality. **Secondary Educational Uses** e.g. Crèches/day care *Find description of proposed land uses for development zones in Annexure 4													


KEY
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SPATIAL DEVELOPMENT FRAMEWORK
SWARTLAND MUNICIPALITY
ONGEGUND
SPATIAL DEVELOPMENT
LAND USE PROPOSALS
C.K. RUMBOLL & PARTNERS
TOWN & REGIONAL PLANNERS
16 RAINER STREET, MALMESBURY
SWARTLAND
MAY 2023

5.2.3 Misverstand Dam

The Misverstand dam and resort, located on the Berg River and the north western boundary of Swartland and Ward 3, offers unique recreational and water sport opportunities. They include: day camping/picnic facilities, tent and caravan camping areas, holiday units for rent, a resort shop and restaurant, for boats - a launch pad and berthing places next to jetties. The Resort is home to: Resort I units and a camping area for short term holiday accommodation; Leisure Accommodation (Resort II) for longer term holiday housing and 25 units in private ownership; while the Open Space II area along the river front, is used for recreation and day camping. The Leisure Accommodation (previously Resort II) homes, located to the east, are under management of a Home Owners Association.

Misverstand Dam, as a tourism facility fulfils a regional role for visitors from Cape Town and surrounding municipalities. No future expansion of this resort is proposed as part of this plan.

5.2.4 Rural Areas of Ward 3

The proposals below are ward specific. Any proposal that extends across ward boundaries was documented as part of the regional proposals.

Proposals are grouped according to the five objectives. Proposals per objective differentiate, where appropriate, between agriculture and tourism.

Regional proposals according to the five objectives follow below:

Objective 1: Grow economic prosperity and facilitate economic sector growth [Economic Environment]

Support	Agriculture	Tourism
Industrial	Support packaging and processing on farms within the highly intensive production area in the Riebeek Valley (vineyards, stone fruits, olives and vegetables).	
	Support mining of *Limestone*. This limestone reef stretches from De Hoek outside of Piketberg to Riebeek West. - Mined by Portland Cement Company (PPC) outside of Ongegund. - Bridgetown. - east of Moorreesburg, currently not operational.	
	Store overburden on acquired farm.	
Commercial		Encourage film industry uses.
	Support development of extensive agricultural units due to limited access to water (sustaining increased input cost of crop farming) except along Berg River.	Support festivals to build the agricultural brand e.g. annual Olive Festival and Shiraz Festival in the Riebeek Valley.

Residential	Develop future integrated subsidized housing in Riebeek West.	Promote heritage resources e.g. Hooggelegen (c1709) first and oldest farm in the Swartland.
Waterways		Promote recreation and support facilities at Misverstand Dam (water-ski resort) e.g. water sports and fishing.

Objective 2: Proximate convenient and equal access [Economic Environment]

	Agriculture	**Tourism**
N7	Support link between the Nuwekloof road (R44), linking Ceres/Karoo with West Coast & Moorreesburg. Optimise links to markets (Cape Town & Windhoek): Dual carriage way between Cape Town and Malmesbury increases accessibility & reduces travel time to the area.	
R311	Strengthen the R311 as a regional link to increase mobility in the area. Support proposed link between N45, N7 and R311 and R311 and R44. Strengthen link with West Coast, Hopefield (R311 and R45), Moorreesburg (R311) and adjoining municipalities including Berg River, Drakenstein and the Cape Metropole. 	
Railway	Support private operators to provide alternative transport between Malmesbury & Moorreesburg.	Implement special train trips between Moorreesburg & Koringberg (Grain and Canola fields, rolling hills and railway line to Bitterfontein).

Objective 3: Sustain material, physical and social wellbeing [Social Environment]

There are no specific proposals for ward 3 to support this objective.

Objective 4: Protect and grow place identity and cultural integrity. [Built Environment]

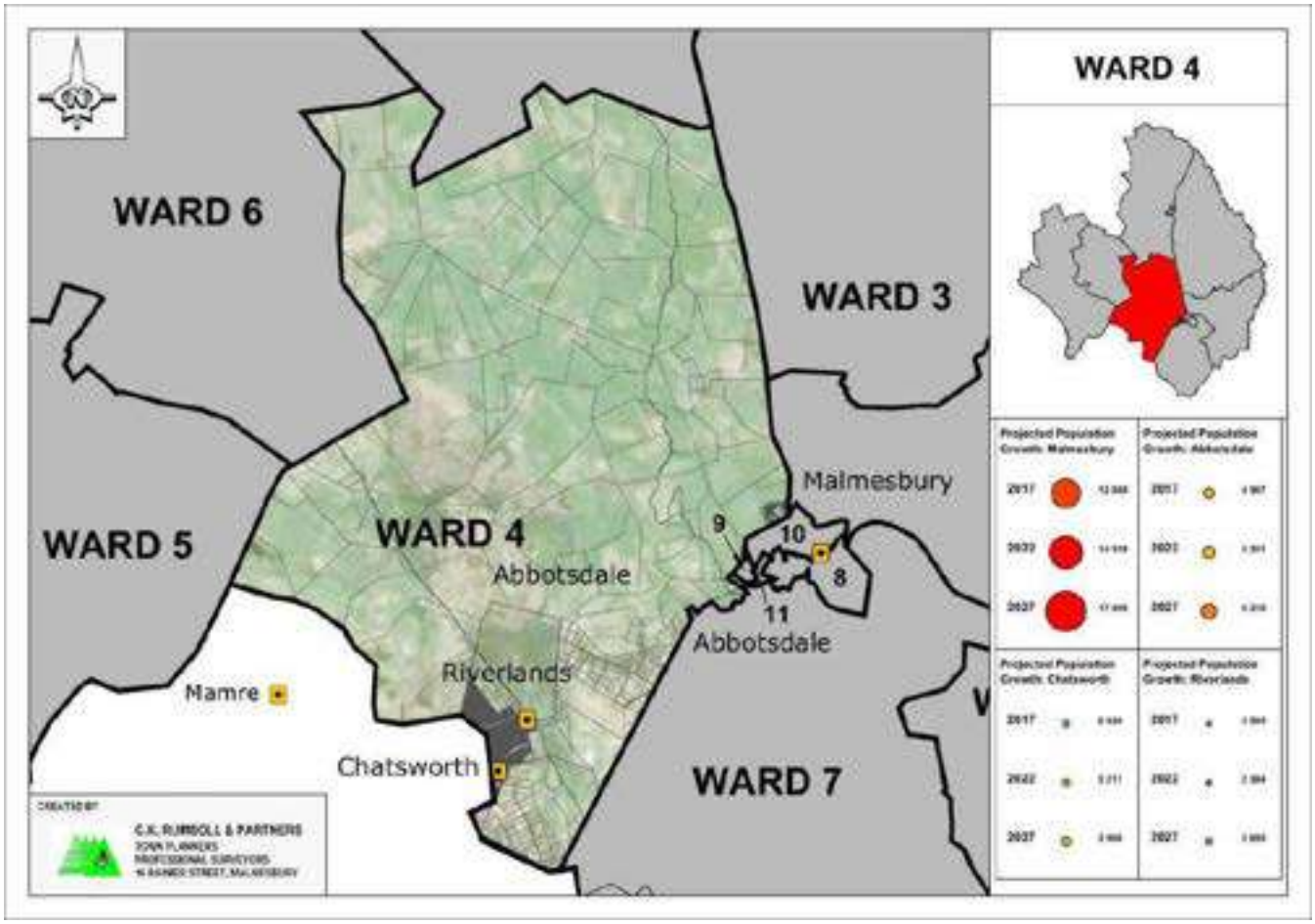
Administrative	Support Riebeek West as a local agricultural service centre. Develop Ongegund as a residential settlement.
Heritage tourism route	Include significant heritage farms and properties into potential heritage tourism route: PPC mine where the birthplace of Jan Smuts is located; Allesverloren as the family farm of D. F. Malan. The doll museum in Koringberg as a tourist destination. Protect all and promote some of the 101 rural sites surveyed in Swartland Rural Heritage Survey 2014 in Ward 3: Grade 2 PHS (Provincial Heritage Site) – 2, Grade 3 A (high local significance) – 3: Grade 3 B (some local significance) – 63: Grade 3C (limited local significance) – 30: No grading (no heritage resource) – 4.

Objective 5: Protect ecological and agricultural integrity [Biophysical or Natural Environment]

Biodiversity	Categorise Kasteelberg, Swartberg, Koringberg "koppie", Wolfkop, Byeneskop and Oshoekkop with the surrounding area which are identified as Core 1 and 2 areas.	Create recreational opportunities: Hiking, mountain bike trails around Kasteelberg and along the adjoining hills and mountains like Koringberg Swartberg, Wolfkop, Byeneskop and Oshoekkop & bird watching, horse riding, 4 x 4 trails and clay pigeon shooting.

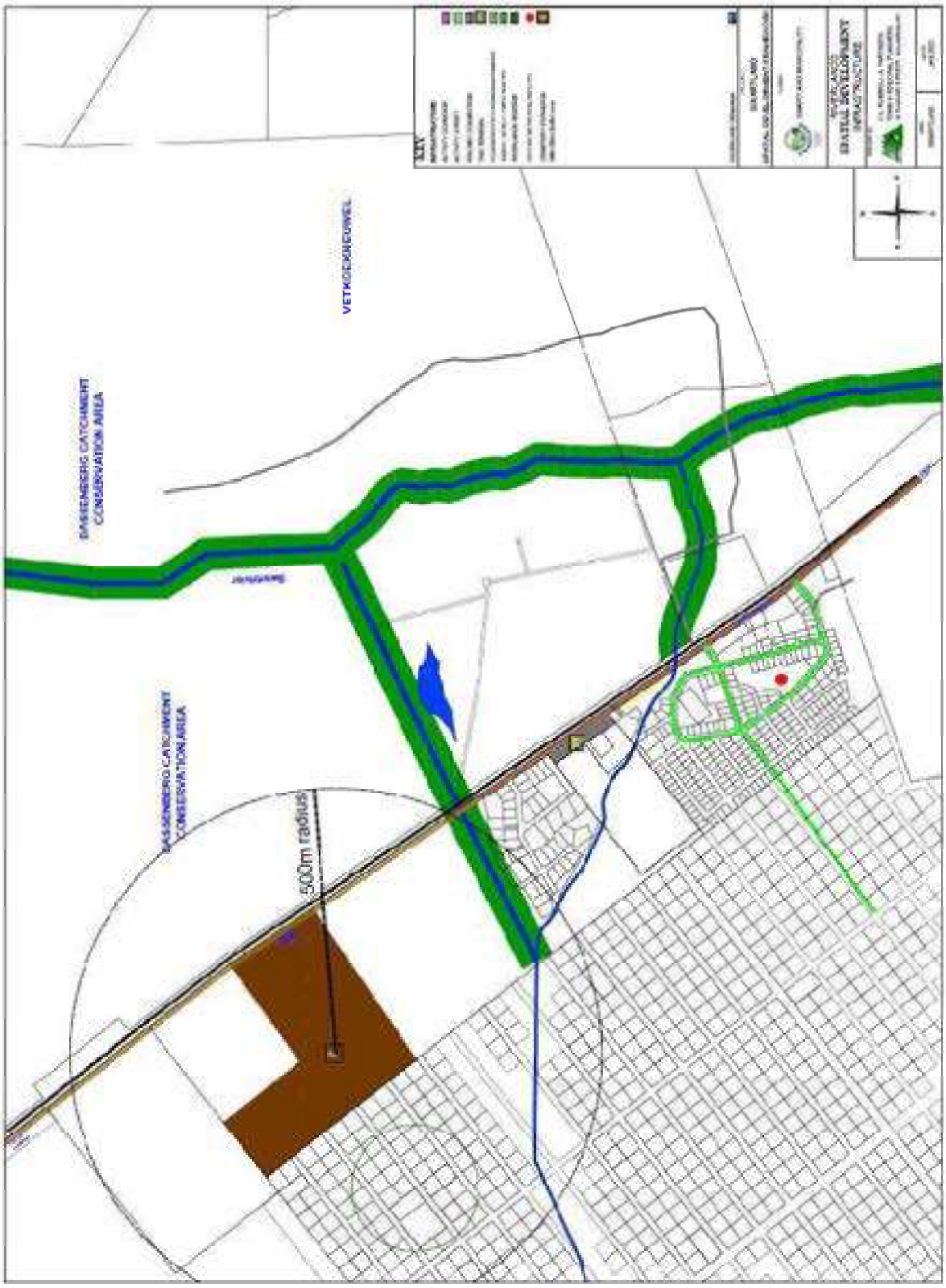
5.3 Ward 4: Riverlands, Chatsworth and Rural Areas

Ward 4, the south western ward (south of Malmesbury and west of N7), is home to the rural settlements of Riverlands and Chatsworth, small holding areas and large farms which are intensively cultivated. The ward is historically poor, has a lack of infrastructure and limited economic opportunities. Hence an Intensive Rural Development Corridor should enhance economic growth, stretching along the N7, one half of which is located in Ward 4 and the other in Ward 7. Opportunities for intended possible development include: intensive cultivation, agri-processing, rural living, small and large scale agri-production and small scale agri processing.



5.3.1 Riverlands

Riverlands is 14 kilometres south of Malmesbury along the western side of the N7 in the area known as Greater Chatsworth. Access from the N7 national road to Riverlands is obtained via connection road no 241.



Swartland Spatial Development Framework -2023-2027

Objective 2: Proximate convenient and equal access

CONNECTIVITY			
	Elements	**No.**	**Proposals**
Protect	Roads:	1	Road 241, (connecting N7 and Mamre and access road), known as Riverland Drive provides direct access to school, bus stop, and commercial services.
	Activity streets:	2	Arend, Pelican, and Kelkiewyn Street (south).
Change	Roads:	3	Upgrade Riverlands Drive as the main activity route and through route to the Riverlands Reserve.
	Activity streets:	4	Develop mixed uses along Riverland Drive activity corridor and along internal activity streets.
		5	Beautify main activity corridor and entrance to Riverlands.
		6	Introduce speed calming measures along Riverlands Drive.
		7	Develop higher order uses along identified activity streets to support integration and spatial justice.
		8	Provide adequate public transport facilities to increase mobility.
		9	Provide railway transport as alternative public transport system for the Greater Chatsworth area.
		10	Develop multi- use and safe pedestrian walkways in town and between Riverlands and Chatsworth.
		11	Ensure accessibility of sidewalks, road crossings and pedestrian walkways for the disabled.
Develop	Roads:	12	Municipality to take pro-active role in liaising with Provincial and National roads departments to give insight into the upgrading or surrounding road networks.
	Activity streets:	13	Beautify Riverlands Drive (plant trees).
		14	Enhance town entrances as focal points and plant trees, provide street furniture and develop pedestrian walkways.
		15	Introduce speed calming to increase safety along Riverlands Drive (i.e. raised pedestrian crossings and intersection).
		16	Develop taxi rank/bus stop in front of the school to increase mobility.
		17	*Pedestrian and cycle routes.*
		18	Provide disabled friendly, accessible, surfaced, shaded and adequately lit and safe pedestrian walkways and cycle paths.

Objective 2: Proximate convenient and equal access

PUBLIC UTILITIES			
	Elements	**No.**	**Proposals**
Protect	Water:	19	Twenty percent (20%) of households in Riverlands share communal water points.
		20	Voëlvlei Scheme provides water via pipelines through Malmesbury and Kalbaskraal to Riverlands and Chatsworth. There are three (3) boreholes at Riverlands which supply the 2400kl. Reservoir.
	Waste Water:	21	Flush sewerage network limited to subsidized housing development whilst the rest of town uses septic tanks.
		22	Riverlands and Chatsworth's WWT plant consists of an oxidation dam approximately 2km away from Riverlands, in the direction of Chatsworth.
	Electricity:	23	Eskom supplies electricity in Riverlands.
		24	Street lighting is considered inadequate.
	Storm water:	25	Internal roads and the storm water system are considered inadequate.
	Waste:	26	Weekly Swartland Municipality collects all domestic waste from door to door and transports it to Highlands Landfill. Residents deliver waste (such as garden waste) to a transfer station located next to the WWTP.
	Safety:	27	Riverlands does not have a fire or police station.
Change	Water:	28	Provide a basic level of service in the short- to medium term and upgrade services in the long term.
	Waste Water:	29	Upgrade and expand the Waste Water Treatment Works (2017) to service houses not connected to the flush sewer system.
		30	Servicing the septic tanks is a challenge.
		31	Upgrade the oxidation dam.
	Electricity:	32	Improve inadequate street lighting.
	Storm water:	33	Upgrade backlog of approximately 21 km of streets and storm water system.
Develop	Water:	34	Share infrastructure between Riverlands and Chatsworth.
		35	Provide water to all properties.

Objective 1: Grow economic prosperity and facilitate economic sector growth and
Objective 4: Protect and grow place identity and cultural integrity

SPACE, BUILT

	Elements	No.	Proposals
Protect	Heritage and Tourism:	36	Riverlands was established as a Dutch Reformed Mission Church and school in the early 1900's on land purchased by Spoornet. Riverland is relatively isolated with limited services and poor living conditions. The result is high population growth, unemployment and other poverty-related conditions.
	Residential:	37	Riverlands is part of the Greater Chatsworth area, and serves as an isolated "overnight" town for workers from Malmesbury, Cape Town, Atlantis and surrounding farms.
		38	Urban Design: The urban core of Riverlands is located west of Riverlands Drive. Social facilities such as the sports field are northeast of the town entrance.
		39	Open space areas accommodate tributaries and retention dams.
		40	The built form of Riverlands is not defined by a specific style. The northern precinct is characterised by larger erven with infill opportunities and the southern precinct consists of smaller erven with limited densification opportunities.
		41	Riverlands residents commute to work in Malmesbury, Cape Town and Atlantis.
	Rural Residential:	42	Vetkoekheuwel, as well as other smaller settlements, are informal areas on the eastern and western boundaries of the town. The residents of the informal settlements mainly make a living as small farmers on surrounding land owned by DTPW.
		43	Formalise rural settlement of Vetkoekheuwel, outside of Riverlands along the Swart River. Formalise layout, ownership, security of tenure, installation of services and formalising the access road.
	Commercial:	44	Basic commercial services with limited economic opportunities cause residents of Riverlands to conduct business in Malmesbury and Cape Town.
Change	Heritage and Tourism:	45	Control extensions or demolitions of heritage buildings.
		46	Focus tourism development on the natural environment, nature reserves and wild flowers.
	Residential:	47	Expand residential use north of the entrance road and south of the Swart River and move informal settlement in the south eastern precinct to the formal housing area.
		48	Limit residential expansion westwards to side stream of Swart River.
		49	Provide for different residential types/ housing topologies and effective utilisation of services.
		50	Expand residential area in northern precinct.
		51	Align development with bulk infrastructure capacity and services.
		52	Support the densification in Riverlands through: Subdivision; Infill development; and Renewal and restructuring.
		53	Densify in accordance with zone proposals.
		54	Provide GAP housing in Riverlands.
	Rural Residential:	55	Spatially integrate Riverlands and Chatsworth.
		56	Settle farmers in area between (north and east) Riverlands and Chatsworth known as Vetkoekheuwel and protect the ecological corridor.
		57	Promote intensive agricultural use and smaller agricultural units in surrounding rural areas of Riverlands and Chatsworth, including Groenrivier Smallholdings and Tierfontein.
		58	Allow mixed uses along the activity corridor.
	Commercial:	59	Formalise the existing commercial area on the south-eastern periphery of the town and create opportunities for housing and service industries around this node.
		60	Support integrated development and mixed uses in neighbourhoods.
	Industrial:	61	Provide the opportunities for limited service related industries on the southern periphery of town along both sides of the activity corridor.
Develop	Heritage and Tourism:	62	Support the cultivation and harvesting of wild flowers.
		63	Manage and maintain the area during spring as a hotspot to view wild flowers.
		64	Capitalise on Riverlands' location along the access route to the Riverlands Reserve.
	Residential:	65	Provide for subsidised housing demands in Riverlands. Government residential developments, supported by Human Settlement programmes, will be supported.
		66	Keep waiting list up to date.
		67	Enrol farm workers on the waiting list.
		68	Develop higher density residential uses in and around the CBD and along activity streets.
		69	Develop land owned by Department of Human Settlements between Riverlands and Chatsworth, known as Michiel Heyns Kraal.
		70	Beautify & utilise part of the taxi rank/bus stop in front of school as a market place.
		71	Require a minimum erf size of 500m².
		72	Support residential expansion to the west of Riverlands with supporting social infrastructure such as schools, crèches, churches as well as 2.5ha sport grounds. Extend Arend and Kelkiewyn streets through to the residential expansion as main access route in the town.

	Rural Residential:	73	Expand to the north and south-east of Riverlands. Development to the south east and particularly east of the railway lined should be determined by the availability to secure services.
		74	Provide 17.7.4ha land to accommodate growth in Chatsworth over the next 20 years of which 22ha is vacant and undeveloped land as per Vacant Land Audit.
		75	Provide public transportation for Riverlands commuters.
		76	Strengthen the economy to generate job opportunities in Riverlands.
		77	Create a multi-use open space network.
		78	Increase density by 2027 from the current 14.3 units per hectare to 14.6 units per hectare in Riverlands (Vacant erven that can densify in private ownership.
	Commercial:	79	Create more affordable commercial properties and more integrated commercial areas in previously disadvantaged neighbourhoods.
		80	Support CBD along Riverlands Avenue.
		81	Support economic growth and diversification.
	Industrial:	82	Ensure adequate capacity of bulk infrastructure to support industrial expansion.
		83	Identify areas for future expansion of bulk infrastructure.

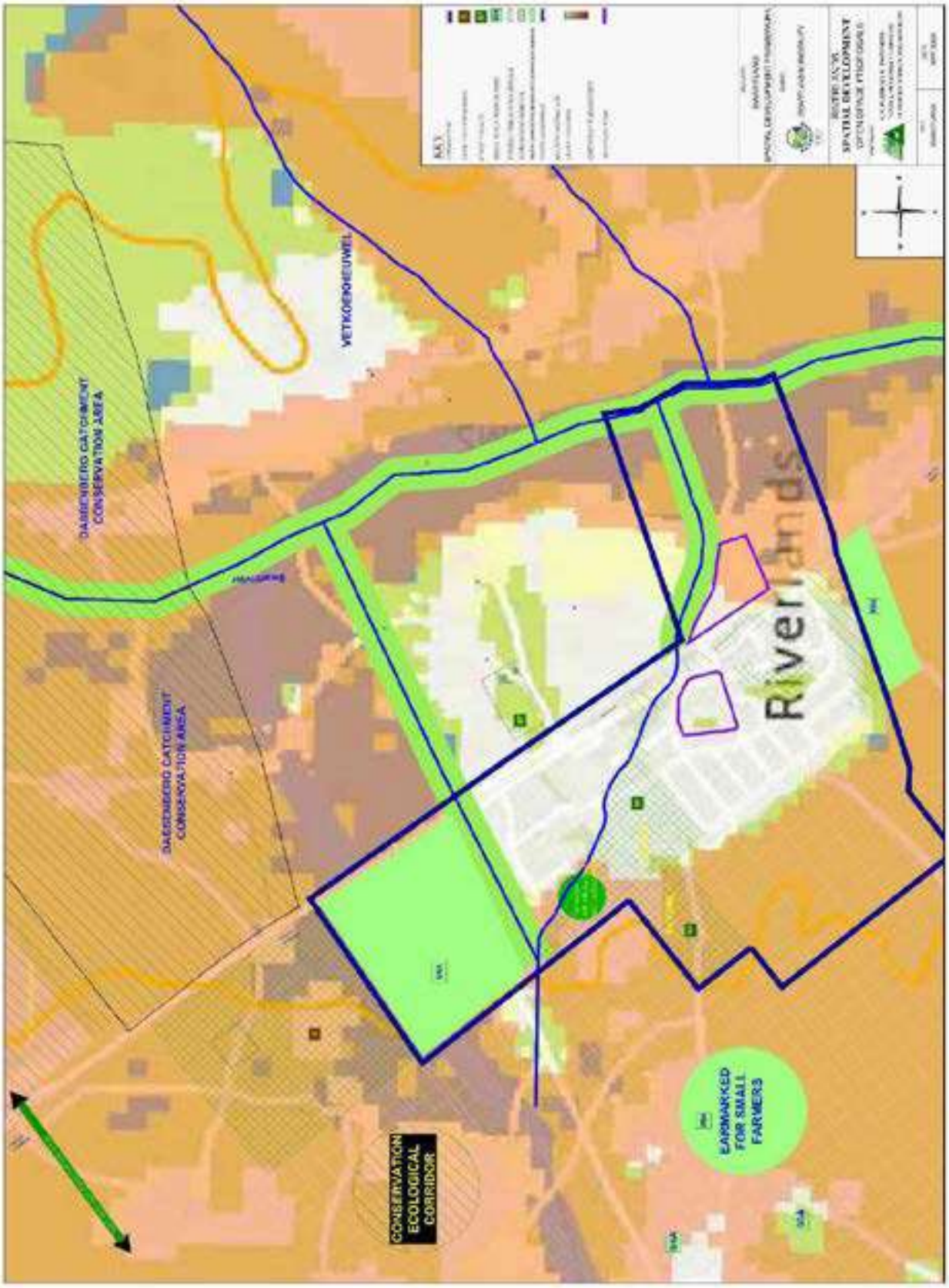
Objective 3: Sustain material, physical and social wellbeing

PUBLIC INSTITUTIONS			
	Elements	**No.**	**Proposals**
Protect		84	Community Facilities.
		85	Sufficient space at existing school for expansion.
Change		86	Provide adequate: Primary health facilities; Education facilities specifically crèches and secondary facilities.
		87	Allow community orientated uses (crèches) in residential areas.
Develop		88	Develop a multipurpose community centre along the link road between Riverlands and Chatsworth to serve the Greater Chatsworth area.
		89	Develop a new school site (Department of Education).

Objective 5: Protect ecological and agricultural integrity

SPACE, NATURAL			
	Elements	**No.**	**Proposals**
Protect	Natural and Conservation Landscape:	90	Riverlands is located near the pristine natural environment of the Riverlands and Pella Reserve and Dassenberg which contributes to a peaceful and rural appearance.
	Waterways:	91	The Swart River boarders the town on the northern and eastern side.
	Vegetation:	92	Protect the area surrounding Riverlands, classified as a Category Bc (Buffer zone) and making the town form part of the Ecological Corridor.
		93	Riverlands as part of the Greater Chatsworth area, is home to the Atlantis Sand Fynbos flora.
Change	Natural and Conservation Landscape:	94	Develop a multi-functional open space and recreational network in Riverlands along the river. Note that access to the reserve is managed via a permitting and activities are considered on a case-by-case basis.
	Waterways:	95	Design the interface between river and adjoining areas to be seamless and encourage buildings to front onto the river.
	Vegetation:	96	Develop conservation management plans.
	Public and Private Open Space:	97	Develop a new and larger sports node to serve the Greater Chatsworth area. Develop a sports field in future, west of Riverlands for safe and easy access.
		98	Upgrade existing sport facilities east of the school.
		99	Formalise cemetery with access route.
Develop	Natural and Conservation Landscape:	100	Enter into a stewardship programme with Cape Nature to ensure effective management of conservation areas.
		101	Establish and protect the corridor between Riverlands and Pella Nature Reserve to the north of the town that includes a part of the farm Michiel Heyns Kraal.
		102	Provide walking trails and landscaped recreational facilities (play parks, picnic areas, and outdoor gym equipment).
		103	Develop hiking trails, mountain bike trails and alternative uses as events facilities and venues.

		104	Encourage developments next to open spaces to interact with such spaces.
	Public and Private Open Space:	105	Provide and secure play park facilities.
		106	Provide a public park along the tributary of the Swart River.
		107	Secure the dam and formalise the area around retention pond in Pelican Street as a local picnic area.
		108	Formalise area along the tributary and to the west of the school, with landscaping and hiking routes.


VETKOOPSKEUWEL
DASSENBERG CATCHMENT CONSERVATION AREA
DASSENBERG CATCHMENT CONSERVATION AREA
Riverlands
EARMARKED FOR SMALL FARMERS
CONSERVATION ECOLOGICAL CORRIDOR

LAND USE ZONE PROPOSALS FOR RIVERLANDS

Refer to the land use zone map for Riverlands: The urban area of Riverlands is divided into nine (9) zones (areas with common features) and the recommended land uses for the different zones are listed in the table below:

RIVERLANDS LAND USE ZONES		Low Density Residential Uses	Medium Density Residential Uses	High Density Residential Uses	Secondary Educational Uses	Place of Education	Professional Services	Business Uses	Secondary Business Uses	Place of Worship	Institution	Guest houses	Authority	Sport/Recreational Facilities	Industries & Service Trade
A	Zone A has a residential character with larger properties on the northern periphery. Limited infill opportunities.	X	X		X	X	X			X	X	X	X		
B	Zone B consists of Place of Education, sport fields and supporting transport service (taxi/bus stop). Allow for sport facility expansion and formalisation of open area with hiking trail and landscaping.					X				X	X		X	X	
C	Zone C has a high density residential character with limited supporting commercial uses. Allow for supporting social infrastructure		X	X 2	X	X	X	X 1	X 1	X	X	X	X	X	
D	Zone D comprises the core of the town and represents the Central Bussines District.		X	X	X	X	X	X	X	X	X	X	X	X	X 3
E	Zone E comprises an open space.												X	X	
F	Zone F is the area where informal residential functions occur and where formalisation is required.	X	X	X	X	X	X	X 5	X 5	X		X			X 3
G	Zone G includes an informal small farmer settlement area identified as Vetkoekheuwel outside the urban edge along the Swart River. Area needs to be formalised with provision of an access road, infrastructure and securing of land.	X	X	X		X			X	X	X	X	X	X	X 3
H	Zone H has a high and medium density residential character with limited supporting commercial uses. Allow for supporting social and recreational infrastructure	X	X	X	X	X	X	X 1,5	X 1,5	X	X	X	X	X	
I	Zone I is earmarked for urban agriculture expansion to include possible low density residential development.	X			X				X	X		X	X	X	X 4

(1) Along activity streets/corridors
(2) Flats along activity streets
(3) Only service trade
(4) Nurseries and service industries
(5) At proposed future residential development nodes

Business Uses e.g. shop, supermarket, restaurant, offices, service station
Place of Education e.g. Schools, places of instruction
Professional Uses e.g. offices like doctors, dentists, attorneys, architechts, engineers and town planners.
Secondary Business Uses e.g. neigbourhood bussines uses such as house shops, small offices and home occupation. House taverns only to be allowed along activity streets in residential areas on discretion of the Municipality.
Secondary Educational Uses e.g. Crèches/day care

*Find description of proposed land uses for development zones in Annexure 4


KEY
SWARTLAND SPATIAL DEVELOPMENT FRAMEWORK
LAND USE PROPOSALS
VETKOEKHOEWEL
DASSENBERG CATCHMENT CONSERVATION AREA
DASSENBERG CATCHMENT CONSERVATION AREA
AGRI-SMALL HOLDINGS
A
B
C
D
E
F
G
H
I
Residential Opportunity
CONSERVATION ECOLOGICAL CORRIDOR
EARMARKED FOR SMALL FARMERS

5.3.2 Chatsworth

Chatsworth is located on the southern boundary of the Swartland Municipal area in the area known as Greater Chatsworth. The town is situated 14 kilometres south of Malmesbury. Access from the N7 national road to Chatsworth is obtained via connection road no 241. The N7 is approximately 4.5 kilometres east of the town.

Objective 2: Proximate convenient and equal access

CONNECTIVITY			
	Elements	**No.**	**Proposals**
Protect	Roads:	1	Road 241, (connecting N7 and Mamre and access road), known as Riverland Drive provide direct access to school, bus stop, commercial services.
	Activity Streets and Corridors:	2	Main (3rd Avenue) and Radnor streets (providing access to northern precinct).
		3	Other Activity Streets include Edward, Milner, Seventh, Fourth, Fifth, Second and Links Streets.
		4	A central business node is located between Fourth & Second Avenue, Milner, Randor and Cemetery Streets.
Change	Roads:	5	Upgrade Randor Street as an activity corridor including the bus route through Chatsworth.
	Activity Streets and Corridors:	6	Develop mixed uses (higher density residential and commercial) along Radnor Street as an activity axis and along identified internal activity streets.
		7	Provide railway transport as alternative public transport system for the Greater Chatsworth area.
	Pedestrian and Cycle Routes:	8	Develop multi- use and safe pedestrian walkways in town and between Riverlands and Chatsworth.
Develop	Roads:	9	Liaise with Provincial and National Roads departments to be involved in upgrading of road networks.
		10	Beautify Radnor Street and other activity streets in the CBD.
		11	Provide public transportation for Riverlands commuters.
	Activity Streets and Corridors:	12	Upgrade and beautify Radnor Street, and the connection route between Riverlands and Chatsworth.
		13	Utilise entrance points as focal points: (trees, street furniture and pedestrian walkways).
		14	Develop a taxi rank/bus stop next to CBD.
		15	Expand bus route to northern precinct where the subsidized housing project is located as well as south around sportsfield.
		16	Introduce speed calming measures.
	Pedestrian and Cycle Routes:	17	Develop multi-use and safe and functional pedestrian walkway in town as well as between Riverlands and Chatsworth.

Objective 2: Proximate convenient and equal access

PUBLIC UTILITIES			
	Elements	**No.**	**Proposals**
Protect	Future demand:	18	Upgrade services in the Greater Chatsworth area.
	Water:	19	Voëlvlei Scheme provides water via pipelines through Malmesbury and Kalbaskraal to Chatsworth and Riverlands. Water is stored in a 2400kl reservoir.
		20	±47% of 108 households uses communal water points.
	Waste Water:	21	Septic tanks or buckets predominate. Flush sewer system is provided in the subsidized housing developments only. A combined Waste Water Treatment Works serves Greater Chatsworth (oxidation dam approximately 2km from Riverlands, direction of Chatsworth).
	Electricity:	22	Eskom supplies electricity, most properties are connected.
	Waste:	23	Weekly door-to-door collection by the Swartland Municipality of domestic waste is transported to the Highlands Landfill. Residents deliver waste (such as garden waste) to a transfer station located next the WWTP.
	Safety and Risk Management:	24	Chatsworth does not have a fire or police station.
Change	Future demand:	25	Align infrastructure location with SDF proposals and minimise impact on landscape.
		26	Provide a basic level of service in the short- to medium term and upgrade to a higher level in the long term.
	Water:	27	Upgrade and install internal water reticulation networks to extend water provision reticulation network to all properties.
		28	Extend water provision to all properties.
	Waste Water:	29	Expand sewage system to all residences.
		30	Establish oxidation dams' capacity.
	Electricity:	31	Improve street lightning of some internal roads.
	Storm water:	32	Upgrade ±21 km storm water system.
	Safety and Risk Management:	33	Support effective use of natural resources - alternative energy, water wise developments.
		34	Safety: Prioritise establishment of a satellite fire- and police station for Greater Chatsworth.
Develop	Future demand:	35	Provide for expansion of bulk infrastructure.
		36	Integrate Riverlands and Chatsworth by sharing infrastructure.
	Waste Water:	37	Upgrade sewage system (2017) and connect to flush sewer system.

		38	Expand bulk infrastructure to support future residential development.
	Storm water:	39	Expand storm water retention pond.
	Safety and Risk Management:	40	Support the harvesting of rainwater in tanks on residential erven.

Objective 1: Grow economic prosperity and facilitate economic sector growth and
Objective 4: Protect and grow place identity and cultural integrity

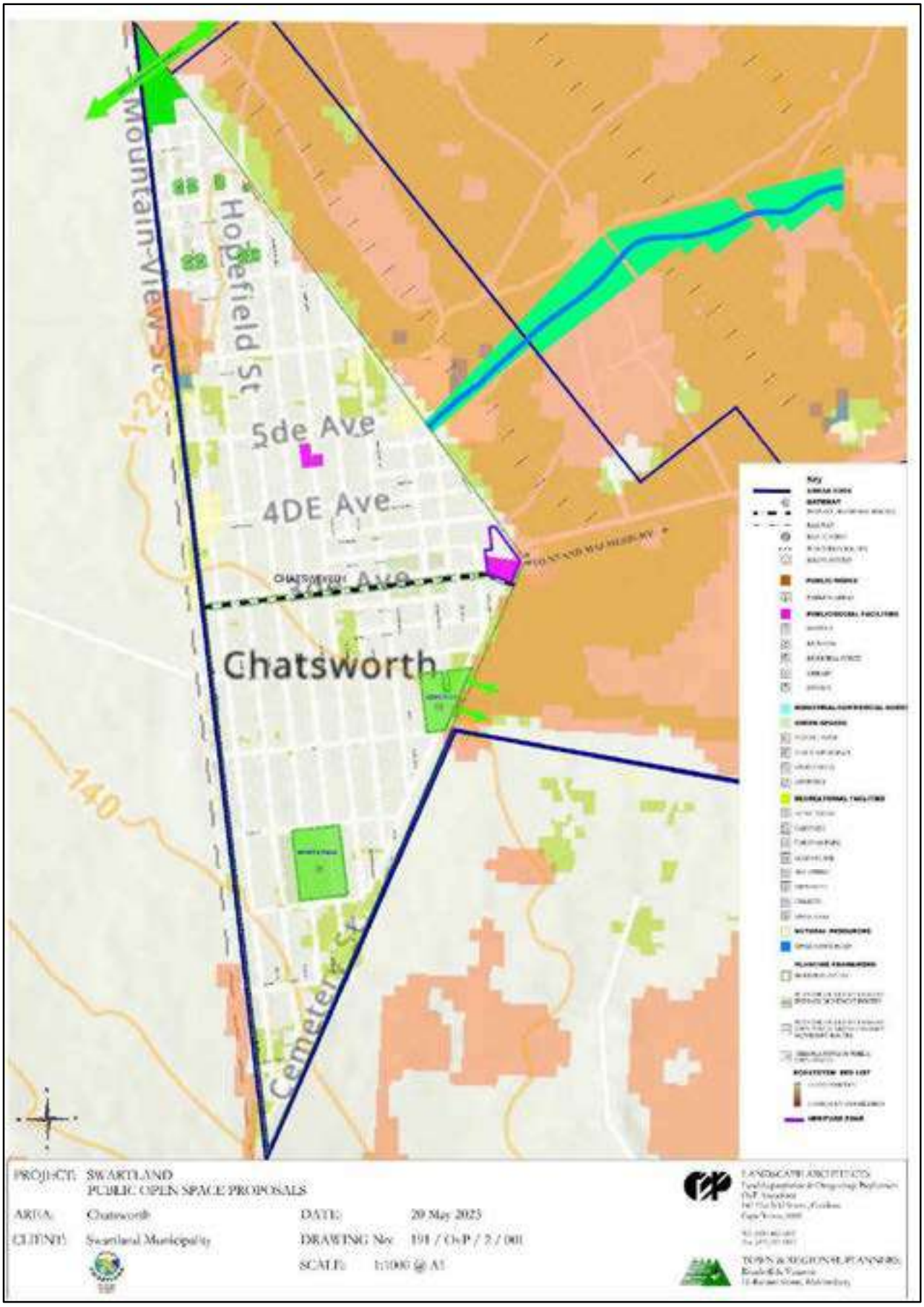
SPACE, BUILT			
	Elements	**No.**	**Proposals**
Protect	Heritage and Tourism:	41	Chatsworth's history is similar to Riverlands. The first church was built in 1900 followed by a school in 1906. As a private person originally owned Chatsworth, erven were sold to individuals and individual ownership still prevails today.
	Residential:	42	Chatsworth has a distinctive triangular shaped grid layout which changed due to a subsidised housing development in the northern precinct of Chatsworth. Lower and limited medium density residential developments populate the town. Chatsworth and Riverlands form part of the Greater Chatsworth area and are residential towns.
		43	Riverlands residents commute to work in Malmesbury, Cape Town and Atlantis.
Change	Heritage and Tourism:	44	Control demolition and extension of heritage buildings.
	Residential:	45	Require different residential types/ topologies and effective use of services.
		46	Expand along the eastern periphery of Chatsworth. Provide subsidised housing on land owned by Department of Human Settlements.
		47	Densify through subdivision, infill & renewal and restructuring, in accordance with zone proposals.
		48	Enrol farm workers on to the house waiting list.
		49	Keep waiting list up to date.
		50	Finalise the proposed housing project, to address backlogs, along the north eastern periphery.
	Commercial:	51	Enhance existing CBD at the entrance to town and at the secondary node in the northern precinct.
		52	Strengthen economic and social node at town entrance.
		53	Enhance the smaller commercial node adjacent to Malmesbury and Randorf Streets in the subsidised housing development.
		54	Upgrade the public node and use as the market place in the CBD.
	Industrial:	55	Identify areas for future expansion of bulk infrastructure.
Develop	Heritage and Tourism:	56	Enhance tourism, exploiting natural resources (community gardens, harvesting wild flowers and markets).
	Residential:	57	Formalise smaller farming units in area between Chatsworth and Riverlands (Department of Human Settlements Project).
		58	Develop land owned by Department of Human Settlements between Riverlands and Chatsworth, known as Michiel Heyns Kraal.
		59	Adhere to minimum single residential erf size of 400m².
		60	Provide for integrated subsidised housing demands in Chatsworth. Government residential developments, supported by Human Settlement programmes, will be supported.
		61	Increase density by 2027 from the current 8.8 units per hectare to 10.3 units per hectare in Chatsworth.
		62	Provide 61.6ha in Riverlands over the next 20 years of which 5.9ha is vacant and undeveloped areas as per Vacant Land Audit.
		63	Settle farmers in area between (south and west) Riverlands and Chatsworth known as Vetkoekheuwel and protect the ecological corridor.
		64	Earmark Housing Development Agency's (HDA) land for the provision of housing.
		65	Formalise informal settlement known as Silvertown.
	Commercial:	66	Develop the business nodes and allow for mixed uses along activity corridors and activity streets.
		67	Develop an integrated community node on land earmarked for urban expansion on the Chatsworth side.
		68	Develop an activity corridor from the town entrance.
		69	Support integrated development and mixed uses in neighbourhoods. Allow house shops.
		70	Expand on north-eastern boundary and area around town entrance.
	Industrial:	71	Support services and light industry related development in Zone F and along the activity corridor at the town entrance in Zone H.

Objective 5: Protect ecological and agricultural integrity

PUBLIC INSTITUTIONS			
	Elements	**No.**	**Proposals**
Change	Community Facilities:	72	Provide adequate primary health care facilities.
		73	Provide education facilities with a focus on crèches and secondary facilities.
		74	Develop a new and larger multi-use sport facility and shared multipurpose community facility (Thusong centre) in a central position between Riverlands and Chatsworth.
Develop	Community Facilities:	75	Support the Department of Education in its plans to develop a new school site and educational facility (Transfer of primary school in process).
		76	Re-zone the public area in CBD as a local market square. Combine with bus and taxi stop.
		77	Create a new cemetery in the central node between Riverlands and Chatsworth.
		78	Build a wall between the Christian and Moslem sections of cemetery.

Objective 3: Sustain material, physical and social wellbeing

SPACE, NATURAL			
	Elements	**No.**	**Proposals**
Protect	Nature Conservation:	79	Natural Systems: Chatsworth is part of the Greater Chatsworth area that is home to Atlantis Sand Fynbos flora (endangered vegetation type).
		80	Protect the highly diversified vegetation on the northern periphery of Chatsworth that is zoned Open Space III (Nature reserve) and the corridor link to Riverlands Nature Reserve in the northeast.
Change	Nature Conservation:	81	Design interfaces between river and adjoining areas to be seamless and encourage buildings to front onto the river.
		82	Focus tourism development on the natural environment, nature reserves in the area and wild flowers.
		83	Support agri-tourism in surrounding area.
		84	Promote intensive agricultural use and smaller agricultural units in surrounding rural areas of Riverlands and Chatsworth, including Groenrivier Smallholdings and Tierfontein to allow access to agriculture land.
Develop	Nature Conservation:	85	Support the cultivation and harvesting of wild flowers.
		86	Manage and maintain the area during spring as a hotspot to view wild flowers.


Mountain-View-Ave
Hopefield St
5de Ave
4DE Ave
3DE Ave
Chatsworth
140
Cemetery St
Key
PROJECT: SWARTLAND
PUBLIC OPEN SPACE PROPOSALS
AREA: Chatsworth
CLIENT: Swartland Municipality
DATE: 29 May 2023
DRAWING No: 191 / OsP / 2 / 001
SCALE: 1:1000 @ A1
LANDSCAPE ARCHITECTS
TOWN & REGIONAL PLANNERS

LAND USE ZONE PROPOSALS FOR CHATSWORTH

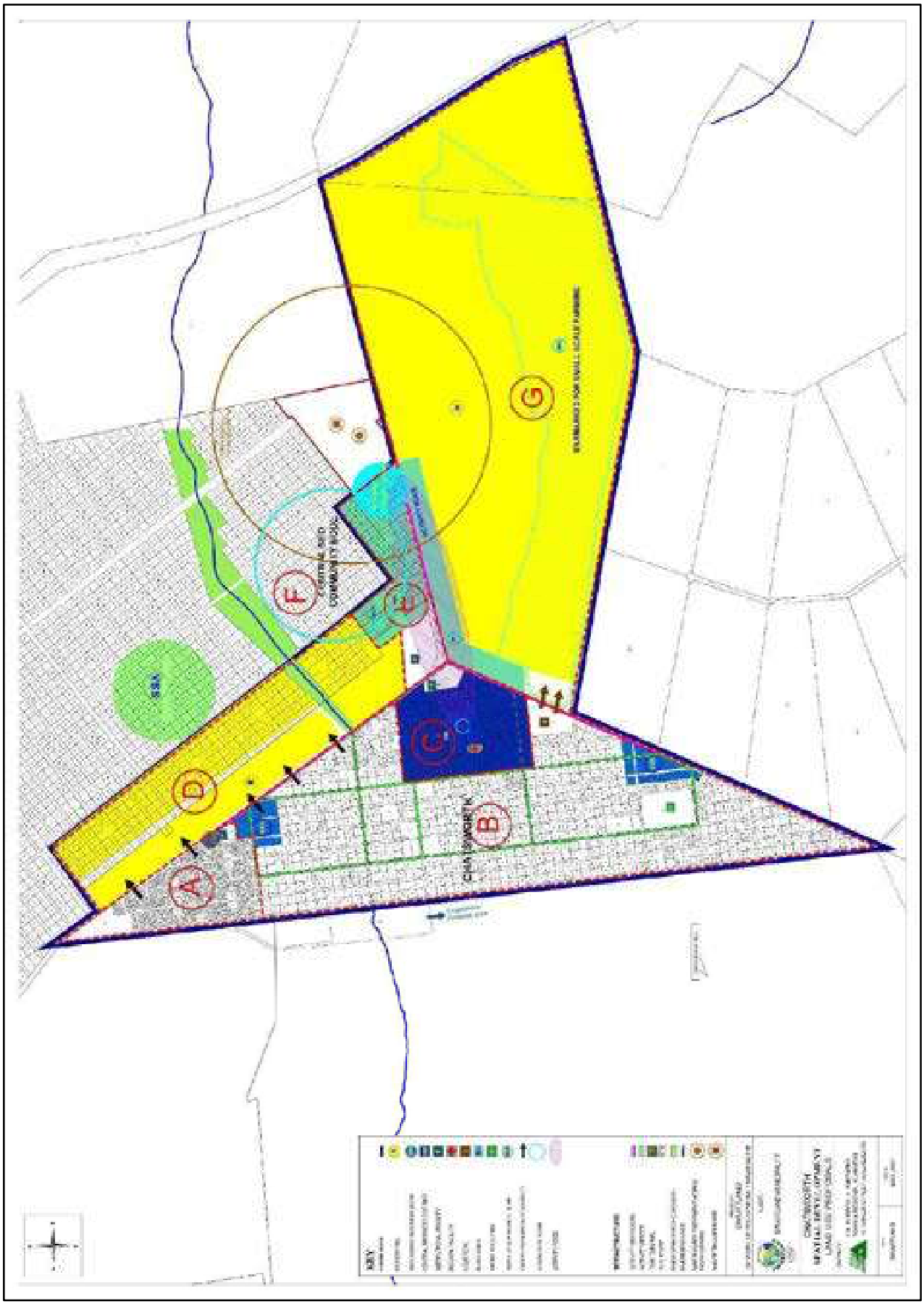
Refer to the land use zone map for Chatsworth: The urban area of Chatsworth is divided into seven (7) zones (areas with common features) and the recommended land uses for the different zones are listed in the table below:

CHATSWORTH LAND USE ZONES		Low Density Residential Uses	Medium Density Residential Uses	High Density Residential Uses	Secondary Educational Uses	Place of Education	Professional Uses	Business Uses	Secondary Business Uses	Place of Worship	Institution	Guest houses	Authority	Sport/Recreational Facilities	Industries &Service Trade
A	Zone A is a new high density residential area with a conservation area on the northern periphery.	X	X	X	X	X				X			X	X	
B	Zone B has a low density residential character with mixed commercial uses along activity streets and within proposed business nodes. Allow for infill residential development.	X	X	X 2,3	X		X	X 1,2	X 1,2	X	X	X	X	X	
C	Zone C represents the Central Business district with various mixed uses including commercial and residential uses.	X	X	X	X	X	X	X	X	X	X	X	X	X	
D	Zone D is an area where the expansion of residential and supporting social services are proposed.	X	X	X	X	X	X	X	X	X	X	X	X	X	
E	Zone E is an area proposed for services industries and mixed uses as well as educational and community facilities.		X	X	X	X	X	X	X	X	X	X	X	X	X 5
F	Zone F is located to the north of the access road, outside the urban edge. This area is earmarked for an integrated Community node for the provision of social services that will serve both Chatsworth and Riverlands to support the integration between the communities. The existing sewerage restricts other uses in the area.					X 4							X 6	X	
G	Zone G is earmarked for high density residential uses. Support activity corridor and node at the entry to town. Allow for mixed uses along the activity corridor including commercial, service trade and light industries as well as small scale agriculture.	X	X	X	X	X	X	X	X	X	X	X	X	X	X 5

(1) Along activity streets/corridors
(2) At identified business and mixed use nodes
(3) Flats along activity streets
(4) Multi-purpose Community centre
(5) Only service trade and light industry
(6) New Cemetery

Business Uses e.g. shop, supermarket, restaurant, offices, service station
Place of Education e.g. Schools, places of instruction
Professional Uses e.g. offices like doctors, dentists, attorneys, architechts, engineers and town planners.
Secondary Business Uses e.g. neigbourhood bussines uses such as house shops, small offices and home occupation. House taverns only to be allowed along activity streets in residential areas on discretion of the Municipality.
Secondary Educational Uses e.g. Crèches/day care

*Find description of proposed land uses for development zones in Annexure 4


A
B
C
D
E
F
G
CHATSWORTH

5.3.3 Intensive Rural Development Corridor

The southern part of the Swartland, including wards 4 and 7, is historically neglected and has poor provision of services and a very weak economy. During 2008, as part of the delineation of the urban edges of towns within the Swartland, an Intensive Rural Development Corridor was identified to facilitate opportunities and **to stimulate the economy.**

Intensive agricultural and agricultural related production and processing, mixed uses allowing service industries, transport services, tourism related facilities, and rural living opportunities on smaller agricultural units and small scale agri-processing on farms are all encouraged to enhance the economy.

Although this area is located outside of the urban edge it will form a specific development area or precinct, that will be subject to development guidelines in order to control the specific land use within the corridor and in particular areas designated for agricultural production and biodiversity and waterway (stream) conservation.

Expansion of the Intensive Rural Development Corridor forms part of the amendment of the SDF to include an area immediately adjoining the N7 to the west.

Extend the Intensive Rural Development Corridor which stretches between Malmesbury and Kalbaskraal along both sides of the N7, to the east between the Diep River /Old Cape Road and on the west to Chatsworth and Riverlands. The following properties and developments should be included in the Intensive Rural Development Corridor.

Tierfontein Estate

Farm 758 is located immediately west of the N7 and on the south western boundary of Abbotsdale, between Malmesbury and Cape Town. The zoning of land in the estate is Agricultural Zone 3: Smallholdings. The Tierfontein Estate, comprised of 59 smallholdings, with an average size of 14,278ha, was created around The Tierfontein Estate, or Goedehoop small holdings, as it is otherwise known (forming portions of original Goedehoop an internal road network that is accessed off a tarred access road off the N7. The land uses within the estate include - mainly residential, a combination of residential and agricultural, as well as some agri-industries that include packaging of farm products, the canning and preservation of products as well as milk processing and cheese making. Adding value to produce produced on small holdings is a natural result of intensive production that achieves economies of scale. Water within the estate is obtained from individual boreholes with an onsite sewerage disposal. A minimum subdivision size of 10 ha is recommended for smallholdings on this Estate.

Amoskuil Estate

Amoskuil Estate is located between Malmesbury and the Tierfontein smallholdings and allows for another smallholding or rural living area on the fringe of the urban area. It will serve as a transition zone between the urban uses to the north and the more rural type uses to the south. A minimum size of 2 ha is recommended for smallholdings in this area.

Groenerivier Estate

The Groenerivier Estate is located on the southern boundary of the Swartland and is accessed off the Klein Dassenberg Road. The Estate is home to 26 smallholdings located around a single private access road and is zoned for Agricultural Zone 3: Smallholdings. The average size of the smallholding in the area is 20 ha which allows for further subdivision to create smaller units, subject to the availability of water. A minimum size of 10ha is recommended for smallholdings in this estate. The estate is managed by a Home Owners Association.

The extension of the proposed corridor between Malmesbury and Kalbaskraal on both sides of the N7 includes a total of 159 properties of which 113 are small holdings and 46 are larger farms. .

Development Directives

Western Cape SDF: Requires consideration of the social, economic and ecological environments in development planning to ensure that development serves present and future generations (sustainable development).

As land is a fixed and scarce resource, high potential land with adequate water in close proximity to markets needs to be optimally cultivated and developed.

Diversification of agricultural uses needs to be balanced with the availability of land and water.

Development guidelines

The support of economic enterprises and different growth areas within the rural landscape are guided by the regional and local demographics and the economic indicators for Malmesbury as discussed above. The proposed Intensive Rural Development Corridor will support the three pillars of sustainability through:

Ecological Integrity – support and conserve both natural and man-made environments through conservation of the natural environment features such as Diep River and the adjacent riparian (riparian - relating to wetlands adjacent to rivers and streams) Corridors.

Social justice – provide opportunities for small farmer settlement (intensive and alternative farming) and historically disadvantaged individual settlement that will allow distribution of resources (land).

Economic efficiency – optimal utilization of scare resources (land and water) to maximize output, at the lowest possible cost, yet appropriately managed. Encourage sustainable agriculture and land management practices.

Economic opportunities will create jobs in Ward 4 and 7 and address realities of rapid urbanization which are - increasing unemployment and increasing pressure on farm incomes.

The Micro-Economic Development Strategy of the Western Cape Provincial Spatial Development Framework promotes diversification of agricultural enterprises. Diversification contributes a general stability to agriculture.

According to the Swartland Economic Profile, "the Swartland economy contributes in the order of one and a half percent (1.5%) to the provincial economic activity in the Western Cape whilst it represents some one point eight percent (1.8%) of the total provincial population*". The Swartland economy is fairly diversified* with the *main contributors Swartland contributes seven percent (7%)* to *provincial agricultur*e. *Agricultural production in the Swartland* has *diversified* over time and this diversification should be enhanced and maintained. *(Van der Merwe, 2005: 22).*

being agriculture, manufacturing, trade and services. These sectors provide most jobs. Thus: *Increase the contribution to the Swartland economy and to the provincial economy.* *Enhance diversification of the economy.* *Contribute to agriculture, manufacturing and trade and services* *Create employment.*	a) *Malmesbury is the administrative seat and regional centre of the Swartland Municipality.* b) *The IDP of the Swartland Municipality prioritises economic growth of the Swartland area.* c) *Listed at the 14th position on the ranking list of provincial towns having a high growth potential, Malmesbury will play an important development role within the Swartland Municipal area and within the West Coast region as a whole.* d) *Malmesbury offers strong institutional and commercial services strengthened by close proximity to markets (Cape Metropole) which contributes to the ranking of the town's potential.*

The development directives guide the proposals to follow:

Status Quo	Development Proposals
As diversification built the value chain, agglomerating economic activities including agri-processing and distribution of agricultural products and services forms the backbone of economic activities in Malmesbury.	Agricultural Development opportunities: ▪ Generation of products (e.g. vegetable, milk) for local, regional and international consumption. ▪ Localized (on farm/smallholding) product enhancement (e.g. Tierfontein/Groenerivier Estate). ▪ Diversification of produce (mixed farming) limiting dependency on grain production (e.g. vineyard development, hydroponics, dairies, etc.). ▪ Generation of high value products aimed at specialty markets (e.g. health food industry, organic farming). ▪ *Diversifying from production to services such as hospitality and tourism: farm stay opportunities, agri-tourism and agri-conservation attractions. (Setplan, Malmesbury Atlantis Spatial Plan, 2000: 54).* • Transferring skills in agri-processing, diversification of agriculture and agri-tourism to enhance employability. • Processing on-site to capitalise on the proximity to the metropolitan markets (e.g. organic produce) and to the source (limiting environmental footprint) • Any development and water use/run-off/waste fills must take consideration of the adjacent Riverlands NR which is located 'downstream' – all land and run-off end up in the reserve, transforming the natural habitat.
Utilities and Engineering Services <u>Water:</u> Water is obtained from boreholes taking water from the primary and secondary aquifers in the area, from the Diep River (limited) and roof runoff and used for farming (intensive irrigation, stock etc.) and drinking water.	○ Maximize the utilization of existing infrastructure where possible. ○ Suitable development that will not jeopardize the safety along the N7. ○ Enhancement along N7 route, building the theme "Gateway to the Swartland". ○ Easy and effective access and traffic flow on service roads along N7 and the Corridor. ○ Effective use of water resources. ○ Provision of municipal/district municipal water to densely populated and intensive development areas.

Voëlvlei pipeline (potable water) traverses the area but is not accessed within the Corridor. The water reticulation line in Chatsworth provides a potential connection to the Groenerivier Estate. Sewerage: Tierfontein smallholdings have septic tanks, which need to be pumped regularly. Other properties within the Corridor have onsite septic tanks and soakaways. Waste Disposal: Waste disposal within the farming area is the responsibility of the farm owners. Transferring to the Highlands Landfill Site is encouraged. Electricity: ESKOM distribute and supply electricity providing a 66Kv electrical transmission line.	○ Installation of small sewerage package plant for rural living/smallholding development to limit potential impact on environment.
Roads: N7 (TR11/1) is the main road (trunk route) along this corridor which links Cape Town with the North West and Namibia, and the West Coast. The N7 dual carriageway between Cape Town and Malmesbury provides service roads on both sides of the highway creating easy access and traffic safety to conduct business. Divisional road DR111 (Old Cape Road), between Malmesbury and Kalbaskraal on the eastern side of the Diep River (now being upgraded). DR 1138, linking N7 and Kalbaskraal (east) and Greater Chatsworth (west). Klein Dassenberg Road on the southern boundary of Swartland municipality provides access to the Groenrivier Estate and surrounding properties and links to Atlantis and the R27. Minor roads within the area include: - the access roads to Tierfontein smallholdings (e.g. minor roads 520/521/522/523) (need to be upgraded), - The access road to the east of the N7 via the proposed Main Road 530. Provision of access along Proclaimed Provincial and National Roads to be	Access to markets: The proposed freight airport along the N7 between Cape Town and Malmesbury will enhance accessibility. Currently this airport is located within the boundaries of the City of Cape Town. Hence the area around the intersection providing access to Atlantis and to Kalbaskraal can develop as a transport, business, communication, training and tourism hub beyond agricultural intensification. Proximity: Malmesbury's location in relation to the Cape metropole and its accessibility by road N7 and rail enhances economic opportunity. Maintain road infrastructure to ensure that the Corridor is well connected to the metropolitan area, Malmesbury and Atlantis. Upgrade roads to control dust, manage storm water and increased traffic (due to agri-industrial activities). Develop policy regarding the location of farm stalls and signage within the Corridor along the N7.

assessed and provided in accordance with the WCG DTPW Access Management Guidelines (2020) and SANRAL. <u>Rail:</u> Railway line between Darling and Kalbaskraal and part of Kalbaskraal-Darling–Saldanha Line is used as a goods line with a siding at Riverlands. Bellville-*Malmesbury-Bitterfontein Line,* used for the transportation of goods with stations in Kalbaskraal and Abbotsdale.	
Visual and Acoustic Quality: The corridor is framed by distant mountain and hill ranges, rolling cultivated hills, the Diep River along the eastern boundary, remnants of natural veld, historical farmsteads and buildings, and rural villages (Abbotsdale, Kalbaskraal, Chatsworth and Riverlands). Remove negative landscape features such as invasive alien vegetation (Port Jackson or *Acacia saligna) and* visually obtrusive signage along the N7. The corridor is associated with rural sounds, noises generated by the N7 should be mitigated specifically at residential areas such as Abbotsdale. The remainder of the area within the corridor has mainly intensive and extensive agricultural uses. The agricultural practices within this area include limited extensive dry land agriculture as well as mixed intensive agricultural practices with the production of grains, cereals and vegetables under irrigation. Other intensive agricultural practices include pig farming, poultry farming (batteries), nursery, irrigated vegetable production, vegetable seedling production and a small area with vineyard.	*Visual and Acoustic Quality:* o Limit the visual dominance of development along the N7 by maintaining a buffer zone along the N7 or screening using plants and earth mounds. o Provide guidelines for signage and development features along the N7.

The tourism industry within the local area is currently restricted by either no organized central market or farm stall to sell the locally produced products.	
Agricultural development: o Protect land with high agricultural potential. o Minimize potential conflict of urban fringe and agricultural interface. o Manage development appropriately in floodplain areas.	*Tourism:* o Establish the Corridor along the N7 as the 'gateway' to the Swartland characterised by mainly an intensive production landscape.

○ Protect river flows and abutting riparian zones. ○ Support the establishment of agricultural smallholdings within the Corridor facilitating agricultural enterprises on the urban edge, intensive agricultural enterprises and boutique farming for new emerging products such as e.g. lavender, hydroponics and climate controlled production in tunnels. ○ Allow for subdivision of existing smallholding areas of Tierfontein and Groenerivier with minimum sizes of 10ha. ○ Allow for the creation of more intensive smallholding/rural living (minimum size of 2ha) within the transition zone between Malmesbury and Tierfontein Estate. ○ Allow opportunities for the enhancement of agricultural products on site e.g. packaging, fruit drying, preserving. ○ Earmark opportunities for emerging farmers and resulting land reform within the corridor. ○ Establish space where producers and consumers can trade local produce and products. ○ Control and prevent over consumption of resources such as water from the aquifers.	○ Establish the Diep River and the Old Kaapse Weg as Swartland Meander (From Malmesbury and Abbotsdale to Philadelphia). The Swartland Meander enhances: - The culture and history of the Greater Chatsworth area, Kalbaskraal, Abbotsdale and Malmesbury, - The natural attractions of the landscape: Diep River, fauna and flora. - Diversification into agro-tourism (community based projects e.g. Fynbos nurseries) and agri-conservation. - The Diep River conservation zone as a multi-use open space with cycle paths along the river between Abbotsdale and Kalbaskraal. *Open Space management:* ○ Create a rural open space corridor along the Diep River, enhance the natural vegetation by removing alien vegetation. ○ Develop appropriate recreational opportunities along the River with pedestrian/cycle paths that link Malmesbury with Kalbaskraal and attract recreational tourism. ○ Investigate and establish a range of recreational facilities that supports the environment. ○ Conserve and protect the remaining open areas along the Diep River.
Part of the Leliefontein subdivision area is also being utilized for land reform. The Leliefontein Farming Trust, consisting of approximately eight individuals, utilise Portion 18 of the Farm 817 for agricultural production which includes cultivation of vegetables and livestock such as goats.	
The land uses within the existing Tierfontein smallholding area include a combination of residential and agricultural use with a small percentage of the smallholdings having a mainly residential function. Detailed analysis of the land uses within the area reveals the following: orchards, tunnels for crop cultivation, pastures for grazing variety of livestock (sheep, cattle, horses, and goats), agri-industries such as the packaging, canning and preservation of products and milk processing which include cheese manufacturing as well as a nursery.	
Residential Development: ○ Promote more intensive development around peripheries of existing towns – allow for the extension of these urban edges. ○ Allow opportunities for rural residential purposes. ○ Allow for subdivision of existing smallholding areas of Tierfontein and Groenerivier with minimum sizes of 10ha. ○ Allow for the creation of more intensive smallholding/rural living (minimum size of 2ha) within	

the transition zone between Malmesbury and Tierfontein Estate. o Encourage rural residential development that allows environmentally friendly services such as solar power and eco-friendly sewerage treatment plants. o Create safe environments. o Provide distinction between rural living and agricultural production/ processing area in order to limit potential land use conflicts.	
Commercial development: o Allow for supportive retail opportunities such as farm stalls. o Allow for cultural and entertainment facilities that support the rural setting and environment. o Promote intensive commercial/industrial type uses on the periphery of towns as part of future expansion of urban edges. (Limit potential future conflict of use by focusing more on intensive urban uses i.e. commercial, industrial and residential uses around the periphery of urban areas).	*Industrial/Service Industries:* Allow development of industries within the zone earmarked for agri-processing and packaging, service industries to agricultural production and related transport uses. This value adding to products within close proximity at the source (production area) thereby reduce the environmental footprint.

The Intensive/ Rural Development Corridor will enhance diversification of agricultural uses to allow for residential, industrial, commercial, tourism and open space networks. Such uses will optimize the economic viability of these enterprises allowing the establishment of a produce/craft corridor along the N7 and a tourism route along the Diep River.

The growing demand for agricultural land to be redistributable land to historically disadvantaged individuals and from investors to establish intensive agricultural use close to the market place, provides the driving force behind this initiative.

Land Use Management and Development Guidelines that apply to the corridor are:

- Reinforce the existing smallholding areas of Tierfontein and Groenerivier Estates as well as the extended Corridor area to promote and continue the current levels of land utilization. This can be achieved through the following:
  - Permit the further subdivision of existing properties (± 20ha in extent) to achieve minimum size of 10 ha where land capacity and water allows for it. This would address the market demand for smaller rural units. It is however very important that any further subdivisions should be subject to an overall subdivision guideline to facilitate adequate access, future service installation and minimal impact on existing surrounding agricultural activities. Any future proposed subdivision also needs to be informed by the aquiver impact monitoring process proposed for the Tierfontein area.
  - Allow for a broader spectrum of permitted uses such as “cottage industries” and “rural enterprises”. These uses should be facilitated as permitted uses, consent uses, or

departures as opposed to rezoning, in order to ensure that smallholdings are not misused for other unsuitable/inappropriate uses such as industrial use.

- Relaxation of excessive building lines.
  It is recommended that the extent of allowable subdivisions and the spectrum of permitted uses should be subject to support by local residents.

- Monitoring of groundwater extraction and pollution within Tierfontein and the proposed Corridor by the local authority and the Department of Water Affairs.
  - Aquifer sustainability and pollution control – this will inform both future sustainability of the proposed corridor and its further subdivision potential.
  - Need to upgrade the service levels within this Corridor. Investigate package treatment works, eco-friendly sewerage systems that treat water for reuse on smallholdings.
- Mitigate any impact on biodiversity, abstraction of groundwater and ecosystem services, and compile an area wide plan or local development framework to address environmental threats and resource scarcities.
- N7 setbacks – Maintain a 30-meter setback on both sides of the N7 from the edge of the road reserve for acoustic and visual protection of development along the N7. Will also facilitate the proposed future widening of the N7 as a dual carriageway. To ensure visual and acoustic protection introduce a 20-metre landscaped area, where indigenous shrubs and trees are utilized as well as where earth mounds can be used as a form of acoustic barrier.
- Diep River setbacks – promote adequate setbacks from Diep River for development and the installation of septic systems to ensure limited impact on groundwater quality. Encourage the development of a cycle/pedestrian tourist path along the river from Malmesbury to Kalbaskraal.

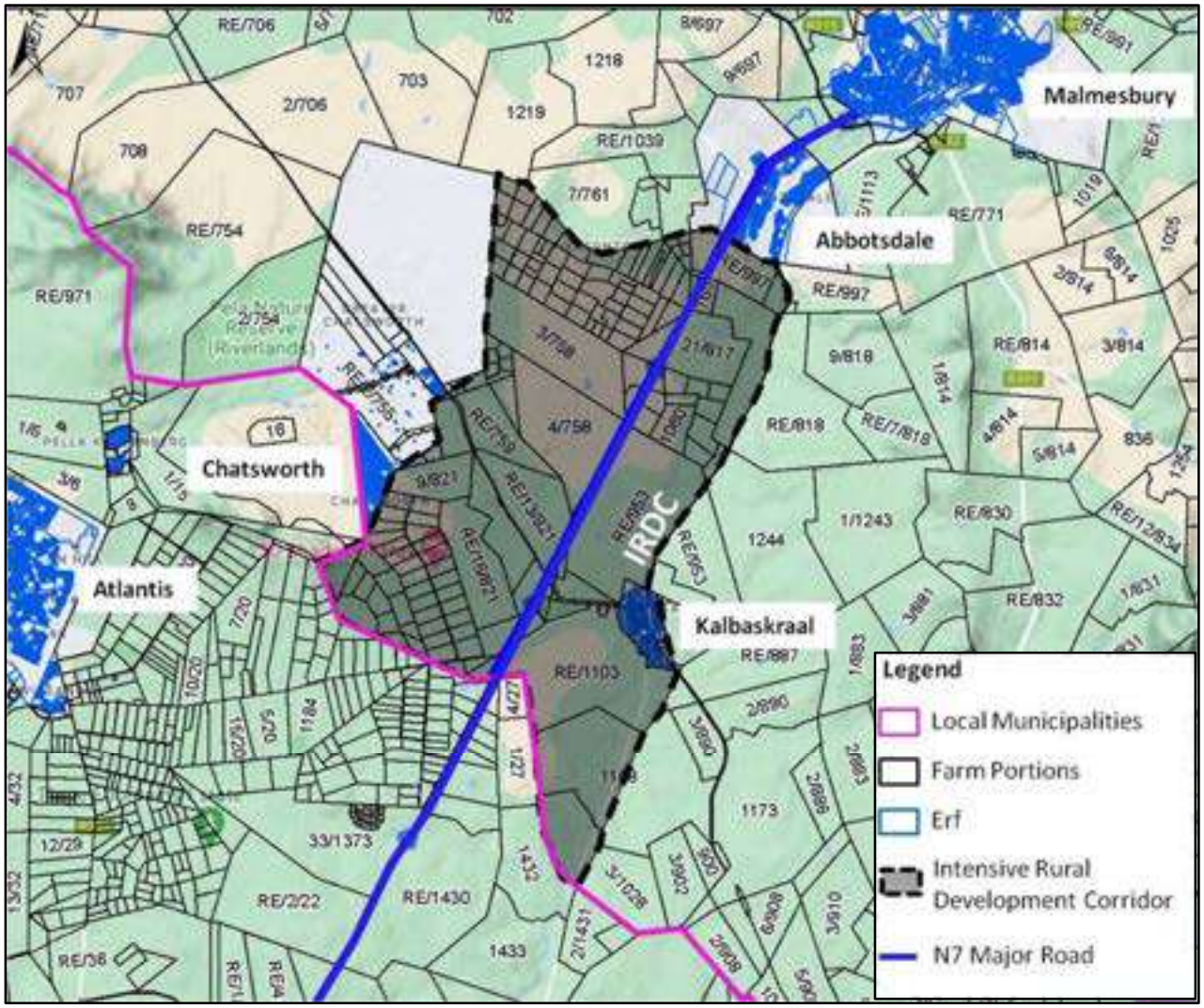
The proposed facilitation of the Intensive Rural Development Corridor as a functional agriculturally based environment which allows for rural working, living and recreational opportunities within the designated Corridor. The proposed development of the Corridor will further mobilize and expand the access to the rural resources and accommodate the sustainable growth and management of this unique area.

The proposed development of the rural corridor will support the following spatial planning objectives:

- **Intensification of the land use and rural activities** within the proposed corridor (allow for smaller subdivision of agricultural land) – that will result in a more effective utilization of the natural resources e.g. land, water, with improved economic outcomes.
- Provide **increased opportunities** for rural related land use mixes within the area – activate larger economic base with more opportunities.

- Support the concept of **spatial justice** with the creation of smaller farming entities and allow for access to small upcoming farmers and possible more intensive land reform projects.
- Provide an **integrated development plan** for the proposed corridor – provide integration of physical, economic, social linkages within the area (access, product enhancement, local village markets, farm stalls, environmental tourism, and conservation zone along Diep River).
- Establish a corridor edge around a designated area for small farmers in **support of a specific identity** for the area - create a sense of place that facilitates and allows for the integration of rural residential, plus different forms of intensive and urban agricultural uses (because of the close proximity to local and regional markets), and which also focuses on conservation and recreation.
- Balance the rural space, agricultural uses, natural resources and protect the natural beauty of the environment. Keep the character "Swartland Agriculture", which include wheatfield, vineyards, tree clusters (as screens) and could include clusters of buildings that look alike farm yards.
- Create opportunities for provision of bulk services infrastructure for the area, road upgrades to control dust, to manage storm water and to accommodate increased traffic (due to Agri-industrial activities) (upgrade of Proclaimed Provincial Road Network will be determined by the DTPW Roads Branch).

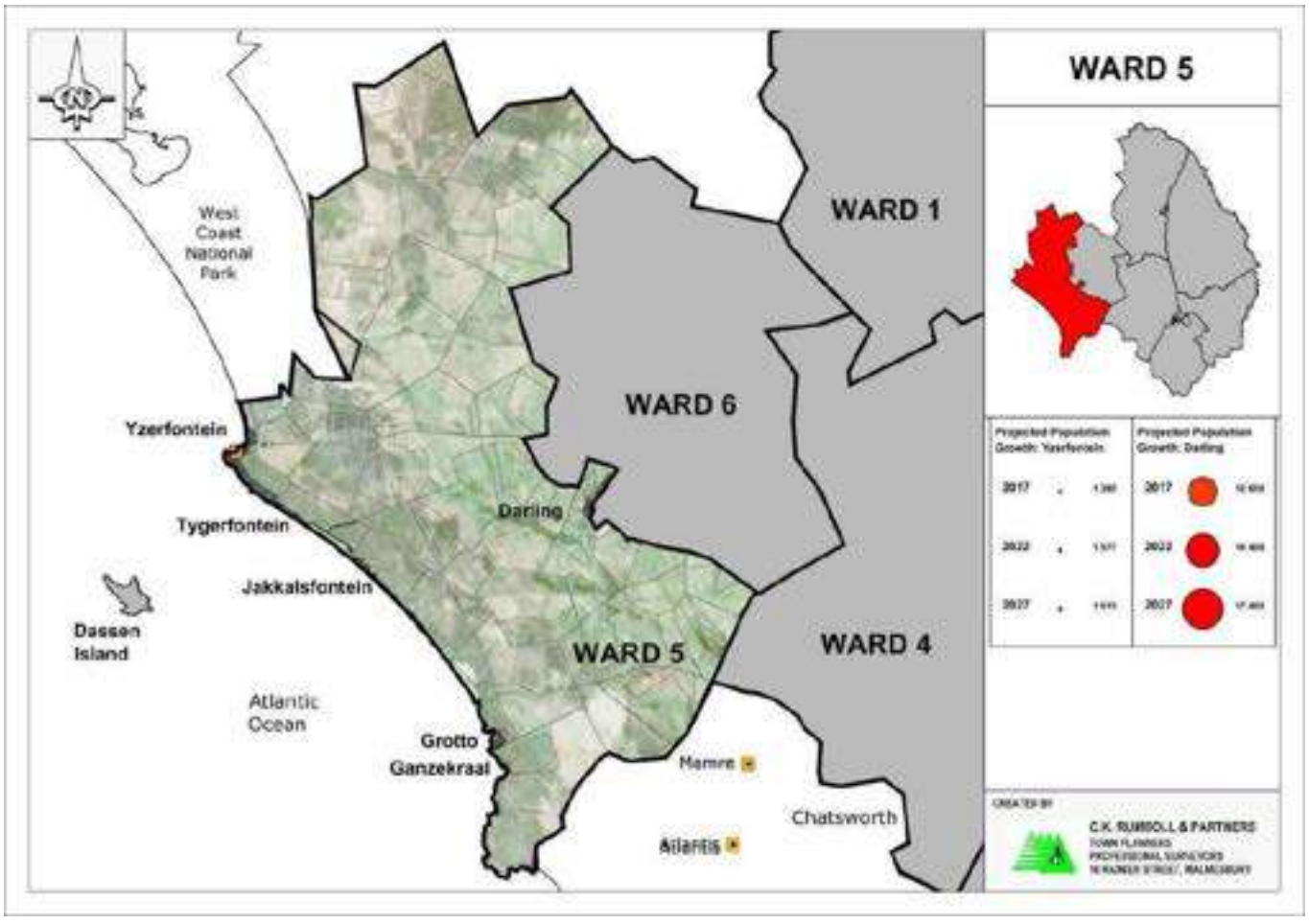
It is important to note that the development of the Corridor should be done with sensitivity towards space, agricultural uses, natural resources and the natural beauty of the environment. New planned developments within the corridor will also assist the Swartland Municipality to create opportunities for provision of bulk service infrastructure for the area that will assist in the lowering the impact on the environment and allow sustainable development within this unique area.



The delineation of the Intensive Rural Development Corridor attempts to bring about a responsible, sustainable rural development pattern that will protect the essence, integrity and character of the rural area along the N7 and the Diep River between Malmesbury/Abbotsdale and Kalbaskraal.

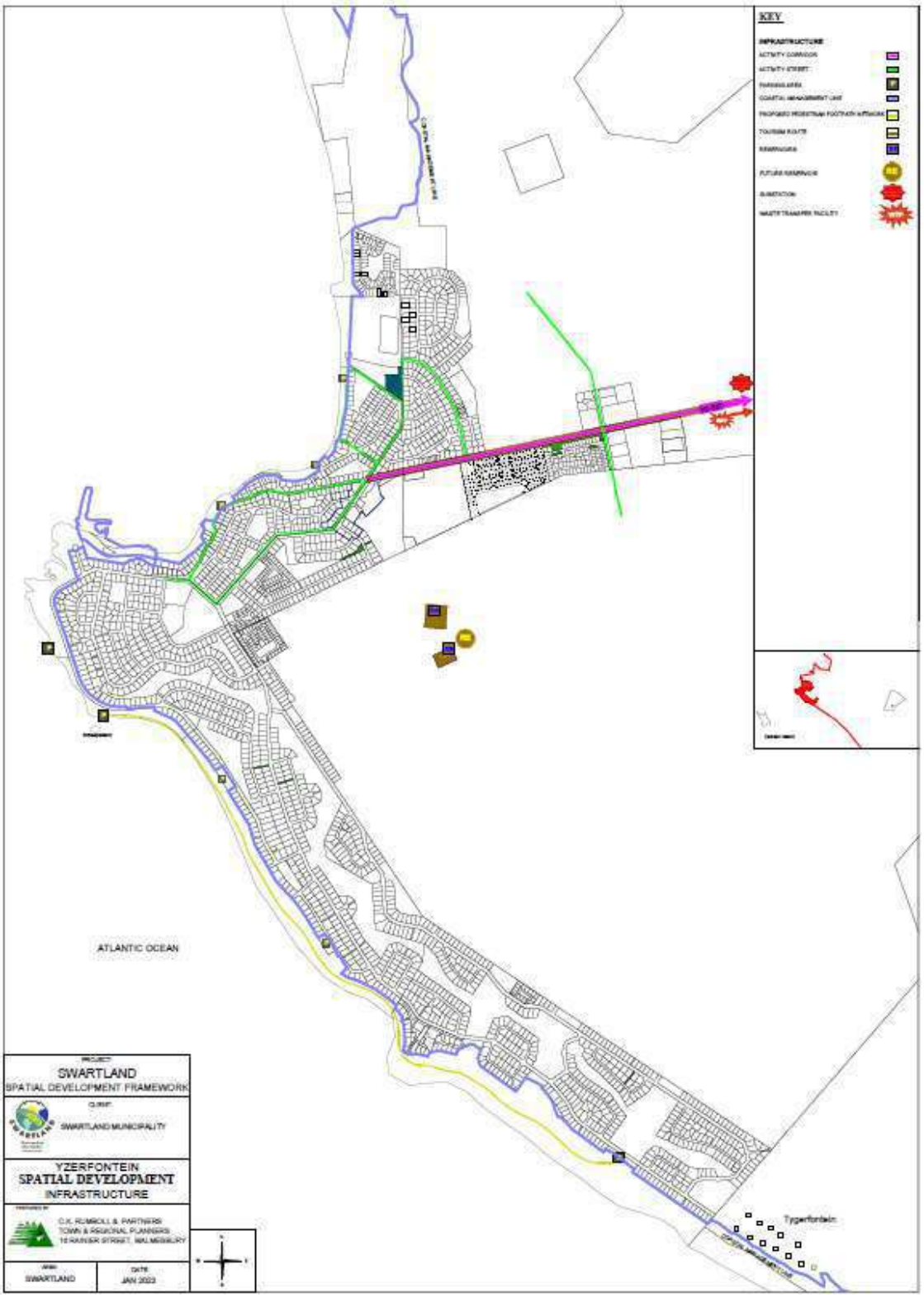
5.4 Ward 5: Yzerfontein, Grotto Bay and Rural Areas

Ward 5 represents the western part of the Swartland, along the Atlantic coastline. This area includes the coastal town of Yzerfontein as well as part of Darling with intensive and extensive agricultural production farms, Darling Hills and a natural coastal strip, that is conservation worthy, and includes leisure accommodation estates and resorts such as Jakkalsfontein, Grotto Bay, Tygerfontein, Buffelsfontein Private Reserve and Ganzekraal. Dassen Island in the Atlantic Ocean, approximately 10 kilometres to the south west of Yzerfontein is also included into this ward. This ward is the only ward with a coast line in the Swartland. The coastline is an important tourism resource and local and regional economic driver.



5.4.1 Yzerfontein

Yzerfontein is approximately 80 kilometres from Cape Town along the west coast. This location advantage and accessibility contributes to the town's attractiveness and growth over the past years. Permanent residents commute to work from Yzerfontein.



Objective 2: Proximate convenient and equal access

CONNECTIVITY			
	Elements	**No.**	**Proposals**
Protect	Roads:	1	R315 crosses the R27 (West Coast Road) & connects with Darling about 27km east of Yzerfontein, and Malmesbury about 60km further east.
		2	R27 connects with Cape Town& Vredenburg / Saldanha / Langebaan / Velddrif (north).
		3	Main Street from R315.
		4	Dasseneiland serving Pearl Bay and Yzerfontein point area.
		5	Connecting routes to Pearl Bay and Yzerfontein point are Lutie Katz, Versfeld and Dasseneiland Avenue.
	Activity streets:	6	Park and Buitekant Street serve the area north of the R315.
		7	Buitekant and Main Street are the main axis of central town.
Change	Roads:	8	Maintain and upgrade the R315.
		9	Support the development of mixed uses along Main Street up to the intersection with Buitekant Street.
		10	Upgrade and beautify Main.
		11	Formalise town entry point.
		12	Plant tree lanes, provide street furniture and develop pedestrian walkways.
	Activity streets:	13	Develop a centralised taxi/bus stop with relevant infrastructure and an all-weather shelter for commuters in central business district area.
	Pedestrian / cycle routes:	14	Provide accessible, surfaced, shaded and adequately lit and safe pedestrian walkways and cycle paths.
		15	Ensure access for disabled people in accordance with national standards.
Develop	Roads:	16	Upgrade surrounding road networks i.e. R315 and R27 (Swartland to interact with Department of Public Works and Transport).
		17	Formalise parking areas (provide paving/hard surfaces, identify parking spaces) along beach and coastal areas.
		18	Provide adequate public parking, including parking for the disabled.
	Pedestrian / cycle routes:	19	Formalise shared use walkways and trails in nature conservation areas (public open spaces) and along coastline (recreational "nature walk") Develop a pedestrian/ cycle route from R27 and R315 intersection along R315 to Yzerfontein.

Objective 2: Proximate convenient and equal access

PUBLIC UTILITIES			
	Elements	**No.**	**Proposals**
Protect	Water:	20	Voëlvlei Scheme supplies Yzerfontein with water stored in two (2) reservoirs holding 5000 kl in total.
	Electricity:	21	Yzerfontein has an Eskom 66/11Kv 5MVA substation. Upgraded in 2016/2017.
		22	Bulk capacity still inadequate for planned developments.
		23	Street lightning adequate.
	Waste:	24	Weekly Swartland Municipality collects all domestic waste and transports it to Highlands Landfill.
	Safety:	25	A fire station facility provides services to Yzerfontein and surrounding area. National Sea Rescue Institute operates station 34A at Yzerfontein harbour.
Change	Future demand:	26	Avoid placement of service infrastructure in conservation worthy areas.
		27	Support extension and development of communication infrastructure (WACS cable along African West Coast and distribution centre outside Yzerfontein along R315).
		28	Develop areas in accordance with availability and capacity of infrastructure and services.
	Water:	29	Expand water provision to all properties.
		30	Manage adequate capacity for future demand (ML/ annum) as per "*Water Services Development Plan*": 2017: 268,216 2022: 285,785 2027: 304,549 2032: 324,594
		31	Build additional reservoirs to provide for required storage capacity needs.
		32	Explore potential for desalinisation plant.
	Electricity:	33	Pursue upgrading of obsolete electrical infrastructure.
	Waste Water:	34	Determine requirements from future developments as per growth model to be compiled (Swartland Council decision, April 2017).
	Storm water:	35	Formalise storm water system.
		36	Upgrade approximately 1 km of gravel roads.
	Waste:	37	Secure budget for and rehabilitate landfill site which still serves as transfer station.
Develop	Future demand:	38	Align bulk infrastructure planning with SDF growth proposals.

		39	Expand bulk infrastructure to support future limited residential & industrial growth.
		40	Earmark areas for expansion of bulk infrastructure and align with SDF proposals to minimize impact on landscape.
		41	Identify site for WWTP.
	Water:	42	Require sparse use of service resources and promote use of alternative energy, water wise developments & water harvesting.
	Electricity:	43	Pursue a proposed second substation.
	Waste Water:	44	Provide for future development a Waste Water Treatment Works at Yzerfontein.
	Storm water:	45	Rent an additional truck to pump sewerage during holiday seasons.

Objective 1: Grow economic prosperity and facilitate economic sector growth and
Objective 4: Protect and grow place identity and cultural integrity

SPACE, BUILT			
	Elements	**No.**	**Proposals**
Protect	Heritage and Tourism:	46	In 1935 Yzerfontein was established when 330 properties, to be use as holiday accommodation, were created on a part of Farm Yzerfontein No. 560. Seven new extensions and 1523 erven followed between 1970 and 1990. Yzerfontein has grown into a prestigious holiday destination and is popular among retirees, holiday makers and tourists. Sixty percent (60%) of the population are permanent in Yzerfontein and residents commute to work.
		47	Port facilities are small and limited, but opportunity strengthening commercial sector and recreation exists (fishing and water sport). The fish market at town entrance allows fishermen to sell their produce.
	Tourism:	48	The delineation of the urban edge of the area east of Pearl Bay was done in consultation with a Baseline Sensitivity Study that was done by Nick Helme during July/August of 2008, on the entire Portion 4 of the Farm 560, with subsequent amendments to the report during July 2009. The Restricted Residential development proposal for this area as indicated on the Yzerfontein proposal plans was identified as part of the delineation of the urban edge in 2012.
		49	This detailed study of the entire farm 560 provided the necessary accurate input to determine the low, medium and high value conservation areas on the farm. The delineation of the urban edge considered the conservation status with the urban edge excluding the high conservation value area and including areas of medium conservation value. A tourism node is porposed north of Yzerfontein. Several studies determined the footprint and the developable area. Ecologically sensitive development should be promoted and measures should have to be put in place to mitigate with coastal erosion and to preserve the dune system.
	Residential:	50	Yzerfontein's development footprint is informed by the coastline and natural veld and its urban form is mostly linear with access from distinctive main roads.
		51	Residential development constitutes most of the built environment of Yzerfontein with some commercial and social uses. Historically architecture evolved including "Beach Bungalow" evolving to a more modern minimalist style.
		52	Three distinctive residential areas exist in the town of Yzerfontein: The historical area at the main beach, parallel to the coast with supporting commercial and social infrastructure. The area located on the higher altitude point of Yzerfontein, in the centre of the urban area where the streets are parallel to the coast. The new extension of the town on the south-western plateau and coastal area with large areas of natural vegetation resulting in a lower density area.
	Commercial:	53	Primary and secondary commercial nodes: Primary node at intersection of Main and Buitekant Streets. Secondary node at corner of Volstruis and Park Streets (east of caravan park). Secondary node south of intersection between Lutie Katz and Main Street.
		54	New business nodes proposed at the entry to Yzerfontein and south west of Fish Market.
		55	Business node proposed in Pearl Bay around Dennis Katz Square along Dassen Island Drive.
		56	Business is conducted in Darling, Vredenburg and Cape Town Metropolitan area.
Change	Heritage and Tourism:	57	Develop aesthetic guidelines for Yzerfontein addressing street lighting and furniture to protect Yzerfontein's character.
		58	Support development of and improve tourism related infrastructure including local tourism kiosk, tourism signs and facilities (guesthouses, restaurants and venues).
		59	Support development of coastal recreational facilities and services (fishing trips, canoeing, etc.).

		60	Sensitively develop a kiosk/ commercial building at Yzerfontein harbour to accommodate a tourism related facility like a restaurant/ renting of canoes and guided trips.
		61	Maintain and refurbish the caravan park.
		62	Capitalise on mild climate, beautiful scenery and peaceful living environment making Yzerfontein a popular tourism, retirement and holiday destination.
		63	Protect heritage buildings. Control demolition and extension of heritage buildings.
	Tourism:	64	Formalise parking area on Erf 495.
	Tourism:	65	Pursue the recommendation for the development of the medium conservation which allows for continuation of ecological corridors with restricted residential development to be allowed for on the remainder. This medium conservation area was identified for restricted development potential with a ratio of 50% development footprint and 50% for conservation that was set as a benchmark for the development on the medium conservation value area that was include in the urban edge. A conservation offset ratio of 6.45:1 was also recommended as part of the study where 6.45ha of conservation land will offset every 1ha of development land within the coastal portion identified for restricted residential development.
	Residential:	66	Enrol farm workers on housing waiting list.
		67	Increase density by 2027 from the current 6.8 units per hectare to 7.8 units per hectare in Yzerfontein.
		68	Protect the character and historical context of surrounding environments and densify by means of infill development and willingness of owners to subdivide keeping in mind existing zonings, the character of surrounding environments and the unique sense of place and historical context of specific areas.
		69	Spatially allow for adequate areas for provision of different residential types.
		70	Support the development of rural residential opportunities and smallholdings (2ha) along the R315 as the entry road to Yzerfontein after the intersection with the R27.
		71	Develop group housing and flats with appearances of single homes.
		72	Densify in accordance with zone proposals through: Subdivision (sectional title); Infill development, and; Renewal and restructuring.
		73	Sectional title subdivision of existing houses on single residential erven.
	""""	74	Move the municipal storage shed on Erf 208 in Dolphin Street to fish market.
	Commercial:	75	Develop small business uses at the harbour to strengthen tourism node – small kiosk.
		76	Develop two additional commercial nodes in Pearl Bay to support the proposed medium density residential development, and along the entrance road to Yzerfontein, north of the fish market.
		77	Support the development of home occupation/professional services in residential areas.
		78	Support smaller supporting business uses along activity streets.
		79	Support secondary business uses based on the tourism industry along beachfront including temporary use of homes over holiday periods for exhibiting and selling products, small function venues, shooting advertisements and films, etc.
	Industrial:	80	Allow development of limited service industries south of fish market.
		81	Support limited service industries and agri-processing at intersection R315 and R27.
Develop	Heritage and Tourism:	82	Develop accommodation options in the urban and surrounding rural area.
		83	Develop a tourism strategy for Yzerfontein – in collaboration with local initiatives like "I love Yzerfontein".
		84	Develop educational hiking trails in natural veld areas.
		85	Develop a LUMS overlay zone for erven along the coast to allow for limited tourism related uses additional to primary residential use rights e.g. wedding/party venues, photo/advertising shoots and film production, temporary use of dwellings for exhibition and sale of products.
		86	Develop a medium size resort/ leisure accommodation immediately north west of Yzerfontein between the coastline and the marsh area known as the "Rooipan", to strengthen the tourist node which include operations like the "Strandkombuis".
	Tourism:	87	Develop tourism related uses within the Harbour area.
		88	Formalise day camping area on Erf 495.
	Tourism:	89	Ensure that these offset areas will be managed under a stewardship programme of Cape Nature, as was done for the first phase of development on the subject land. This initiative to also form part of future development phases to formalise more conservation areas.
	Residential:	90	Provide low to medium residential opportunities that is market driven, provided by private developers, affordable to a section of society whose income is below the neighbourhood's median or average household income. Examples would include, but is not limited to, smaller erven and houses, apartments, group and town housing and also retirement village facilities. The typology is aimed at first time home owners, young professionals, couples, retirees, etc.

		91	Provide 57.7ha in Yzerfontein over the next 20 years of which 340.3ha is vacant and undeveloped areas as per Vacant Land Audit.
		92	Keep waiting list up to date.
		93	Increase density in and around the CBD and along activity streets and encourage renewal.
		94	Keep minimum single residential erf size of 500m².
		95	Support subdivision of land along the R315 for smallholdings. Identify natural corridor links across these areas.
		96	Require private development to include different housing topologies.
		97	Develop an old age home and other retirement developments and facilities.
	""""""""	98	Initiate a residential development on Erf 208.
	Commercial:	99	Develop commercial uses at fish market supporting fishing industry and tourism.
		100	Develop a LUMS Overlay Zone for alternative uses of dwellings along beachfront e.g. for film shoots.
		101	Expand commercial uses and facilities such as the fish market at the entry to Yzerfontein (e.g. selling of fish and related products).
		102	Develop commercial node (fourth node) in Pearl Bay precinct.

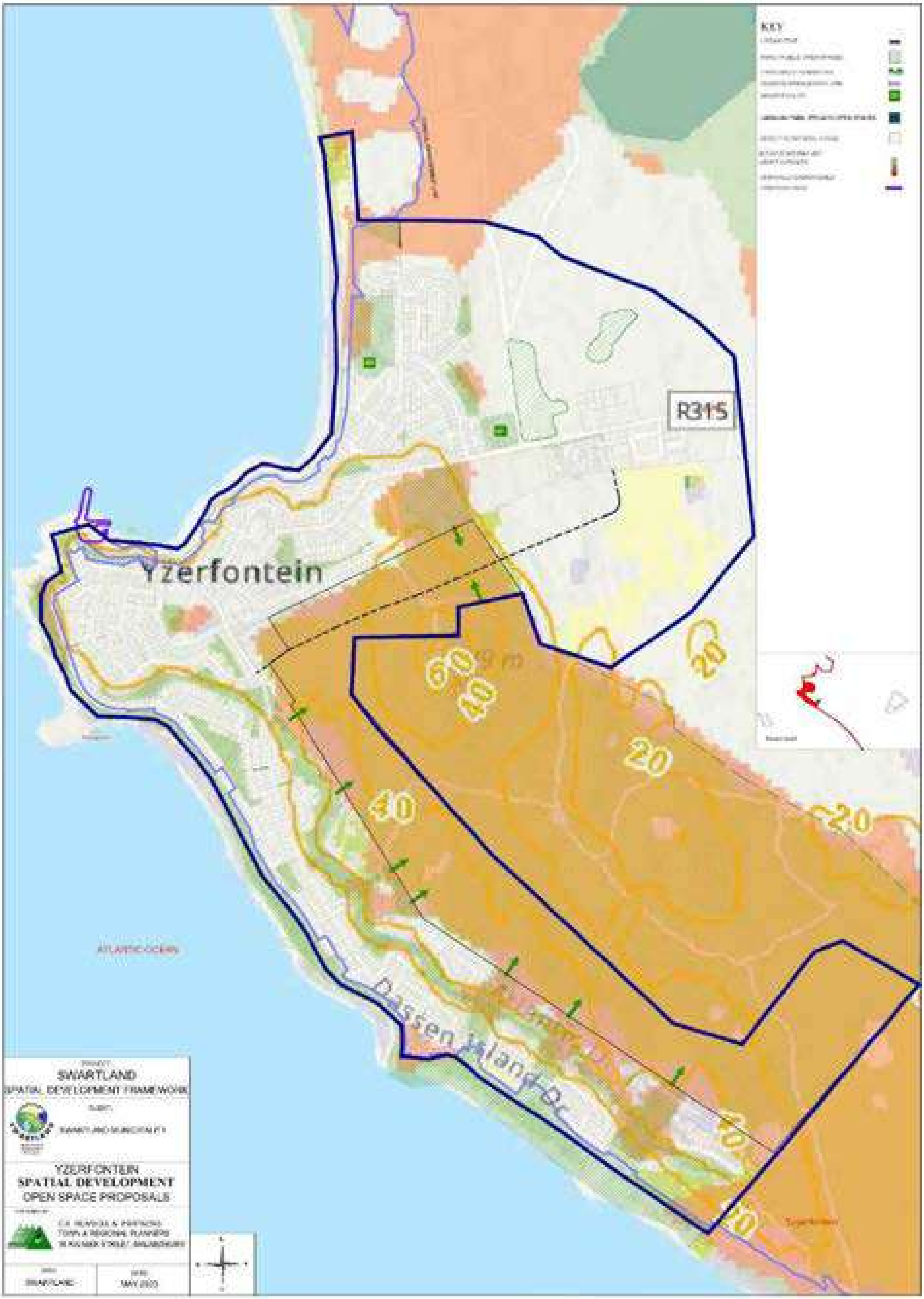
Objective 3: Sustain material, physical and social well-being

PUBLIC INSTITUTIONS			
	Elements	**No.**	**Proposals**
Protect	Community facilities:	103	The existing public node in the northern part of Yzerfontein on the north western corner of Buitekant and Dolphin Street includes a community hall, tennis courts and Bowling Green as well as a public caravan park.
Change	Community facilities:	104	Support the existing public node in the northern part of Yzerfontein on the north western corner of Buitekant and Dolphin Street.
		105	Support the main beach as important public node in Yzerfontein and expand supporting infrastructure and facilities.
		106	Continue to expand and maintain the public footpath network in Yzerfontein. Financially support the community organisations that are involved with the maintenance and development of these footpaths.
Develop	Community facilities:	107	Provide additional sports facilities along Main Street at the entry to town, for example, a driving range.
		108	Investigate the provision of a service centre for the aged.
		109	Support the provision of adequate primary health facilities.
		110	Maintain the existing vacant school site for future educational needs.
		111	Support the provision of community orientated services (crèches) in residential areas.
		112	Create a new cemetery to the east of Yzerfontein next to the R315.

Objective 5: Protect ecological and agricultural integrity

SPACE, NATURAL			
	Elements	**No.**	**Proposals**
Protect	Public and Private Space:	113	Urban form of Yzerfontein is derived from natural veld and coastline to be protected and is mostly linear along the coastline. Three distinctive residential precincts exist: - Historical precinct at harbour and parallel to beach with supporting commercial and social infrastructure; - Higher lying area (highest altitude point), in centre of urban area. Streets run parallel to coast, and; - New south west extension of town with large areas of natural vegetation and low density.
		114	There are three commercial nodes within walking distances of residential areas: - At town entrance, south west from the four-way stop; - East of caravan park where commercial uses serve the caravan park and surrounding residential area, and; - Commercial use node at Villa Fontana complex on peninsula area.
	Nature & Conservation:	115	Yzerfontein is surrounded by an 84-meter high hill east of the town and a 50-meter high plateau on the southern periphery parallel to the coast line.
		116	Yzerfontein is surrounded by Langebaan Saldanha Fynbos biome, highly diversified, a variety of habitat areas, ecosystems and vegetation types specifically adapted to the climate and soil conditions.

		117	The West Coast Natural Park is located north of Yzerfontein (and the area in between is the coastal and marine protection zone). There are several sensitive wetlands, pans and salt marshes north of Yzerfontein. There are four threatened vegetation types identified around Yzerfontein: - Langebaan Dune Strandveld found in alkaline dunes and sandy areas near the sea. - Saldanha Flats Strandveld found on neutral sand as transitional vegetation type between Dune Strandveld and Sand Fynbos. - Cape Inland Salt Pans. - Hopefield Sand Fynbos found in arid sandy soils further inland and north of Yzerfontein.
		118	Between Bokbaai and the southern periphery of Yzerfontein are 713 species of which 5.9% are listed as Red Data species. Large open spaces in Yzerfontein urban area are considered nature reserves.
Change	Public and Private Space:	119	Ensure greenfields developments provide for continuity of urban landscape and connectivity of natural vegetation corridors.
	Nature & Conservation:	120	Develop and maintain multi-use use trails as open space corridors, natural habitat links and recreational facility (hiking and mountain bike trails and alternative uses such as events facilities and venues).
		121	Provide formal boardwalk walkways across the dunes to beach. Require that dwellings in Pearl Bay with beach frontage formalise access to the beach with shared boardwalks (with neighbours).
		122	Require all greenfields developments to zone land to expand natural corridors.
		123	Provide recreational facilities (play parks, picnic areas, outdoor gym equipment, etc.).
		124	Enhance public node in northern precinct (corner of Buitekant & Dolphin Streets).
		125	Include the area between Bokbaai and Yzerfontein as part of the proposed West Coast Conservation Corridor and recommend that development nodes be identified to minimise impact on the natural vegetation. Large open spaces in the urban area of Yzerfontein are considered as nature reserves.
Develop	Public and Private Space:	126	Develop and formalise parking areas along the beach and coast to protect surrounding natural areas.
	Nature & Conservation:	127	Identify conservation worthy areas.
		128	Formalise status of natural conservation areas by entering into a stewardship programme with Cape Nature.
		129	Develop management plans for conservation areas.
		130	Identify archaeological sites at harbour and develop management plan to protect the sites.
		131	Remove alien vegetation and rehabilitate open space area.
		132	Develop an Environmental Management Plan for the open space/conservation network in Yzerfontein.
		133	Design interactive development interfaces along open space network.
		134	Prohibit development in high conservation worthy areas and exclude areas from urban edge.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ATLANTIC OCEAN
Dassen Island Dr
60
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SWARTLAND
SPATIAL DEVELOPMENT FRAMEWORK
YZERFONTEIN
SPATIAL DEVELOPMENT
OPEN SPACE PROPOSALS
MAY 2023

LAND USE ZONE PROPOSALS FOR YZERFONTEIN

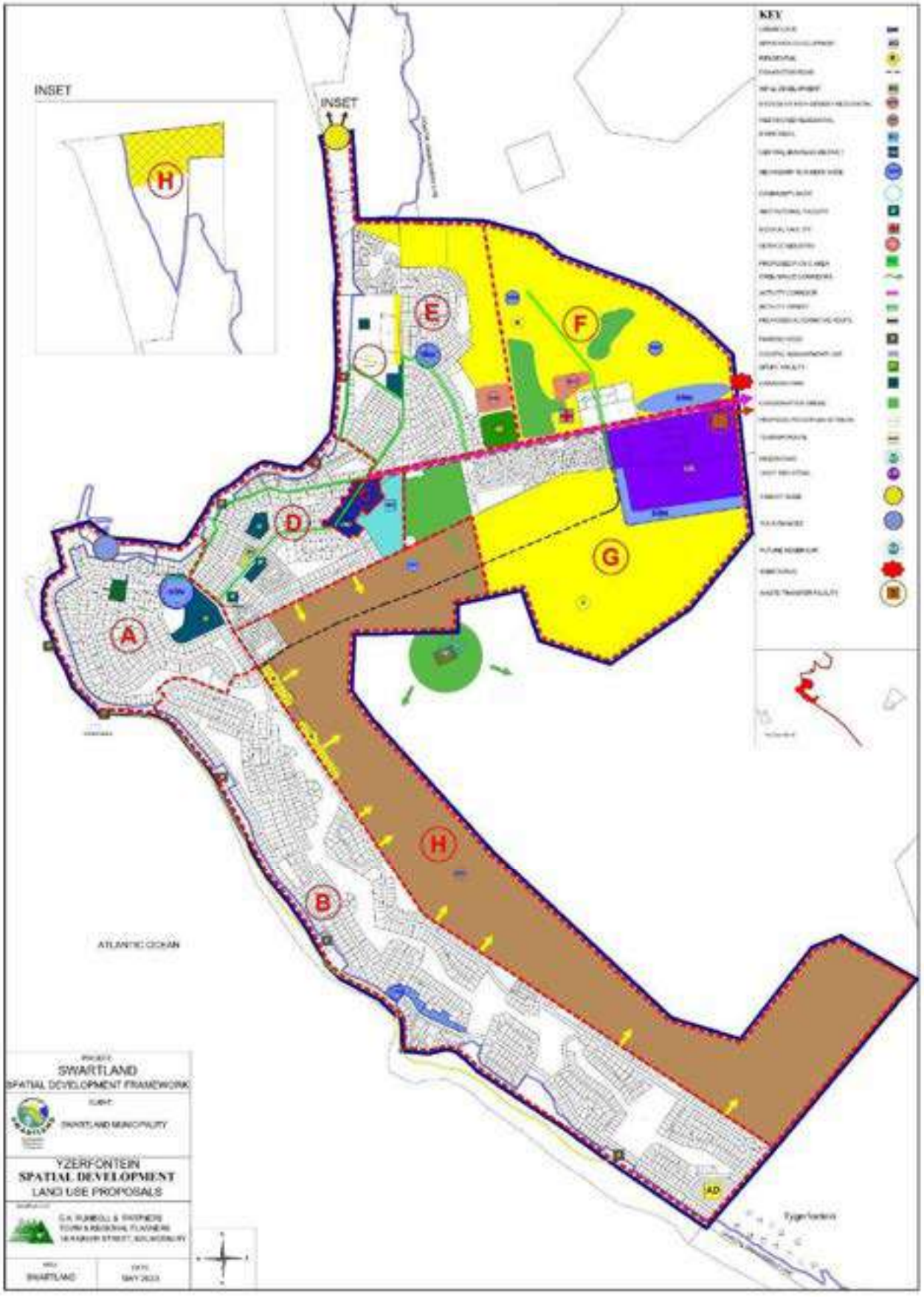
Refer to the land use zone map for Yzerfontein: The urban area of Yzerfontein is divided into eight (8) zones (areas with common features) and the recommended land uses for the different zones are listed in the table below:

YZERFONTEIN LAND USE ZONES		Low Density Residential Uses	Medium Density Residential Uses	High Density Residential Uses	Secondary Educational Uses	Place of Education	Professional Uses	Business Uses	Secondary Business Uses	Place of Worship	Institution	Guest houses	Authority	Sport/Recreational Facilities	Industries & Service Trade
A	Zone A, located at the most western point along the coast, has a residential character with larger sized properties as well as a small business node including mixed uses such as high density residential uses and a vacant school site. This zone also includes the harbour.	X	X	X 3	X	X 5	X	X 1,2	X 1,2	X	X	X	X	Har-bour X 6	
B	Zone B, Pearl Bay area, consists mainly of low density residential uses along the coastal stretch to the south, with a proposed node along the beach front as well as areas for medium and high density housing opportunities.	X	X	X 4	X		X 2	X 2	X 2	X	X	X	X	X 6	
C	Zone C represents the Central Bussines Disctrict.	X	X	X	X	X	X	X	X	X	X	X	X	X	
D	Zone D represents the older residential area, which allows for residential infill, social- and mixed uses.	X	X	X 2,3	X	X	X	X 1,2,	X 1,2	X	X	X	X	X 6	
E	Zone E is the residential area around the main beach with supporting community, sport and tourist facilities and a secondary business node. Allows area for residential expansion.	X	X	X 3	X	X	X	X 1,2 9	X 1,2 9	X	X	X	X	Sport Facility X 6	
F	Zone F is a proposed expansion area earmarked for residential, business, sport, and professional uses as well as service industries along the activity corridor.	X	X 8	X 3,8,9	X	X	X	X 1,2, 9	X 1,2, 9	X	X	X	X	X	X 7
G	Zone G is an expansion area south of the access road where residential and service industry functions around the existing fish market, are proposed. Other supporting functions like tourism facilities and a secondary business node are also encouraged.	X	X 8	X 3, 8,9	X	X	X	X 1,2, 9	X 1,2, 9	X	X	X	X	X 6	X
H	Zone H mainly offers opportunities for the expansion of residential uses and the continuation of green corridors to connect to the adjacent high value conservation area around the hill. Allow for supporting social and commercial uses.	X	X	X	X	X	X	X	X	X	X	X	X	X	

(1) Along activity streets/corridors
(2) At identified business and mixed use nodes
(3) Flats along activity streets
(4) On existing sites
(5) On existing school sites
(6) Tourism facilities
(7) Only service trade and light industries
(8) Include Affordable Housing but not limited to
(9) At proposed future residential development nodes

Business Uses e.g. shop, supermarket, restaurant, offices, service station
Place of Education e.g. Schools, places of instruction
Professional Uses e.g. offices like doctors, dentists, attorneys, architechts, engineers and town planners.
Secondary Business Uses e.g. neigbourhood bussines uses such as house shops, small offices and home occupation. House taverns only to be allowed along activity streets in residential areas on discretion of the Municipality.
Secondary Educational Uses e.g. Crèches/day care

*Find description of proposed land uses for development zones in Annexure 4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SWARTLAND MUNICIPALITY
YZERFONTEIN
SPATIAL DEVELOPMENT
LAND USE PROPOSALS
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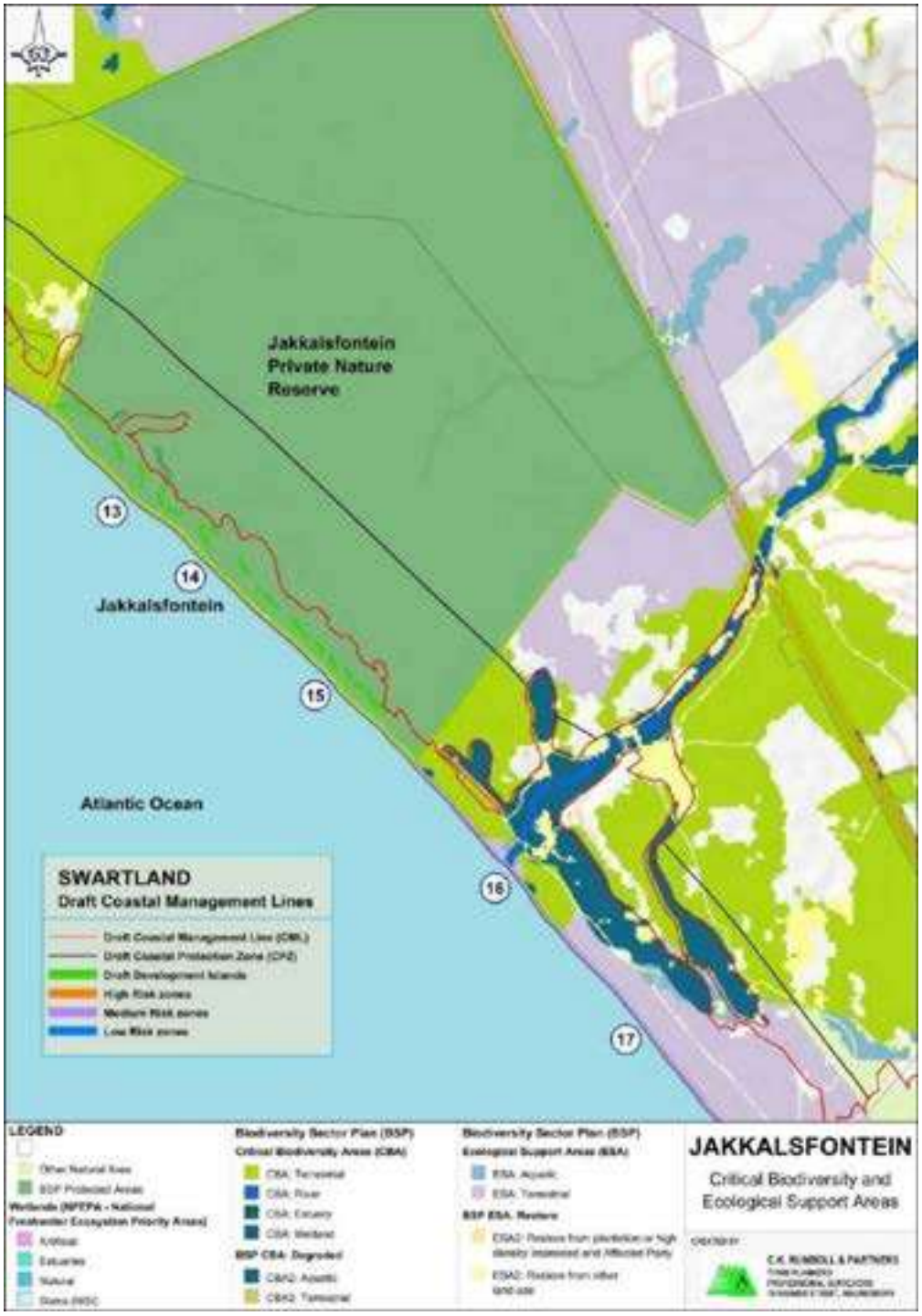
5.4.2 Tygerfontein

Tygerfontein, the farm located directly south of Yzerfontein, is a rural leisure accommodation node with 24 units on the coast with the remainder zoned as a private nature reserve (Open Space Zone III). This reserve will link with the proposed West Coast Conservation Corridor that is proposed to provide a continuous conservation corridor between the West Coast National Park, north of Yzerfontein, and the Blaauwberg Nature Reserve to the south. No further expansion of the node is proposed.

5.4.3 Jakkalsfontein

Jakkalsfontein Coastal Estate is directly south of Tygerfontein with a total of 150 leisure accommodation erven (previously known as Resort Zone II) in nodes along the coast. The remainder of the farm is zoned (Open Space Zone III) and managed by the Home Owners Association as a private nature reserve. This reserve will also be included in the West Coast Conservation Corridor between the West Coast National Park and the Blaauwberg Nature Reserve. No further expansion of the node is proposed.



5.4.4 Grotto Bay

Grotto Bay developed as a resort settlement with 220 residential erven (Leisure Accommodation Zone previously Resort Zone II) along the coastline. Erven were created in clusters with the surrounding natural area zoned as Open Space III and managed as the Grotto Bay Private Nature Reserve by the Home Owners Association. No further expansion of the node is proposed.

5.4.5 Ganzekraal

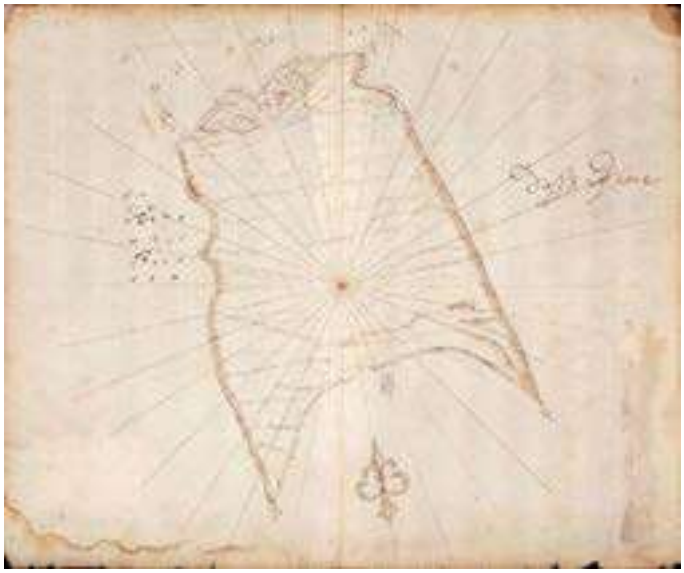
The Ganzekraal camping site is a public resort (Resort Zone I) located on the south western periphery of the Swartland along the West Coast and is managed by the West Coast District Municipality. The resort consists of day camping sites, overnight camping sites as well as resort units for temporary holiday accommodation.

5.4.6 Dassen Island

Dassen Island, approximately 10 kilometres offshore to the south west of Yzerfontein and deriving its name from the presence of colonies of "dassies" (rock rabbits), falls within the jurisdiction of the Swartland municipal area. Dassen Island Nature Reserve was proclaimed as a Provincial Nature Reserve in 1987 and falls within the Benguela Current Large Marine Ecosystem, one of several large internationally recognised marine ecosystems. The island is flat and low-lying measuring 3.2km in length and 1.6km wide. At 230ha, Dassen Island is the second largest South Africa coastal island situated on a continental shelf, after Robben Island.

The island is underpinned by a fine-grained tourmaline granite, with a few zones of biotite granite and part covered by sand. There is in general very little fresh water on the island. Except on its eastern side, Dassen Island is surrounded by reefs and shipwrecks.

The Dassen Island Nature Reserve is a haven to numerous breeding, roosting and migrating sea and shore bird species. Its boundary has been extended 500 meters seaward from the high-water mark. Expanding the reserve to a 20km radius around Dassen Island is envisaged which will protect the fish stock.



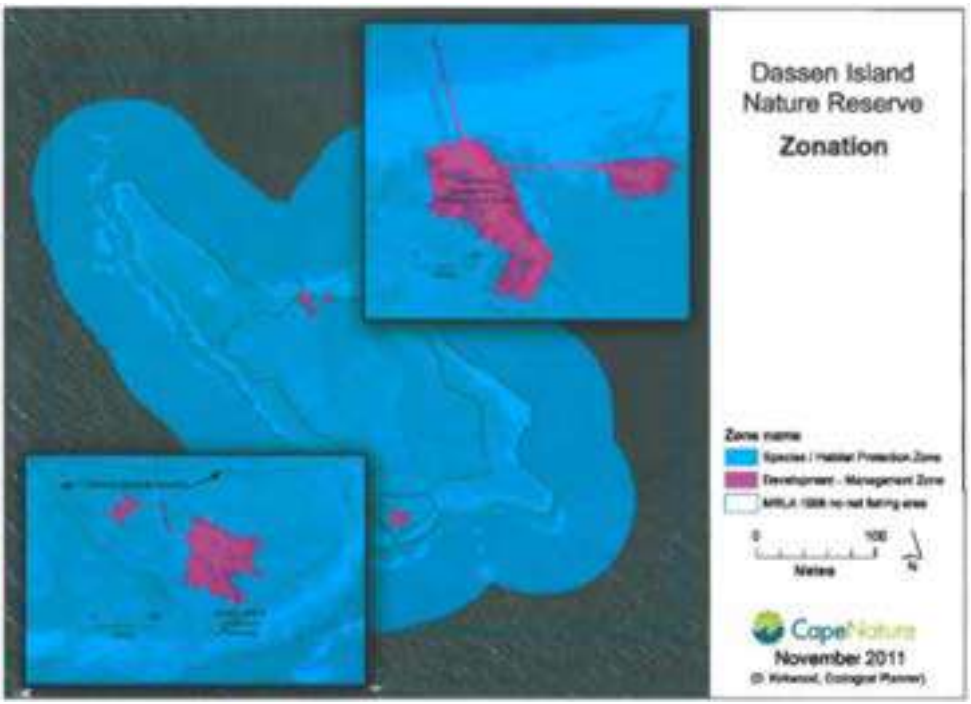
It is managed by Cape Nature under a formal Dassen Island Nature Reserve Management Plan 2013-2018. The objective of this Management Plan is to form part of the SDF.

Dassen Island Nature Reserve Management Plan 2013-2018 & Land Use Implications

The *Dassen Island Nature Reserve Management Plan, 2013-2018* was adopted by the Provincial Minster of Environmental Affairs and Development Planning in 2013. The plan provides objectives, priorities and action plans for the management of the reserve.

Through a SWOT analysis the sensitivity of Dassen Island Reserve in terms of its biodiversity, heritage and physical features was identified and depicted in two different protected area zones:

Figure 5: Identified Protection Zones on Dassen Island Nature Reserve



Source: Dassen Island Nature Reserve Management Plan 2013-2018

Figure 6: Access and facilities on Dassen Island Nature Reserve

Source: Dassen Island Nature Reserve Management Plan 2013-2018.

Development Management Zone:

Two precincts are categorised as Development Management zones. They include a 0.86ha area on the northern side of the island which includes the existing infrastructure for Cape Nature management and research accommodation and activities and the 1ha area on the south of the island which is restricted to the existing lighthouse management infrastructure and accommodation (National Ports Authority (Transnet) complex).

Protect	Change	Develop
Infrastructure and buildings are older than 60 years and have contextual heritage significance.	Support the provision of limited nature and cultural tourism and recreational opportunities within the Reserve e.g. boat based activities and spear fishing (strictly controlled tourism) (action plan, Tourism Development Framework of Management Plan).	Use Yzerfontein harbour for access to the Island, benefitting the local communities and providing an additional unique conservation tourism experience in Swartland. Protect the bird breeding site. Maintain existing infrastructure and trails on the island (adequate for management activities and access).

Species/Habitat Protection Zone:

The balance of the island and its surrounding seas is divided into five areas with different management needs, but all reflecting the requirement to limit access and management to protect regionally important sea and shorebird populations.

Due to the sensitive nature of the island and its protected status as a seabird breeding area, access to the Island needs to be restricted and controlled. Access to the island is therefore strictly limited to the researchers and filming activities with appropriate permits. These activities are strictly regulated and supervised by reserve management. Physical access can be obtained at a wooden jetty in House Bay at the Cape Nature complex on the northern side of the island and a helipad at the Transnet complex on the southern end.

Protect	Change	Develop
Restricted access. Protected pelagic fish stock in the waters that surround the island, keeping the fish within foraging range of the breeding seabirds on the island.	Expand the conservation zone to benefit local subsistence and recreational fishing communities which rely on the natural movement of the pelagic fish to attract larger predator fish and to benefit the breeding seabirds as their food is then in close proximity.	Support Cape Nature's Marine Protected Area Expansion Strategy and the national strategy on expansion to include a larger marine protected area of 20km around Dassen Island to the Dassen Island Nature Reserve.

5.4.7 Rural Areas of Ward 5:

The proposals below are ward specific. Any proposal that extends across ward boundaries was documented as part of the regional proposals.

Proposals are grouped according to the five objectives. Proposals per objective differentiate, where appropriate, between agriculture and tourism:

Regional proposals according to the five objectives follow below:

Objective 1: Grow economic prosperity and facilitate economic sector growth [Economic Environment]

	Agriculture	**Tourism**
Commercial	Develop an intensive rural use corridor along R315 from the R315/ R27 intersection and the town of Yzerfontein. Support the development of small holdings and small scale agri-processing along this corridor.	Promote festivals building agricultural brand i.e. Music Festival Rocking the Daisies, Crayfish Bonanza, Tuna and Snoek Fishing Competition.
	Strengthen agricultural activities in eastern part of Ward 5, a limited intensive agricultural production area to include vineyards, dairies, poultry rearing and piggeries. Support and allow for intensive agriculture, agricultural related industries, agriculturally related commercial opportunities and exhibition centres	Promote West Coast Conservation corridor as tourist destination.
Industrial	Support Salt mining on north east of Yzerfontein. Support gypsum, or calcium sulphate, mined north of Yzerfontein It is used in agriculture for soil conditioning. Support building sand mining along the R315.	Capitalize on link to Saldanha Industrial Development Zone (IDZ), accessing one of the largest natural harbours in the world. Support building sand and continued salt mining in Ward 6 with appropriate mitigation and rehabilitation.
	Support packaging and processing on intensive production farms (vineyards, stone fruits, olives and vegetables).	
Residential	In Yzerfontein, provide low to medium residential opportunities that is market driven, provided by private developers, affordable to a section of society whose income is below the neighbourhood's median or average household income. Examples would include, but is not limited to, smaller erven and houses, apartments, group and town housing and also retirement village facilities. The typology is aimed at first time home owners, young professionals, couples, retirees, etc.	Support development of resorts (within the West Coast Conservation Corridor).
	Support the development of a rural corridor along the R315 between the intersection with the R27 and Yzerfontein.	Allow for smallholdings and agri/ conservation/ tourism related uses around Yzerfontein.

Objective 2: Proximate convenient and equal access [Economic Environment]

R27	Link to Cape Town in the south with increased accessibility & reduced travel time. Link to the north with the Saldanha IDZ. Optimise links to markets (Cape Town & Windhoek). Promote node development at intersection with R315. Link to West Coast National Park and Blaauwberg Nature Reserve.
R315	Link between West Coast (R27) and Malmesbury via Darling is also part of the main tourism route in the Swartland between the Riebeek Valley and the West Coast (Yzerfontein), improve mobility. Continue maintenance of road network. Develop transport nodes along R315 and N7, ensure Darling, Mamre and Atlantis benefit. (Provision of access along Proclaimed Provincial and National Roads to be assessed and provided in accordance with the WCG DTPW Access Management Guidelines (2020) and SANRAL). R307 link from Darling to Mamre and gravel road to Moorreesburg.
Transport Node	Safeguard the intersection between the R27 and the R315 by making it more visible. A tourism node could provide visible supporting services.
Pedestrian/ Cycle route	Develop cycle route from Yzerfontein along the R315 to Darling, with a proposed bridge or underpass crossing of the R27. This will reinforce the tourism route of the R315 and act as a spatial gateway to the R315 route.
Communication corridors & Zones	Develop communication network facilities/ data centres/ telecommunication towers in rural areas of Yzerfontein. The WACS cable an international undersea communication network which lands at Yzerfontein.
Amenities	Support the use of !Khwa ttu education centre as a **social service centre** for surrounding residents with the potential to use it as a facility for adult education. Support development of commercial infrastructure on farms, including farm stalls and limited agri-processing, tasting of farm produce and markets, venues, along the R315 transport zone.

Objective 3: Sustain material, physical and social wellbeing [Social Environment]

Natural	Diversify agricultural activities to focuses on conservation and tourism offering alternative uses and products. 
Utilities	Darling Wind Farm has four wind turbines (north east of R27 and R315) Built water storage facilities/ reservoirs in Yzerfontein. Identify a future WWTP site in Yzerfontein. Upgrade WWTP in Darling. Enhance Darling Wind Farm. Enhance Photovoltaic development on Eenboom.

Objective 4: Protect and grow place identity and cultural integrity. [Built Environment]

Administrative	Promote Malmesbury as regional service centre and industrial town. Enhance Yzerfontein as coastal recreation and leisure town. Enhance Darling as local agricultural service centre for Ward 5 and 6. Support Tygerfontein, Jakkalsfontein and Grotto Bay as resort settlements under private Home Owners Association management.
Heritage tourism route	Consider a Cape outpost produced fresh food for the ships that sailed around the Cape. Develop a battlefield route to include the outpost form the Dutch East Indian Company at Grootte Post and Groene Kloof (near Mamre) and the farm Kraalbosdam to the north of Darling where one of the most fatal battles of the Anglo Boer War took place. Establish a fossil and archaeological resources route along the West Coast including historical excavations, fossils, kilns and rock art. Protect all and promote some of the 46 rural sites surveyed in the Swartland Rural Heritage Survey 2014 in Ward 5: 5 Grade 2 PHS (Provincial Heritage Site), 13 Grade 3 A (high local significance), 15 Grade 3 B (some local significance), 12 Grade 3C (limited local significance) and 1 no grading (no heritage significance). Develop Yzerfontein as tourism node and historical coastal town. Promote the different cultural historical features of the West Coast which include !Khwa ttu San Cultural Centre and historic farms dating back to the early 1800's and Mamre Mission Station (City of Cape Town). Conserve and maintain kilns outside Yzerfontein. Develop the slave liberation and mission station route to include Vogelgezang (freedom to slaves of 1808 and the Khoi rebellion), Abbotsdale (Anglican mission), and Mamre (Moravian mission) in Cape Town and Wittewater and Goedverwacht missions in Bergrivier municipal area.

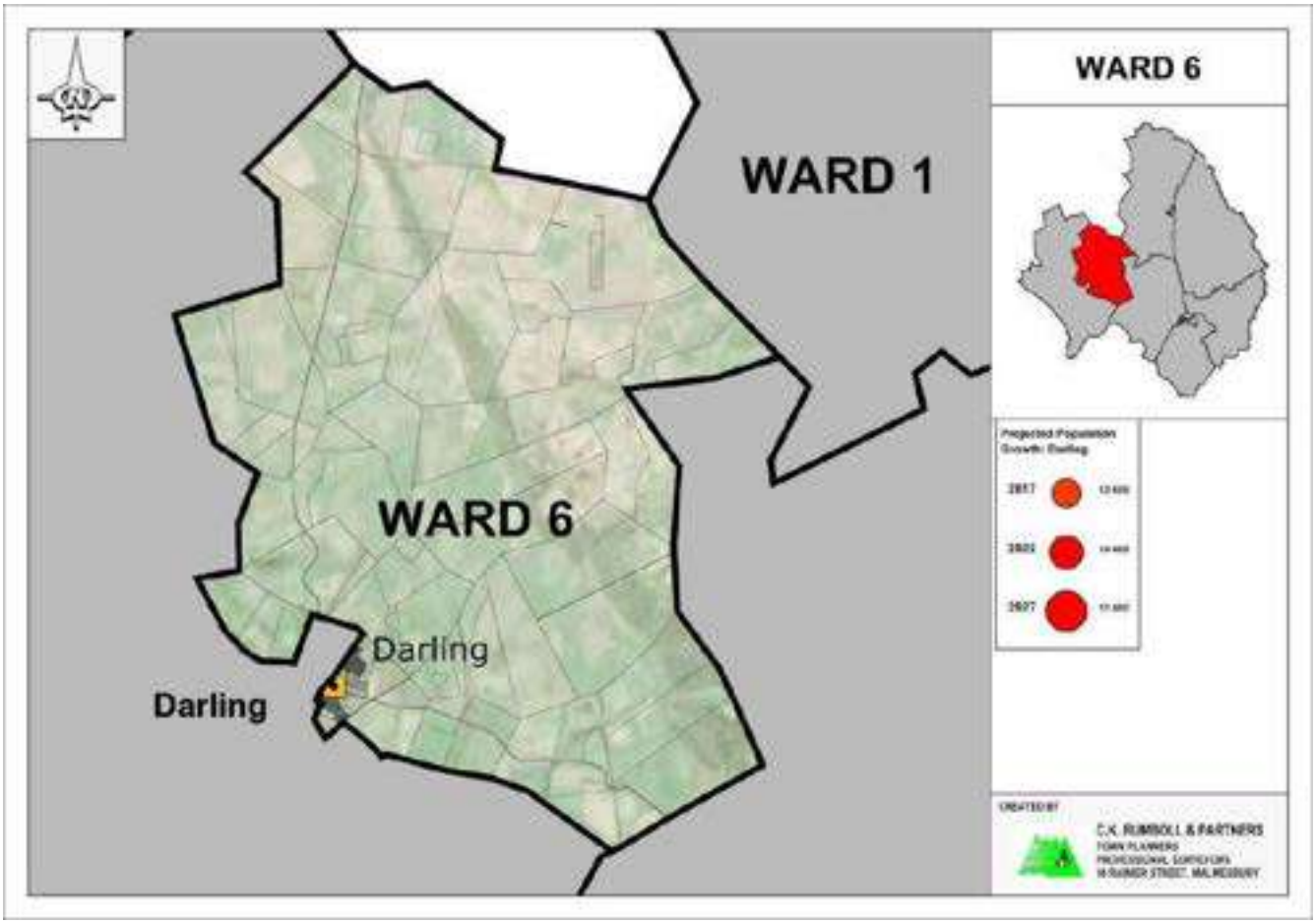
Objective 5: Protect ecological and agricultural integrity [Biophysical or Natural Environment]

West Coast Conservation Corridor and Film Zone	Promote and strengthen West Coast Conservation Corridor to ensure that fauna, flora and marine life will be preserved in an uninterrupted conservation area along the coast line between the West Coast Nature Reserve and the Blaauwberg Nature Reserve in the south. Develop a tourism node and allow for more tourism related facilities to develop in the conservation corridor. Promote coastal/nature/wildlife attractions including beach, recreational and commercial fishing, water sports, !Khwa ttu San Cultural and Education Centre, various private nature reserves including Buffelsfontein and Rondeberg and historical farms such as Groote Post and the lime kilns, etc. Promote farm stalls and farmers markets on farms within the Conservation Corridor. Develop additional tourism nodes, subject to environmental authorization and management, within the proposed West Coast Conservation Corridor. Support and encourage Cape Nature's contribution to the Tourism Feasibility Study for Dassen Island including access from Yzerfontein Harbour. Encourage the use of beach front homes in Yzerfontein as photo & film shoot studios and small function venues. Support limited development of Dassen Island, a Provincial Nature Reserve, as a tourist destination accessed by sea. Recreational fishing happens around the island. The Dassen Island Nature Reserve Management Plan supports the development of a Tourism Feasibility Study to determine its feasibility. Promote access to sea. Launching at Yzerfontein harbour should benefit Swartland. Support and promote Darling Hills and flat coastal plains as part of the conservation corridor of the hill landscape in the Swartland. Support limited extensive agricultural production in the south of Ward 6 (along Darling Hills) and join the conservation initiative of marginal areas along the coastline in Ward 5.
	Support the development of an Overlay Zone for Conservation purposes on private land that is proposed to be included in the Greater West Coast Conservation Corridor, to the south of Yzerfontein, to provide for development criteria for these conservation areas outside of the urban

	edge. Identify development nodes within the conservation areas that will allow for tourism related uses such as resort development. Allow for a corridor link to the west of the proposed Yzerfontein Rural Corridor to maintain a north south conservation link.	
Natural	Promote marine and aqua culture production along the coast and at Yzerfontein.	Promote a Swartland mountain bike race around public and private Nature Reserves and areas surrounding Darling in Ward 6.
Biodiversity	Identify Core and Buffer zones in West Coast Conservation Corridor.	Effectively manage wind erosion in coastal areas and in Yzerfontein along the dune system: Promote limited access to the beach via formal boardwalks (South easterly prevailing winds in summer and the north-westerly winds in winter).
	Strengthen Groen River catchment area (and buffer areas). Expand Nature Reserves (public – West Coast National Park and private) to allow for a link between natural areas and the reserves. Promote Darling wine district as a biodiversity and wine initiative production area e.g. cellars such as Grootte Post, Cloof Wine Estate, Darling Cellars and Alexanderfontein.	Protect mountain (backdrop of Darling Hills including Katkop and Klipberg in North West), rolling grain, canola fields and Groen River corridor landscape.
	Adhere and maintain Coastal Management Setback Lines.	Manage development along the coastal area in line with the identified Coastal Management Lines to prevent disasters that might result from increased sea levels and storm activity due to climate change.
Waterways	Create open space network along the Dwars and Modder Rivers and streams in Darling. Protect the Dwars and Modder River system as an important ecological corridor – specifically the eastern bank (Ward 6). Protection of Grootwater Aquifer (south east of Yzerfontein).	Preserve the Grootwater Aquifer as an important underground water resource in the West Coast region that provides water to Tygerfontein, Jakkalsfontein, Grotto Bay and various surrounding farms. Investigate as a possible alternative water source for provision of water to Yzerfontein. Consider the sensitivity of the aquifer as outlined by the Hydrological Survey of the Swartland when contemplating development in and around this area.
	Capitalise on the rainfall of 400mm per annum: Monitor irrigation along the Dwars and Modder rivers and from underground sources.	Strengthen Dwars, Modder, Sout rivers as landscape resources.

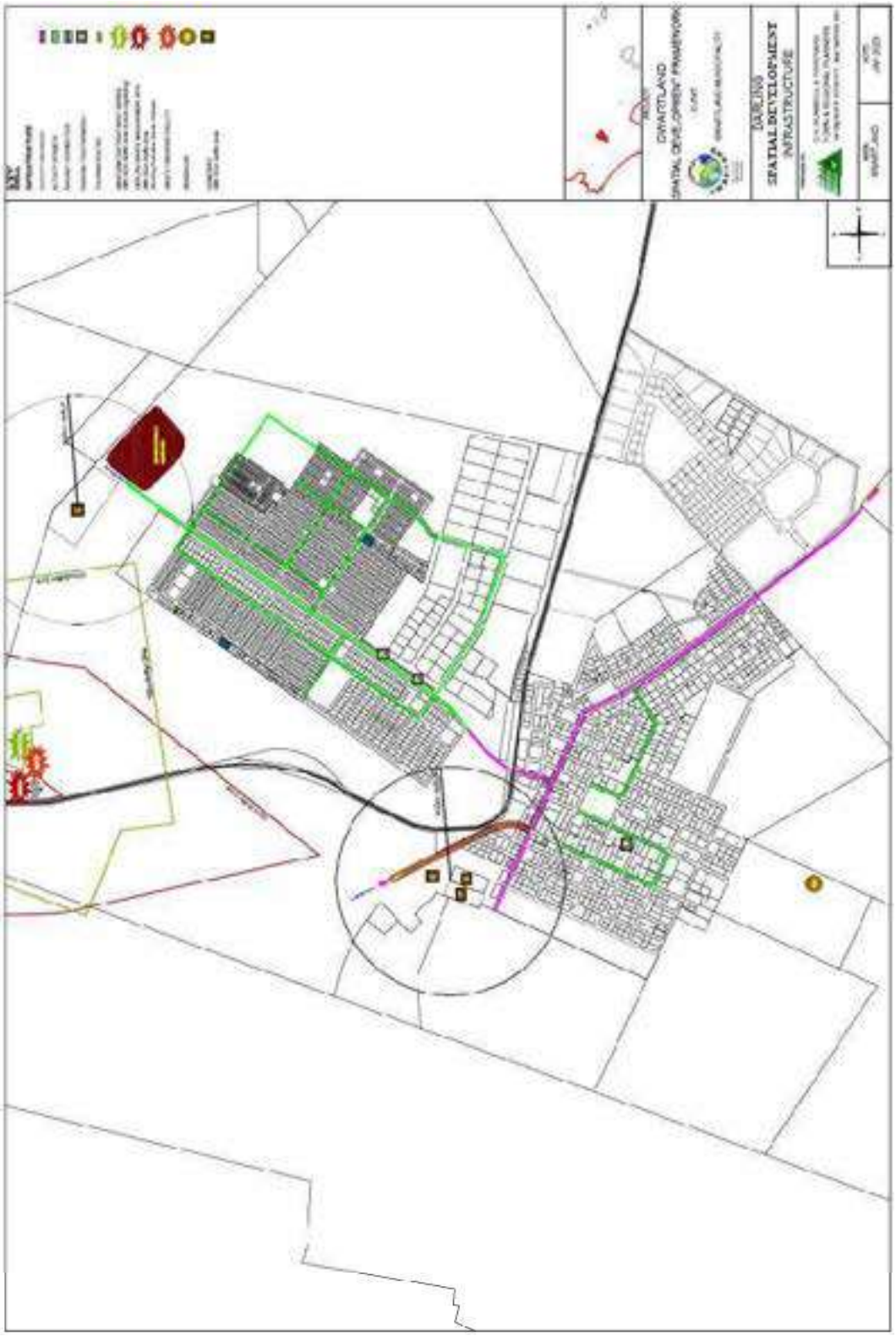
5.5 Ward 6: Darling and Rural Areas

Ward 6 represents the rural area to the north and west of Darling including farms extensively and intensively frame. Also included in Ward 6 is a part of Darling, while the other part is included in Ward 5.



5.5.1 Darling

Darling is situated in the rural area of Ward 6 in the Swartland Municipal area. This town is approximately 80 kilometres from Cape Town and located near the West Coast Industrial Corridor. Access to Darling is from the R315 via Malmesbury (N7) and the West Coast Road (R27).



Objective 2: Proximate convenient and equal access

CONNECTIVITY			
	Elements	**No.**	**Proposals**
Protect	Roads:	1	R315 is the main traffic route between Malmesbury (N7) and the R27. It is also the old route that connects the Cape with the West Coast, via Mamre.
		2	Main Road 26 is the main connection route which connects Darling with the Hopefield road which joins with Moorreesburg. It provides access to several farms north of Darling. The Darling-Mamre Road also provides an alternative route to Cape Town.
	Activity Streets and corridors:	3	R315 becomes Main Street or Main Road 26 and forms the main activity axis of Darling which provides access to Darling's industrial precinct, located north of the railroad.
		4	Other activity streets within Darling which are part of the Central Business District are: Lang, Pastorie, Kerk, Stasie, and Voortrekker Streets.
Change	Roads:	5	Maintain and support the upgrade of the local movement network including the R315 and R307 as the main route through Darling.
	Activity Streets and corridors:	6	Support the development of mixed uses along identified main activity corridors and streets.
		7	Beautification of main activity corridor and entry through Darling.
		8	Concentrate and support mixed use development along identified activity corridor and streets to support integration.
		9	Lack of public and disabled parking.
	Pedestrian and cycle routes:	10	Develop multi-use track (cycling and walking) to improve pedestrian mobility.
		11	Make sidewalks, road crossings and pedestrian walkways accessible for disabled people in accordance with national standards.
Develop	Roads:	12	Municipality to take pro-active role in liaising with Provincial roads department to give input into the upgrading of surrounding road networks including the R315 and R307 (Mamre to Darling).
	Activity Streets and corridors:	13	Upgrade and increase the visual quality of the town through tree planting, street furniture and pedestrian walkways along the Main Road.
		14	Provide adequate public parking, to include parking for the disabled, at identified public and business nodes within the town.
		15	Develop a centralised taxi/bus stop with an all-weather shelter and relevant infrastructure in central business node.
	Pedestrian and cycle routes:	16	Develop safe pedestrian walkways in town along internal road network.
		17	Develop safe and adequately lit multi-use pedestrian/cycle routes from Darling north of Darling along Evita Bezuidenhout Boulevard (R307) to the CBD.
		18	Formalise multi-use routes and tracks in conservation and natural veld areas and public open spaces (including reserves around town).

Objective 2: Proximate convenient and equal access

PUBLIC UTILITIES			
	Elements	**No.**	**Proposals**
Protect	Water:	19	Voëlvlei Scheme supplies Darling with water distributed to two (2) reservoirs holding 2 500 kl in total.
	Waste Water:	20	Darling's sewerage has a flush sewerage system and some on-site septic tanks.
	Electricity:	21	A 66/11Kv 10MVA Eskom substation provides sufficient capacity and two 11kV supply lines supplies Darling.
		22	Swartland Municipality is the supply authority.
	Waste:	23	The Swartland Municipality weekly collects waste door to door and delivers itto the Highland landfill. The licensed landfill site in Darling, located west of Darling WWTP, north west of Darling, serves as a transfer station and facility for building rubble and garden waste. A total of 7 skips are provided.
	Safety:	24	Darling has a police and fire station also serving the surrounding rural areas.
Change	Water:	25	Provide land for bulk infrastructure: reservoirs, overhead power lines, roads and water pipeline.
		26	Extend Water provision to all properties.
		27	Upgrade water pipeline between pump station and reservoirs.
		28	Use alternative services i.e. harvesting rainwater, solar & wind energy.
		29	Manage adequate capacity for future demand (Ml/annum) as per "*Water Services Development Plan*":
		30	Improve distribution pipe network. Address low pressure and weak flow conditions, especially in industrial area.
	Waste Water:	31	Upgrade unknown bulk pipelines capacity and prevent future overloading.

2017	2022	2027	2032
507,451	540,863	576,553	614,685

	Electricity:	32	Maintain adequate bulk capacity.
		33	Upgrade obsolete electrical infrastructure.
		34	Maintain adequate street lighting.
	Storm water:	35	Upgrade 17 km of gravel roads.
		36	Formalise storm water system.
Develop	Water:	37	Align bulk infrastructure planning with SDF growth proposals.
		38	Earmark areas for expansion of bulk infrastructure and align with SDF proposals to minimize impact on landscape.
		39	Careful use of service resources e.g. using alternative energy, water wise developments, water harvesting.
	Waste Water:	40	Build a waste water treatment plant to replace old treatment plants with insufficient capacity (in process).

Objective 1: Grow economic prosperity and facilitate economic sector growth and
Objective 4: Protect and grow place identity and cultural integrity

SPACE, BUILT			
	Elements	**No.**	**Proposals**
Protect	Heritage & Tourism:	41	Darling, established in 1853 on Farm Langfontein, was named after Lieutenant Charles Henry Darling, a Governor of the Cape. The first properties (300 to 400 erven) were sold during a public auction in 1853. The Dutch Reformed church was built in 1857, followed by a school in 1896 and the community hall in 1899. Most historic farms and farm houses date back to this time. The signal cannon, is now in front of the municipal building, and was located on Kliprug to warn residents against potential danger.
	Residential:	42	Darling has a traditional grid pattern with a railway line crossing through the town. Although characterised by historic buildings, several buildings in Main Street have lost their unique character. The CBD area is located around and between Main Street and the railway line, with the industrial node north of the railway line. There are three residential nodes in Darling: 1. Historical commercial core of town with low to medium residential uses. 2. Low and medium density residential precinct (south). 3. Medium and high density residential and subsidized housing area as northern precinct separated from CBD by railway line.
	""""""""	43	The lifestyle character promotes low density residential development with limited medium and high-density opportunities. Integrated development opportunities are limited as the railway line and wetlands separate the town. Land for residential development is available east of golf course and on northern and western periphery.
		44	Darling's annual growth rate is 3%.
		45	Darling is an agricultural service centre as well as a tourism and retirement town The surrounding area has intensive farming of grapes, wheat, dairy, livestock, vegetables and especially flowers.
	Commercial:	46	Darling was and is primarily established as a service centre for the surrounding rural community.
		47	The CBD area is accessible for all residents of Darling, except for those in the north. Hence house shops frequent the northern precinct. Mixed uses, social and industrial, are located in close proximity to northern precinct.
	Industrial:	48	Various industrial uses and agricultural industries provide local community job opportunities.
Change	Heritage & Tourism:	49	Enhance Darling's well-known tourism attractions such as *Evita se Peron*, the wildflower and orchid show and the *Rocking the Daisies* music festival.
	Residential:	50	Enrol farm workers on housing list.
		51	Densify using willingness of owners to subdivide, existing zonings, consider the character of surrounding environments, the unique sense of place and historical context.
		52	Densify the following areas: - Near central business district (CBD); - Along activity corridors; - New extensions; - Suitable location of houses on individual properties.
		53	Facilitate proximate and equal access to social infrastructure.
		54	Upgrade industrial area and support infrastructure.
	""""""""	55	Make provision for adequate land for different residential types (topologies).
		56	Require effective and sustainable utilisation of services.
		57	Spatially integrate new residential developments.
		58	Encourage densification and mixed uses in CBD.

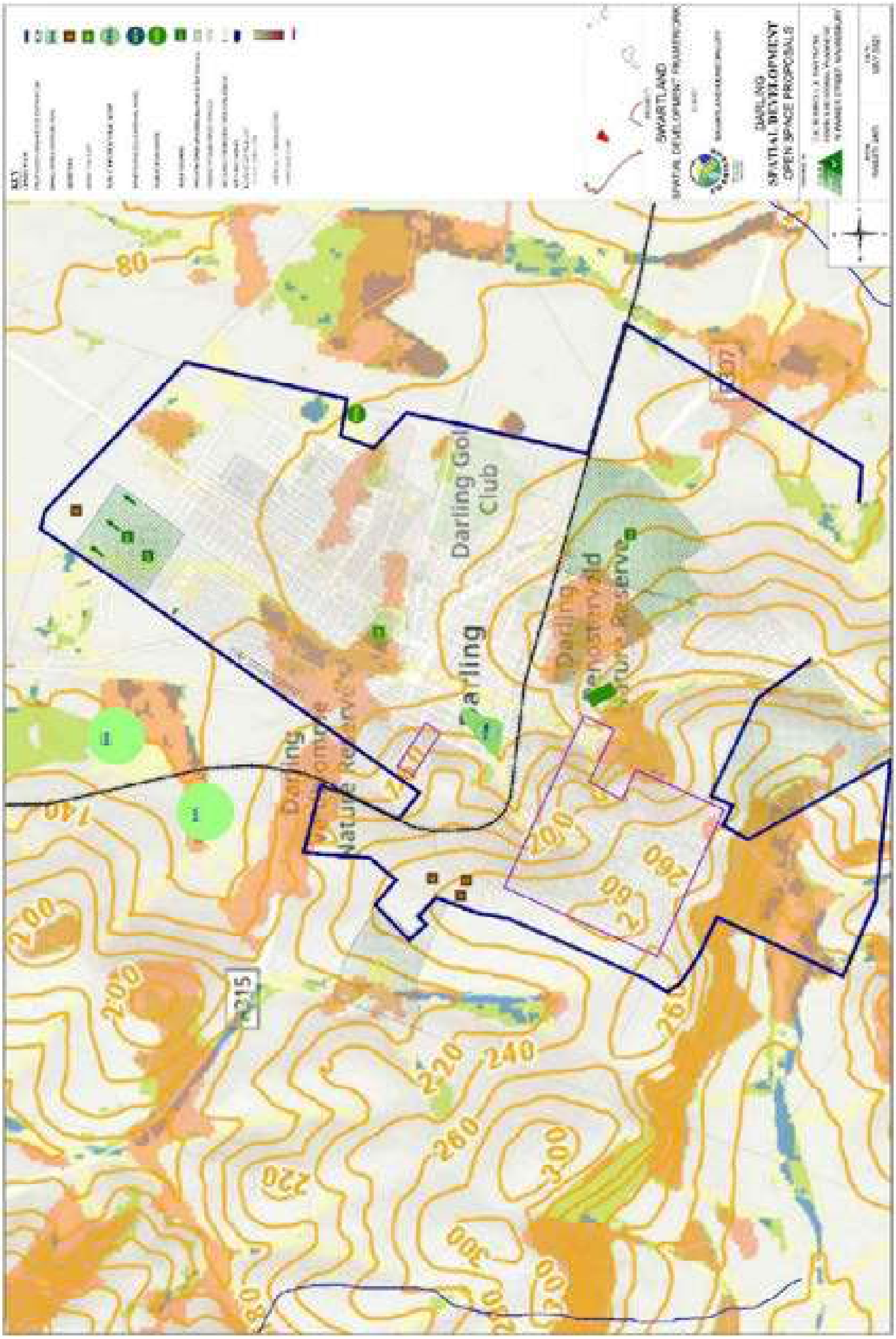
		59	Provide erven for GAP housing.
		60	Align development with availability and capacity of infrastructure and services.
		61	Support the densification in Darling through subdivision (sectional title), infill development, renewal and restructuring and densification in accordance with zone proposals.
	Commercial:	62	Strengthen primary commercial node along Main Street and secondary nodes in neighbourhoods.
		63	Support development of house shops/home occupation/professional services in residential areas.
		64	Support business uses along activity streets.
	Industrial:	65	Support development of industries within existing industrial areas.
		66	Upgrade services.
		67	Support development of agri-industries.
Develop	Residential:	68	Provide future subsidised housing demands in Darling. Government residential developments, supported by Human Settlement programmes, will be supported.
		69	Keep waiting list up to date.
		70	Expand Darling on north-eastern, eastern and western boundaries (Zone E & H).
		71	Provide for more integrated opportunities and alternative housing types in future planned developments.
		72	Promote and expand Tourism development in Darling through marketing and projects.
		73	Increase density by 2027 from the current 8.3 units per hectare to 10 units per hectare in Darling.
		74	Promote long term residential expansion in Zone G (development constraints: environmental and community resistance).
	""""""""""	75	Provide 351.9ha in Darling over the next 20 years of which 144.6ha is vacant and undeveloped areas as per Vacant Land Audit.
		76	Delineate a restructuring zone for social housing in Darling.
		77	Keep minimum single residential erf size of 500m².
		78	Plan for expansion of bulk infrastructure to support future limited residential growth.
	Commercial:	79	Develop integrated and smaller secondary commercial nodes in higher density poorer neighbourhoods. Commercial uses in these secondary nodes can include residential elements.
	Industrial:	80	Provide opportunities for additional light industrial development on north eastern periphery of Darling.
		81	Rehabilitate previous landfill site on northern periphery of town to allow for development of industrial sites on area adjoining the R307 (Main Road 26).

Objective 3: Sustain material, physical and social wellbeing

PUBLIC INSTITUTIONS			
	Elements	**No.**	**Proposals**
Change	Community Facilities:	82	Support the provision of community orientated services (for example crèches, soup kitchens) in the residential areas.
		83	Support the local community initiatives for provision of social services in neighbourhoods to better serve the poorer communities.
		84	Address the lack of adequate: - Primary health facilities; - Educational facilities - with need for crèches and day care facilities in neighbourhoods.
		85	Expand the existing sport facilities on the northern periphery.
		86	Continue maintenance of the sport and show grounds to serve the community of Darling.
Develop	Community Facilities:	87	Support the continued development and maintenance of community facilities in close proximity to the communities.
		88	Develop a Sport and Educational node with picnic area and sport facilities next to the swimming pool.
		89	Establish the Provincial school on Erf 551 between the railway line and residential area to support spatial integration in the town. Include inter cultural/education zone.

Objective 5: Protect ecological and agricultural integrity

SPACE, NATURAL			
	Elements	**No.**	**Proposals**
Protect	Nature and Conservation:	90	Darling, although known for botanical diversity, has only 2% of critically endangered areas officially protected. This region supports many local endemic species as well as listed Red Data species. There are two reserves outside Darling: Renosterveld and Groenekloof.
Change	Nature and Conservation:	91	Link open space areas and mobility routes by planting trees.
		92	Develop shared use trails as open space corridors, natural habitat links and recreational facilities (hiking & mountain bike trails).
		93	Protect natural areas lawfully and determine allowable uses.
		94	Improve appearance of higher density residential developments (subsidised housing) by planting tree lanes.
		95	Design interactive development interfaces along open space network
	Public and Private Open Space:	96	Enhance recreational public nodes: - sport and show grounds, golf course; - sports grounds on northern periphery; - "Evita se Peron" at the station building; - Swimming pool in Darling north.
		97	Develop multi-use open spaces.
Develop	Nature and Conservation:	98	Formalise conservation of conservation worthy natural areas by entering into stewardship programme with Cape Nature.
		99	Develop management plans and determine allowable uses of conservation areas.
		100	Enhance the development of Darling Wildflower Society Centre, Herbarium and education facility in Groenekloof Reserve.
		101	Remove alien vegetation from open space areas.
		102	Require subsidised housing projects to provide functional open spaces.
		103	Formalise and landscape both sides of access road (part of Erf 551) as a shared use community park and provide walking trails and recreational facilities.
	Public and Private Open Space:	104	Develop and formalise the area north of the railway line and station to create an integrated town square.
		105	Formalise a recreational node as part of the open space west of entrance road into Darling north: include recreational facilities (play parks, picnic areas, outdoor gym equipment) and landscape open space.


Darling
Club

LAND USE ZONE PROPOSALS FOR DARLING

Refer to the land use zone map for Darling: The urban area of Darling is divided into eight (8) zones (areas with common features) and the recommended land uses for the different zones are listed in the table below:

DARLING LAND USE ZONES		Low Density Residential Uses	Medium Density Residential	High Density Residential Uses	Secondary Educational Uses	Place of Education	Professional Uses	Business Uses	Secondary Business Uses	Place of Worship	Institution	Guest houses	Authority	Sport/Recreational Facilities	Industries & Service Trade
A	Zone A represents the central business district of the town.	X	X	X	X	X	X	X	X	X	X	X	X	X	X 10
B	Zone B consists mainly of low and medium density residential uses with supportive community and institutional facilities and a tourism node. Limited expansion opportunities. Allow for rural residential development.	X	X	X 3,11	X	X	X	X 1,11	X 1,11	X	X	X	X	X 6	
C	Zone C - expansion area for low and medium density residential development including institutional functions, mixed use development and recreational facilities e.g. a golf course & sport grounds.	X	X	X 9	X	X	X	X 9	X 9	X	X	X	X	X	
D	Zone D - represents industrial area of Darling with supportive social infrastructure. Support development of a public recreational node and limited commercial development.					X	X	X	X	X	X		X	X 4	X
E	Zone E is a high density residential area with supporting social and commercial facilities. Include GAP opportunities along the eastern periphery. Expand the Sport and Recreational node around the swimming pool and include educational component. Create a public recreational node with picnic areas on the eastern periphery around the dam. Allow limited industrial uses on the south eastern periphery of zone.	X	X	X	X	X	X	X 1,2,9 11	X 1,2,9 11	X	X	X	X	X 5	X 10
F	Zone F is a medium to high density residential area with supporting social facilities.	X	X	X 3	X	X	X	X 1,2	X 1,2	X	X	X	X	X	
G	Zone G is an area earmarked for residential infill, restructuring and integration. Allow for potential high school site.	X	X	X	X	X 8	X	X 11	X 11	X	X	X	X	X	
H	Zone H is a recommended area for residential development. Limited industrial uses at identified node.	X	X	X	X	X	X	X 11	X 11		X	X	X	X	X 7

(1) Along activity streets/corridors
(2) At identified business nodes
(3) Flats along activity streets
(4) Public square
(5) Public recreation, sport and educational node
(6) Tourism node
(7) Only service trade and light industries
(8) Provincial high school
(9) At identified mixed use nodes
(10) Only services trades
(11) At proposed future residential development nodes

Business Uses e.g. shop, supermarket, restaurant, offices, service station
Place of Education e.g. Schools, places of instruction
Professional Uses e.g. offices like doctors, dentists, attorneys, architechts, engineers and town planners.
Secondary Business Uses e.g. neigbourhood bussines uses such as house shops, small offices and home occupation. House taverns only to be allowed along activity streets in residential areas on discretion of the Municipality.
Secondary Educational Uses e.g. Crèches/day care

*Find description of proposed land uses for development zones in Annexure 4


SWARTLAND
SPATIAL DEVELOPMENT
LAND USE PROPOSALS
A
B
C
D
E
F
G
H

5.5.2 Rural Areas of Ward 6:

The proposals below are ward specific. Any proposal that extends across ward boundaries was documented as part of the regional proposals.

Proposals are grouped according to the five objectives. Proposals per objective differentiate, where appropriate, between agriculture and tourism:

Regional proposals according to the five objectives follow below:

Objective 1: Grow economic prosperity and facilitate economic sector growth [Economic Environment]

	Agriculture	**Tourism**
Pedestrian and cycle routes	Develop a cycle route from Yzerfontein along the R315 to Darling, with a proposed bridge or underpass crossing of the R27. This will reinforce the tourism route of the R315 and act as a spatial gateway to the R315 route. Promote a Swartland mountain bike race around Public and Private Nature Reserve in and around Darling.	
Commercial	The eastern part of Ward 6 is a limited intensive agricultural production area. It includes vineyards, dairies, poultry rearing and piggeries. Support and allow for intensive agriculture, agricultural related industries, agriculturally related commercial opportunities, exhibition centres and internal densification of agricultural units to support growth and economic development along this corridor.	Promote festivals building agricultural brand e.g. Music Festival Rocking the Daisies and the "Voorkamer" Music Festival in Darling.
	Support both extensive farms (500ha+) with high potential dry land cultivation in north of Ward 6 & smaller agriculture units south of Darling Hills (Dassenberg smallholdings).	
Industrial:	Develop agricultural and related industries and services supporting agriculture: composting, alternative energy generation, communication network facilities, etc.	Capitalize on the link to the Saldanha Industrial Development Zone (IDZ), accessing the largest natural harbours in the world.
	Develop smaller & service industries in Darling. Support packaging and processing on intensive production farms (vineyards, stone fruits, olives and vegetables).	Enhance Malmesbury as industrial town.
	Limit Laterite mining, a soft iron oxide for road bases, found in high potential agricultural soils around Malmesbury and Mamre Way, Darling area.	
Residential	Develop subsidized housing, in future, in Darling.	Develop resorts (along coast to support West Coast Conservation Corridor).

Objective 2: Proximate convenient and equal access [Economic Environment]

R315 & R307	Support link between West Coast (R27) and Malmesbury via Darling is also part of the main tourism route in the Swartland between the Riebeek Valley and the West Coast (Yzerfontein). Strengthen R307 link from Darling to Mamre and gravel road to Moorreesburg. Strengthen link to Drakenstein (R45). Support link to Malmesbury and Vredenburg/Saldanha via Hopefield (R45). Continue maintenance of road network.
Railway	Strengthen the rail operation (and train trips) from Cape Town during the flower season.
Utilities	Built water storage facilities/ reservoirs. Strengthen Darling Wind Farm with four wind turbines (north east of R27 and R315). Strengthen Photovoltaic development on Eenboom.

Objective 3: Sustain material, physical and social wellbeing [Social Environment]

There are no specific proposals for ward 6 to support this objective.

Objective 4: Protect and grow place identity and cultural integrity. [Built Environment]

Administrative	Promote Malmesbury as regional service centre and industrial town Enhance Yzerfontein as coastal recreation and leisure town. Enhance Darling as local agricultural service centre for Ward 5 and 6. Support Tygerfontein, Jakkalsfontein and Grotto Bay as resort settlements under private Home Owners Association management.
Heritage Tourism Route	Include significant heritage farms and properties into potential heritage tourism route: a Cape outpost producing fresh food for the ships that sailed around the Cape. Develop the slave liberation and mission station route that includes: Vogelgezang (freedom to slaves of 1808 and the Khoi rebellion), Abbotsdale (Anglican mission), Mamre (Moravian mission) in Cape Town and Wittewater and Goedverwacht missions in Bergrivier municipal area. Develop a battlefield route that includes the outpost of the Dutch East Indian Company at Grootte Post and Groene Kloof (near Mamre) and the farm Kraalbosdam (north of Darling) where one of the most fatal battles of the Anglo Boer War took place. Protect all and promote some of the 79 rural sites surveyed in Swartland Rural Heritage Survey 2014 in Ward 6: 2 Grade 3 A (high local significance), 38 Grade 3 B (some local significance), 37 Grade 3C (limited local significance) and 2 no grading (no heritage resource). Promote Darling as tourism node including Victorian Museum and Hildebrand Anglo Boer War Monument. Promote "*Evita se Peron*" as facility that supports local talent social development.

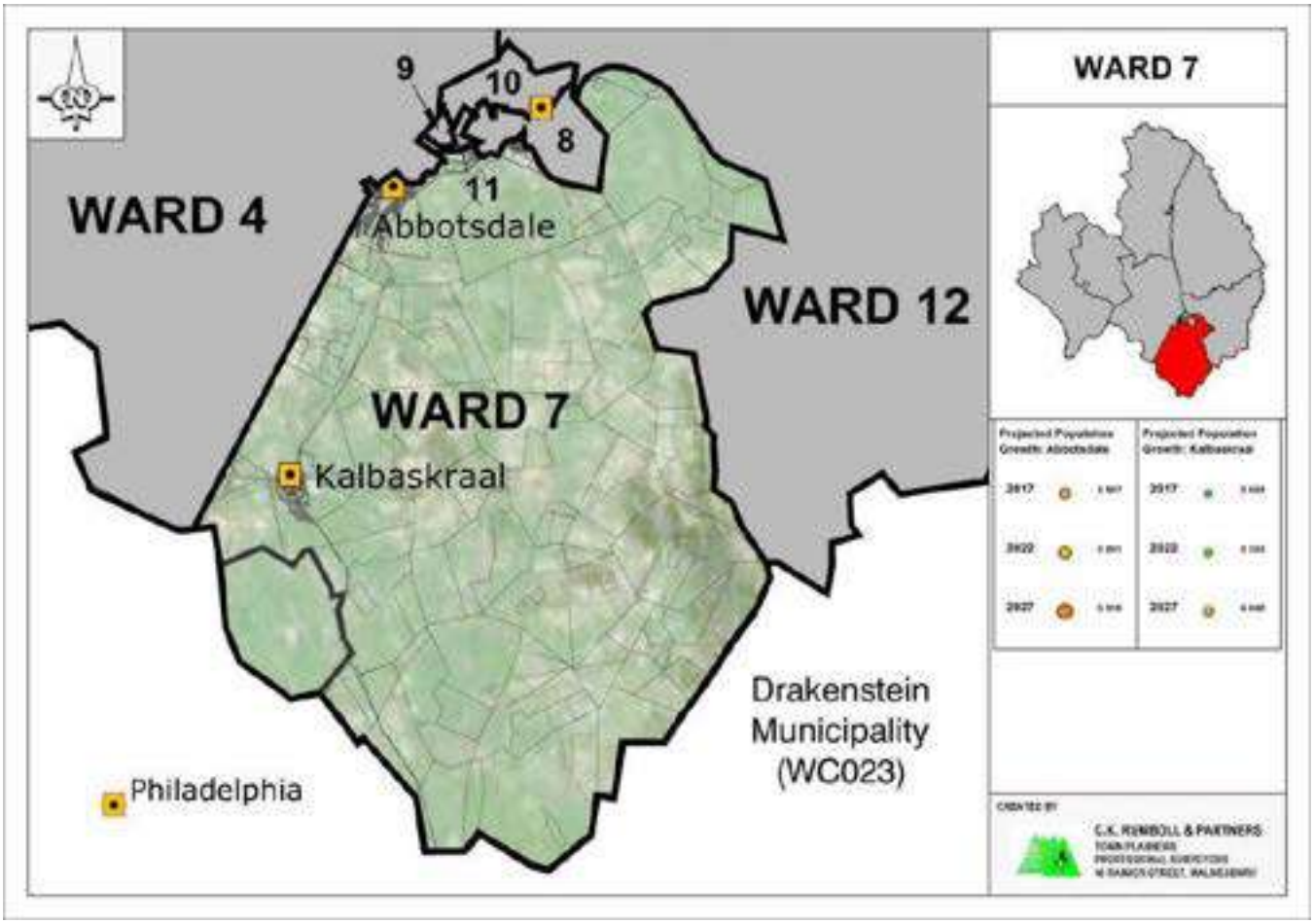
Objective 5: Protect ecological and agricultural integrity [Biophysical or Natural Environment]

There are no specific proposals for ward 6 to support this objective.

	Agriculture	Tourism
Natural	Support both extensive farms (500ha+) with high potential dry land cultivation in north of Ward 6 & smaller agriculture units south of Darling Hills (Dassenberg smallholdings).	Support limited extensive agricultural production in the south of Ward 6 and join the conservation initiative of marginal areas along the coastline in Ward 5.
Biodiversity	Promote Darling wine district as Biodiversity and Wine Initiative production area e.g. cellars such as Grootte Post, Cloof Wine Estate, Darling Cellars and Alexanderfontein.	Protect Darling Hills, including Klipberg, Katkop and Contreberg. All Public and Private Nature Reserve are Core 1 and 2 areas.
	Strengthen Groenrivier catchment area. Expand Nature Reserves (public and private) to allow for a link between natural areas and the reserves.	Protect mountains (backdrop of Darling Hills including Katkop and Klipberg in North West), rolling grain and canola fields and the Groenrivier corridor.
Waterways	Create open space network along the Groenrivier and Soutrivier. Protect Groenrivier system as important ecological corridor – specifically the eastern bank (Ward 6).	Support Groenrivier and Soutrivier as landscape resource.
	Monitor irrigation along the Groenrivier and from underground sources.	

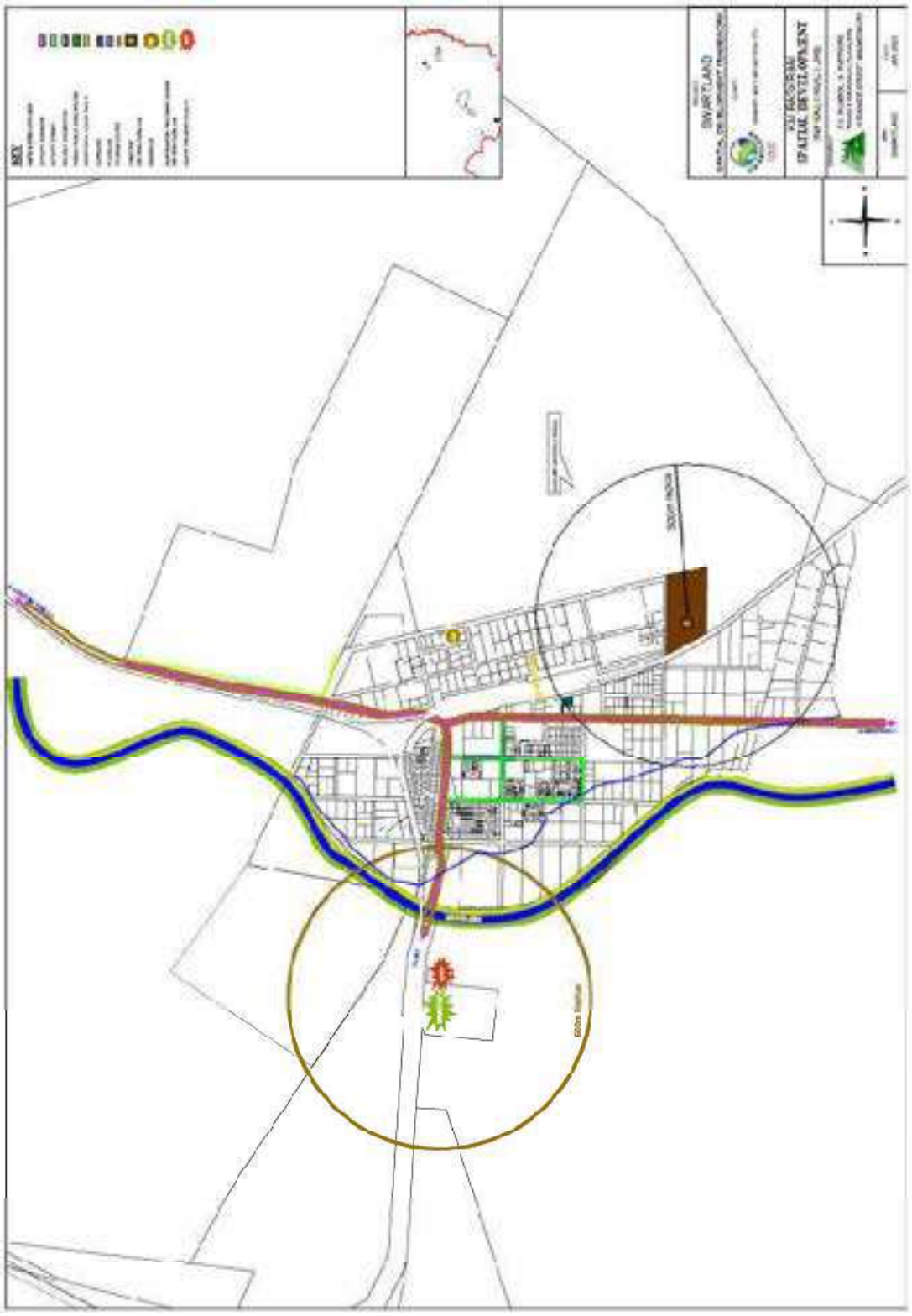
5.6 Ward 7: Kalbaskraal and Rural Areas

Ward 7 represents the most southern part of the Swartland municipal area and includes the urban areas of Kalbaskraal and Abbotsdale as well as rural areas. Although located in Ward 7, Abbotsdale is linked with Malmesbury and therefore spatial proposal will be included under proposals for Wards 8, 9, 0 and 11. The southern part of the Swartland, including wards 4 and 7, is historically neglected and has poor provision of services and a weak economy. Hence the Intensive Rural Development Corridor stretching along the N7 south of Malmesbury serves as an economic stimulus. To enhance the economy mixed uses, intensive agriculture and agriculturally related produce, rural living opportunities on smaller agricultural units and small scale agri processing on farms are all encouraged.



5.6.1 Kalbaskraal

Kalbaskraal is the southernmost settlement within the Swartland Municipal jurisdiction area. Although this town is isolated from Malmesbury (main town of the Swartland) access is obtained directly from the N7 that connects Malmesbury with the Cape Town Metropolitan area.



Objective 2: Proximate convenient and equal access

CONNECTIVITY			
	Elements	**No.**	**Proposals**
Protect	Roads:	1	Road 1138 (east-west direction), providing access to N7.
		2	Section road 1111 (north-south direction) connecting Kalbaskraal with Malmesbury (north) and Philadelphia (south).
Change	Roads:	3	Upgrade access (in process) to Kalbaskraal off N7 (1138) and DR 1111 (the Old Cape Road).
	Activity Streets:	4	Develop mixed uses along activity corridor and - streets to enhance social and economic integration.
		5	Concentrate higher order development and mixed uses along activity streets.
		6	Provide adequate public transport to increase mobility of residence.
	Rail:	7	Use railway transport as alternative public transport.
	Pedestrian and Cycle Routes:	8	Develop accessible, safe and adequately lit, surfaced and shaded pedestrian walkways and cycle paths.
Develop	Roads:	9	Interact with Provincial and National Roads departments regarding upgrading of road networks.
		10	Beautify main entrance and activity streets in CBD.
	Activity Streets:	11	Upgrade and beautify entry and main activity corridors in Kalbaskraal.
		12	Plant trees at town entrances, provide street furniture and develop pedestrian walkways.
		13	Develop a taxi rank/bus stop next to CBD (increased mobility).
		14	Introduce speed calming.

Objective 2: Proximate convenient and equal access

PUBLIC UTILITIES			
	Elements	**No.**	**Proposals**
Protect	Future Demand:	15	Kalbaskraal has one of the largest backlogs of basic services.
	Water:	16	Voëlvlei Scheme pumped via Malmesbury provides water. There is one borehole and a local reservoir which serves Kalbaskraal with a capacity of 250kl.
	Waste Water:	17	Upgrade sewerage management; Link parts of Kalbaskraal using septic tanks & buckets to flush sewer system.
	Electricity:	18	Eskom supplies electricity.
	Waste:	19	Weekly Swartland Municipality collects waste from door to door and deliver it at Highland landfill. The licensed landfill site in Kalbaskraal, located on Portion 3 of Farm 1103, west of Kalbaskraal at the WWTP, serves as a transfer station and facility for building rubble and garden waste. A total of 8x 6m³ skips are provided.
	Safety:	20	There is no fire- or police stations that serve Kalbaskraal and the greater Chatsworth area.
Change	Future Demand:	21	Prioritise provision of services to address the backlog.
		22	Ensure bulk infrastructure planning is in line with SDF growth proposals minimising impact on the landscape.
		23	Identify areas earmarked for expansion of bulk infrastructure.
	Water:	24	Upgrade the existing capacity to accommodate growth and demand.
		25	Extend water provision to all properties.
	Waste Water:	26	Expand flush sewer system to all properties.
		27	Establish oxidation dams' capacity.
	Electricity:	28	Provide adequate street lightning.
	Waste:	29	Maintain waste collection points (garden waste).
	Storm Water:	30	Institute a formal storm water system.
		31	Upgrade 8 km of streets and storm water infrastructure.
	Safety:	32	Establish a satellite fire- and police station.
Develop	Future Demand:	33	Allow adequate area for provision of bulk infrastructure that includes reservoirs, overhead power lines, future roads and a water pipeline.
	Water:	34	Replace sections of distribution network consisting of galvanised pipes. Replace distribution network (galvanised pipes).
	Storm Water:	35	Upgrade internal roads and storm water systems.
	Safety:	36	Support the sustainable use of natural resources through alternative methods – i.e. harvesting of rainwater in tanks on residential erven, use of alternative energy sources and water wise developments.

Objective 1: Grow economic prosperity and facilitate economic sector growth and
Objective 4: Protect and grow place identity and cultural integrity

SPACE, BUILT			
	Elements	**No.**	**Proposals**
Protect	Heritage and Tourism:	37	Kalbaskraal originated as a railway crossing between Cape Town, Darling and Malmesbury in 1898 on the farm, Spes Bona, hence its location between the railway line and Diep River. Kalbaskraal has a rural character. Although the railway crossing offers good connection with Cape Town and the northern part of the country, Kalbaskraal is experiencing economic decline and increased unemployment.
		38	Kalbaskraal's geometric town design disintegrates at the station into larger erven especially along the Diep River. Kalbaskraal is spatially divided by railway lines in a north to south and east to west direction.
	Residential:	39	Kalbaskraal originated around the historic station building in the CBD. The Diep River flood line limits further development.
		40	Kalbaskraal provides a Residential function since residents prefer to work in Cape Town or Atlantis rather than Malmesbury.
		41	Minimum erf sizes of 1000m² will maintain the rural character of Kalbaskraal whilst densification will be promoted at the same time.
		42	There are three areas in Kalbaskraal providing low density residential plots: adjacent to Diep River, the southern precinct of Kalbaskraal.
	Commercial:	43	Kalbaskraal is a rural town having a low growth potential, limited economic opportunities, and low incomes.
		44	The CBD area offers limited economic services.
Change	Heritage and Tourism:	45	Improve tourism infrastructure including recreational facilities along the Diep River, accommodation and information signs.
		46	Control extension or demolition of heritage buildings.
	Residential:	47	Increase density by 2027 from the current 2.9 units per hectare to 4.5 units per hectare in Kalbaskraal.
		48	Enrol farm workers on housing waiting list.
		49	Require different housing options/ topologies to proposed developments are sustainable, integrated and utilise services effectively.
		50	Allow medium density infill development around the CBD in Zones B and C.
		51	Support densification through subdivision; infill development; renewal and restructuring in accordance with zone proposals.
		52	Align subdivisions and CBD renewals with surrounding densities and character of the built environment.
		53	Implementation of minimum erf sizes of 1000m² to promote densification.
		54	Infill opportunities exist on residential properties in the southern precinct and on underutilised erven in the eastern precinct.
	Commercial:	55	Enhance Kalbaskraal's CBD.
		56	Allow house shops/home occupation in residential areas.
	Industrial:	57	Provide adequate bulk infrastructure capacity to support industrial expansion.
		58	Provide land for expansion of and future bulk infrastructure.
	Agri-Industry:	59	Capitalise the locational advantage of Kalbaskraal adjacent to the N7, in close proximity to both Malmesbury and Cape Town, and as part of the Intensive Rural Development Corridor
		60	Develop agricultural and agri-tourism.
		61	Invest in social capital to alleviate poverty.
Develop	Heritage and Tourism:	62	Focus tourism development on the natural environment with development of hiking routes along the Diep River and development of recreational node for motorbikes and mountain bikes within the old quarry in Zone A.
		63	Develop Station building as possible tourism hub.
		64	Improve esthetical quality of the town with the street lighting, street furniture and tree planting.
	Residential:	65	Keep waiting list up to date.
		66	Provide 115.1ha in Kalbaskraal over the next 20 years of which 27.1ha is vacant and undeveloped areas as per Vacant Land Audit.
		67	Provide for future subsidised housing demands in Kalbaskraal. Government residential developments, supported by Human Settlement programmes, will be supported.
		68	Utilise developable vacant areas as identified in Vacant Land Audit for development and infill development.
		69	Subdivide lower density single residential erven in Zones B and C to a minimum size of 1000m² with the remainder of the single residential erven to be a minimum of 400m².
		70	Develop areas in accordance with availability and capacity of infrastructure and services.
		71	Plan for expansion of bulk infrastructure.
		72	Provide GAP housing in Kalbaskraal.

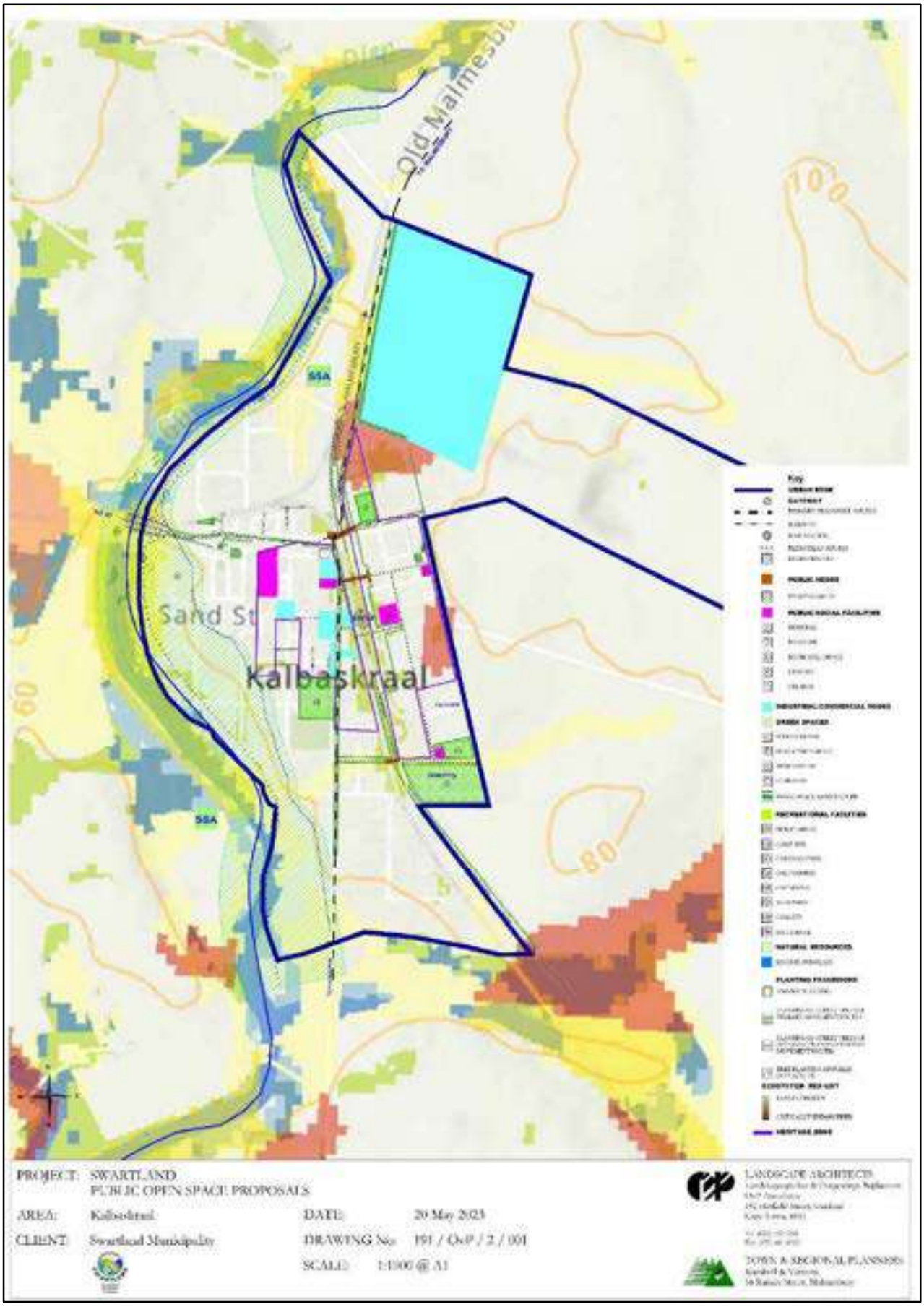
		73	Allow limited densification (subdivisions) in Zones C and D to have minimum erf sizes of 1000m².
		74	Allow for service industries within Zones C, D and E.
		75	Allow remainder of Kalbaskraal to densify with single residential erven having minimum sizes of 400m².
		76	Encourage expansion of residential market especially larger properties along the Diep River (higher income residents).
		77	Provide within the urban edge for industrial uses, limited residential development (on northern boundary adjacent to Diep River) and for larger low density residential plots.
		78	Develop residential opportunities (UISP, GAP and RDP) on Erven 7 & 8 (Lynkamp).
		79	Consider the development of possible residential opportunities on Erven 35 & 38 in the CBD of Kalbaskraal (also possible school site).
	Commercial:	80	Allow for mixed uses along activity corridors and activity streets.
		81	Support integrated development and mixed uses in neighbourhoods.
		82	Create affordable and integrated commercial properties in previously disadvantaged neighbourhoods to allow access to opportunities.
	Industrial:	83	Support industrial development within Zone A.

Objective 3: Sustain material, physical and social wellbeing

PUBLIC INSTITUTIONS			
	Elements	**No.**	**Proposals**
Protect	Community Facilities:	84	Service delivery in Kalbaskraal is limited to the CBD area. A primary school is located in the south-eastern precinct and can expand northwards.
		85	A new cemetery has been developed on the south-eastern boundary of Kalbaskraal. The cemetery has sufficient capacity with no need for expansion.
		86	The need for social infrastructure facilities specifically early childhood development and a multi-purpose community centre exists.
		87	Social services are relatively evenly distributed in Kalbaskraal with the sports field situated south of the CBD area and the school east of the rail way line.
Change	Community Facilities:	88	Provide community facilities in neighbourhoods to improve accessibility.
		89	Support the expansion and upgrade of the sports grounds, south of the CBD.
		90	Provide adequate primary health facilities.
		91	Provide for and expand education facilities and particularly crèches and adult education/skills development.
		92	Support the provision of community orientated services (crèches) in residential areas.
		93	Consider the need for a school site.
Develop	Community Facilities:	94	Formalise public area in CBD as local market square, formal trading space and a bus and taxi stop.
		95	Formalise the open space system.
		96	Upgrade existing sport facilities.
		97	Develop/expand the school site at the roads camp in south-eastern precinct.
		98	Upgrade the existing structure on erven 622 for community services.

Objective 5: Protect ecological and agricultural integrity

SPACE, NATURAL			
	Elements	**No.**	**Proposals**
Protect	Waterways:	99	The Diep River forms the western boundary of Kalbaskraal: Location of proposed developments has to be outside the flood line of the Diep River. A buffer of 32 meter no development buffer, measured form the bank of the river, should be adhere to and riverbank vegetation should be controlled.
Change	Public and Private Open Space:	100	Develop a centralised community node in the CBD.
		101	Create an active and functional open space network.
		102	Formalise the natural corridors along the Diep River and include hiking and mountain bike, multi-use trails between Kalbaskraal and Abbotsdale/Malmesbury: Get buy in from property owners.
		103	Link open space networks with pedestrian routes.
		104	Plant trees along activity streets, pedestrian routes and amongst subsidized higher density housing projects.
Develop	Public and Private Open Space:	105	Develop the CBD as public node and central meeting and market place.
		106	Develop public recreational facilities along the Diep River.
		107	Create a recreational node for mountain and motorbikes in the old quarry in Zone A.


Old Malmesbury
Sand St
Kalbaskraal
SSA
SSA
Key
PROJECT: SWARTLAND
PUBLIC OPEN SPACE PROPOSALS
AREA: Kalbaskraal
CLIENT: Swartland Municipality
DATE: 29 May 2023
DRAWING No: 191 / OoP / 2 / 001
SCALE: 1:1000 @ A1
LANDSCAPE ARCHITECTS
TOWN & REGIONAL PLANNERS

LAND USE ZONE PROPOSALS FOR KALBASKRAAL

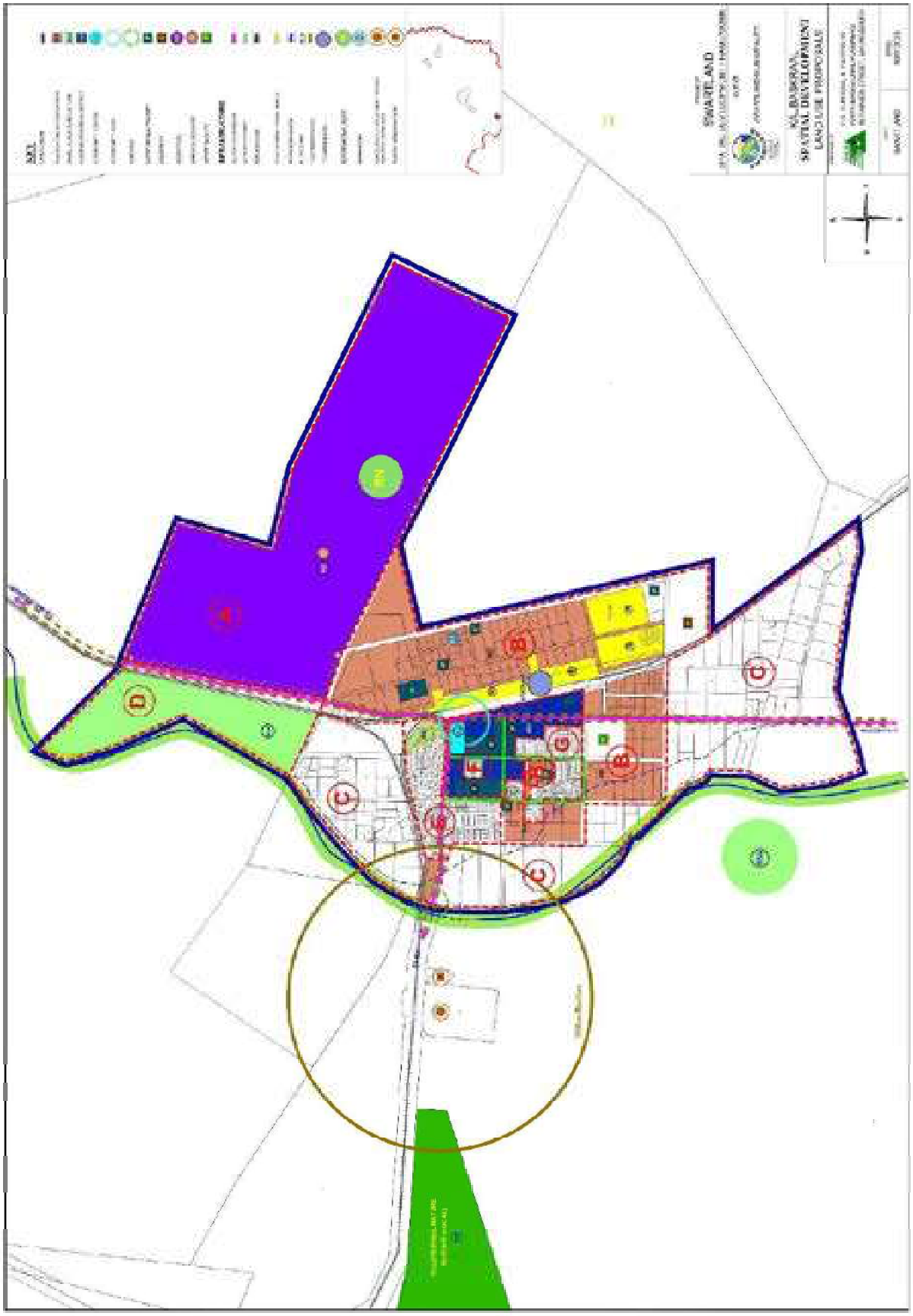
Refer to the land use zone map for Kalbaskraal: The urban area of Kalbaskraal is divided into seven (7) zones (areas with common features) and the recommended land uses for the different zones are listed in the table below:

KALBASKRAAL LAND USE ZONES		Low Density Residential Uses	Medium Density Residential Uses	High Density Residential Uses	Secondary Educational Uses	Place of Education	Professional Uses	Business Uses	Secondary Business Uses	Place of Worship	Institution	Guest houses	Authority	Sport/Recreational Facilities	Industries & Service Trade
A	Zone A is identified as the industrial node of Kalbaskraal with potential for recreational node. Allow for limited commercial development.					X	X	X	X	X	X		X	X	X
B	Zone B is a low and medium density residential area with supportive community services. Allow for subsidised / incremental housing opportunities and densification.	X	X	X	X	X	X	X 1,5	X 1,5	X	X	X	X	X 3	
C	Zone C mainly has a low density residential character along Diep River. The prescribed minimum erf sizes are 1000m².	X			X		X	X 1	X 1	X	X	X	X	X	X 2
D	Zone D is a proposed Urban Agriculture expansion to include possible low density residential development.	X			X				X	X		X	X	X 4	X 2
E	Zone E is a high density residential area.		X	X	X		X	X 1	X 1	X	X	X	X	X	
F	Zone F is the Central Business District which include mixed uses and various residential opportunities. Allow for a potential school site and community centre.	X	X	X	X	X	X	X	X	X	X	X	X	X	
G	Zone G is a high density residential area (subsidized housing).		X	X	X		X	X 1	X 1	X					

(1) Along activity streets/corridors
(2) Nurseries and service trades
(3) Tourism node
(4) Sport facilities
(5) At proposed future residential development nodes

Business Uses e.g. shop, supermarket, restaurant, offices, service station
Place of Education e.g. Schools, places of instruction
Professional Uses e.g. offices like doctors, dentists, attorneys, architechts, engineers and town planners.
Secondary Business Uses e.g. neigbourhood bussines uses such as house shops, small offices and home occupation. House taverns only to be allowed along activity streets in residential areas on discretion of the Municipality.
Secondary Educational Uses e.g. Crèches/day care

*Find description of proposed land uses for development zones in Annexure 4



5.6.2 Rural Areas of Ward 7

Intensive Rural Development Corridor

This corridor falls within Ward 4 and 7 and proposals for the intensive rural corridor were outlined in the section on Ward 4.

The West Coast District Rural Development Plan, 2017 (WC DRDP) supports the development of the Intensive Rural Corridor. The WCDRDP aims to establish Agri-Parks. The objectives of the Agri-Park initiative are to:

- Establish Agri-Parks in all South Africa's District Municipalities to promote the Rural Economic Transformation of these rural regions;
- Promote the skills of and support to farmers in small-holdings through the provision of capacity building, mentorship, farm infrastructure, extension services, production inputs and mechanization inputs;
- Enable producer ownership of most Agri-Parks equity (70%), with the state and commercial interests holding minority shares (30%);
- Bring under-utilized land (especially in Communal Land Areas and land reform farms) into full production over the next three years, and expand irrigated agriculture.

The Agri-Park is defined as a networked innovation system (not only physical buildings located in single locations) of agri-production, processing, logistics, marketing, training and extension services, located in District Municipalities. As a network, it enables the growth of market-driven commodity value chains and contributes to the achievement of the rural economic transformation model (RETM).

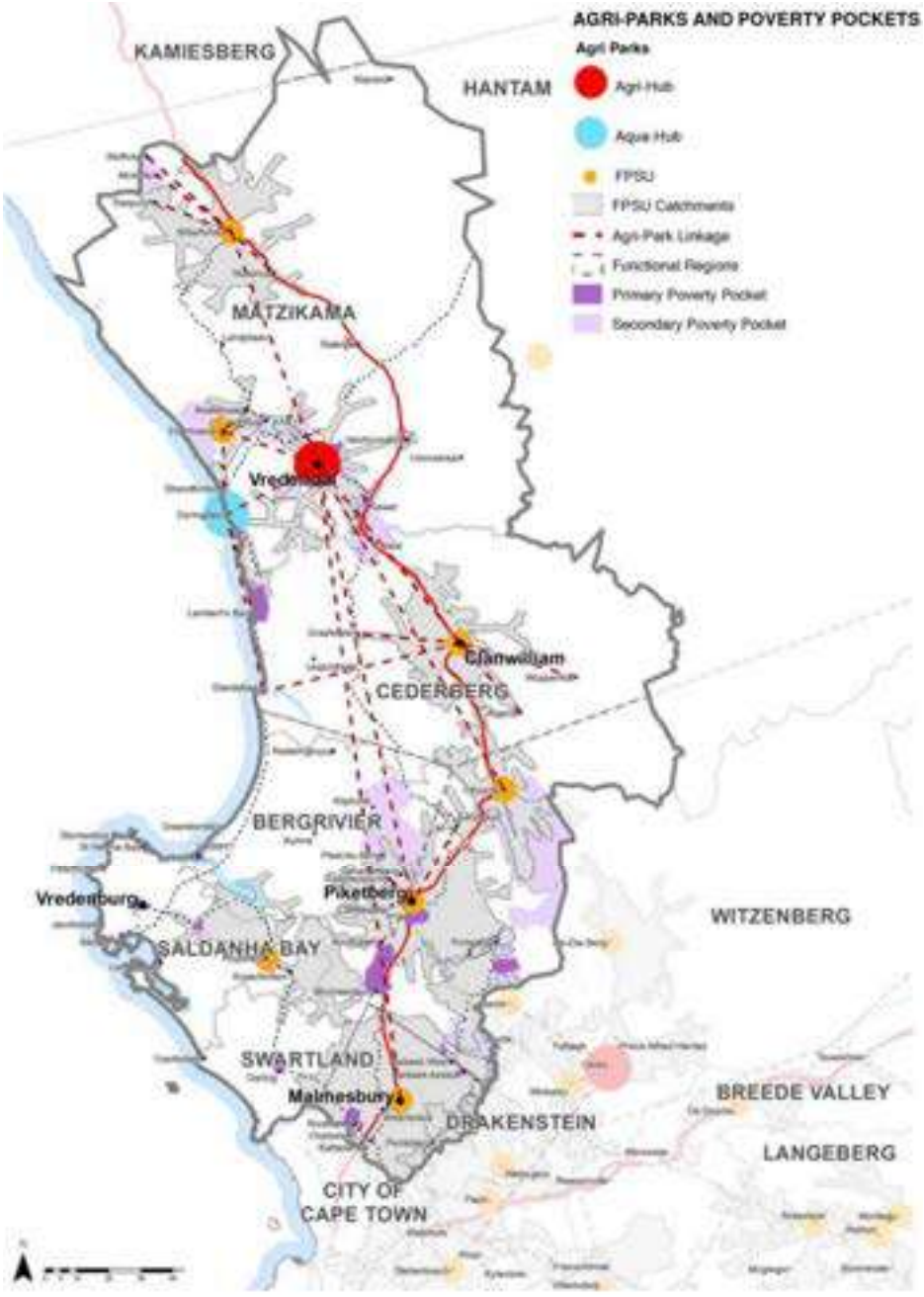
The Agri-Park is comprised of three basic units:

- ***The Farmer Production Support Unit (FPSU)****: A FPSU is a rural outreach unit connected with an Agri-hub. The FPSU does primary collection, some storage, some processing for the local market, and extension services including mechanisation.*
- ***The Agri-Hub Unit (AH)****: The AH is a production, equipment hire, processing, packaging, and logistics and training (demonstration) unit, typically located in a larger agricultural service centre.*
- *The **Rural Urban Market Centre Unit (RUMC)**. The RUMC is typically located in a higher order urban centre and has three main purposes:*
    - *Linking and contracting rural, urban and international markets through contracts.*
    - *Acts as a holding-facility, releasing produce to urban markets based on seasonal trends.*
    - *Provides market intelligence and information feedback, to the AH and FPSU, using latest Information and communication technologies.*

The Agri Hub for the West Coast District Municipality was identified in Vredendal in the Matzikama Municipality. With the sphere of influence of the City of Cape Town over the southern portion of the West

Coast district, Vredendal is well suited to its function as an Agri-Hub to serve the northern most areas of the district. In addition to the Agri Hub in Vredendal a total of eight FPSU's have been identified in the West Coast District at Bitterfontein, Ebenhaeser (priority), Doringbaai (priority), Clanwilliam, Citrusdal, Piketberg, Hopefield and Malmesbury**.**

Figure 7: Malmesbury FPSU Spatial Target *West Coast District Rural Development Plan 2017*



The FSSU's in Clanwilliam and Malmesbury are proposed to be implemented during the 2018/2019 financial year. Local Municipal and District Integrated Development Plans and Spatial Development Frameworks are required to integrate the Agri-Park Initiative into their development proposals.

Malmesbury Farmer Production Support Unit

Although Malmesbury was not initially identified as a FPSU but for support coverage and spatial linkages to areas of high concentration and poverty, plusemerging farmer activity, this area was added as a FPSU. Although no specific site has been identified for the FPSU, it is proposed as part of the SDF that this unit be established within the Intensive Rural Development Corridor along the N7 due to its high level of accessibility and existing intensive agricultural and other related uses.

The WC DRDP identified the following key commodities for the Malmesbury FPSU:

- *"Emerging farmer small-holding and peri-urban small-scale production of pig, sheep, goats, cattle, poultry and vegetables.*
- *Emerging commercial farmer production from existing and future Proactive Land Acquisition Strategy projects including grapes, grain products, pomegranates and olives, as well as larger commercial-scale intensive livestock and poultry production (e.g. piggeries, beef cattle feedlots, poultry farms (i.e. layers and broilers).*
- *The current development of the area to the south of Malmesbury as a "poultry belt" together with increasing development of piggeries and beef feedlots, and similar agri-development trends in the adjoining City of Cape Town rural area, provides a positive receiving environment for emerging farmer establishment, production and marketing (i.e. metropolitan market proximity)."*

With Malmesbury already established as an agri-service and processing centre the FPSU will align with the existing infrastructure and support services with the following to be noted:

- *"Increasing the capacity of both red and white meat abattoirs (new or partnership expansion of existing facilities), especially given entry capacity constraints being experienced by emerging/ small producers of poultry (broilers) and pigs in the Malmesbury area.*
- *Increasing agri-infrastructure and services demand (e.g. vegetables and livestock production) from emerging farmer settlement and agri-production development in the Swartland Municipality's identified agriculture corridor abutting the N2 between Abbotsdale and Kalbaskraal, as well as the WCG:DoA's Riverlands and Pella Projects, and peri-urban agricultural projects within the municipal commonage and peripheral to Ilinge Lethu, including piggeries and kraal-based goat/ sheep production and food tunnels (e.g. Food Basket for Africa, initially part of the Swartland Development Foundation).*
- *Aligning FPSU infrastructure and services with current initiatives and services offered by WCG:DoA office in Malmesbury e.g. extension services to farmers, rural development services/ training offered by the Goedgedacht Trust, and Agri-SETA training available through the West Coast TVET College Campus established in Malmesbury in 2015.*
- *Provision of (or access to) "starter" production infrastructure units (poultry houses, piggeries) for small-holding and peri-urban emerging farmers and community-based groups."*

Malmesbury Farmer Production Support Unit (FPSU) Catchment Area Projects area listed in Annexure3.

Rural proposals for Ward 7: Kalbaskraal & Abbotsdale

The proposals below are ward specific. Any proposal that extends across ward boundaries was documented as part of the regional proposals.

Proposals are grouped according to the five objectives. Proposals per objective differentiate, where appropriate, between agriculture and tourism:

Regional proposals according to the five objectives follow below:

Objective 1: Grow economic prosperity and facilitate economic sector growth [Economic Environment]

	Agriculture	Tourism
Commercial	Develop an**airport** along the southern section of N7 and optimise locality and link with R45	
	Support Malmesbury as a Regional Service Centre. Develop an **intensive agricultural development corridor**, along the N7, including Tierfontein and Groenrivier small holdings and the "Swartland Meander" that will result in job creation and economic development (Southern section of Ward 4, intensive agricultural production area). Promote small scale agri-processing and agricultural service industry opportunity. Support and allow for intensive agriculture, agriculturally related industries and commercial opportunities, exhibition centres and internal densification of agricultural units to support growth and economic development along this corridor. Support intensive irrigation of cultivated area. Maintain and support of road network to support industrial activities, consider alternative transport methods such as the railway line to support the agriculture industry. Support development of commercial infrastructure on farms along the Intensive Rural Development Corridor, including farm stalls and agri-processing, tasting of farm produce venues, and petro ports to support the N7 transport zone.	
	Promote both extensive agricultural farms (400ha – 780ha) constituting high potential dry land cultivation & smaller agriculture units, constituting medium & high potential land, allowing for rural living e.g. Dassenberg smallholdings (City of Cape Town).	
	Facilitate land reform in Rural Corridor similar to Klipvlei and Leliefontein. (located in corridor).	
Tourism	As part of the Intensive Rural Development Corridor, develop a **Swartland Meander** along the Old Cape Road as the eastern edge of the Intensive Rural Development Corridor. Allow for more tourism related facilities to develop around these routes (accommodation, recreation facilities, agri-processing and selling of products venues, etc.). Promote prominent agri-processing related tourism destinations in the Swartland. Produce niche produce (value adding) specific to the intensive rural development corridor and the "Swartland Meander".	
	Support function and exhibition venues on farms i.e. Outdoor Exhibition Centre on Farm Leliefontein along N7. Promote Outdoor Exhibitions Centre as part of Intensive Rural Development Corridor.	
Industrial	Support Building Sand mining (rough textured sands derived from weathered granite) mining (only west of Paardeberg). Support mining of clay, to make bricks, at Kalbaskraal (two brick work sites).	
	Develop small & service industries. Support packaging and processing on intensive production farms (vineyards, stone fruits, olives and vegetables).	
Residential	Develop subsidized housing, in Kalbaskraal.	
	Encourage higher density residential uses in corridor.	

Objective 2: Proximate convenient and equal access [Economic Environment]

N7	Optimise links to markets (Cape Town & Windhoek):Dual carriage way between Cape Town and Malmesbury to increase accessibility & reduce travel time. Support N7 as regional links improving mobility and connections with markets in the Cape Town Metropole. Support optimal use of internal alternative road network to provide new access points to the N7 as a result of the upgrade to the N7.
R45	Strengthen link to Drakenstein, which forms the northern boundary of Ward 7. Link Malmesbury and Vredenburg/Saldanha via Hopefield and also link to the **R27**. Maintain road network, although in good condition
R304	Strengthen Link between Malmesbury and northern suburbs, Durbanville, Stellenbosch and N1. Maintain road network Strengthen R304 & N7, as a regional link, improve mobility and connections with markets in the Cape Metropole. Develop transport nodes along R304 and N7.
R1111	Capitalise on upgraded Old Cape Road from Malmesbury to Philadelphia via Kalbaskraal, known as the Divisional Road 1111: Develop the Swartland Meander as a scenic route within the agricultural landscape.
Public Transport	Determine the viability of a reliable public transport service along the N7 between Malmesbury and Greater Chatsworth as well as between the Greater Chatsworth areas and Atlantis and Cape Town. Increase the mobility of the local community.

Objective 3: Sustain material, physical and social wellbeing [Social Environment]

Amenities	Develop a multipurpose community centre and sport facility between Chatsworth and Riverlands.

Objective 4: Protect and grow place identity and cultural integrity. [Built Environment]

Administrative	Enhance Malmesbury as regional service centre. Support Kalbaskraal as a rural settlement with limited growth potential. Protect Abbotsdale as a rural village as part of Malmesbury. Support development of farms between Diep River and N7 as intensive agricultural production areas.
Heritage tourism route	Consider grading of heritage resources when deciding about development on farms. Include significant heritage farms and properties into potential heritage tourism route. Old Cape route, as scenic and heritage route. Protect all and promote some of the 48 rural sites surveyed Swartland Rural Heritage Survey 2014 –in Ward 7: Grade 3 A (high local significance) – 3, Grade 3 B (some local significance) – 35, Grade 3C (limited local significance) – 9, No grading (no heritage resource) – 1. Develop the slave liberation and mission station route that includes Vogelgezang (freedom to slaves of 1808 and the Khoi rebellion), Abbotsdale (Anglican missionary), Mamre (Moravian missionary) in Cape Town and Wittewater and Goedverwacht missions in the Bergrivier municipal area.

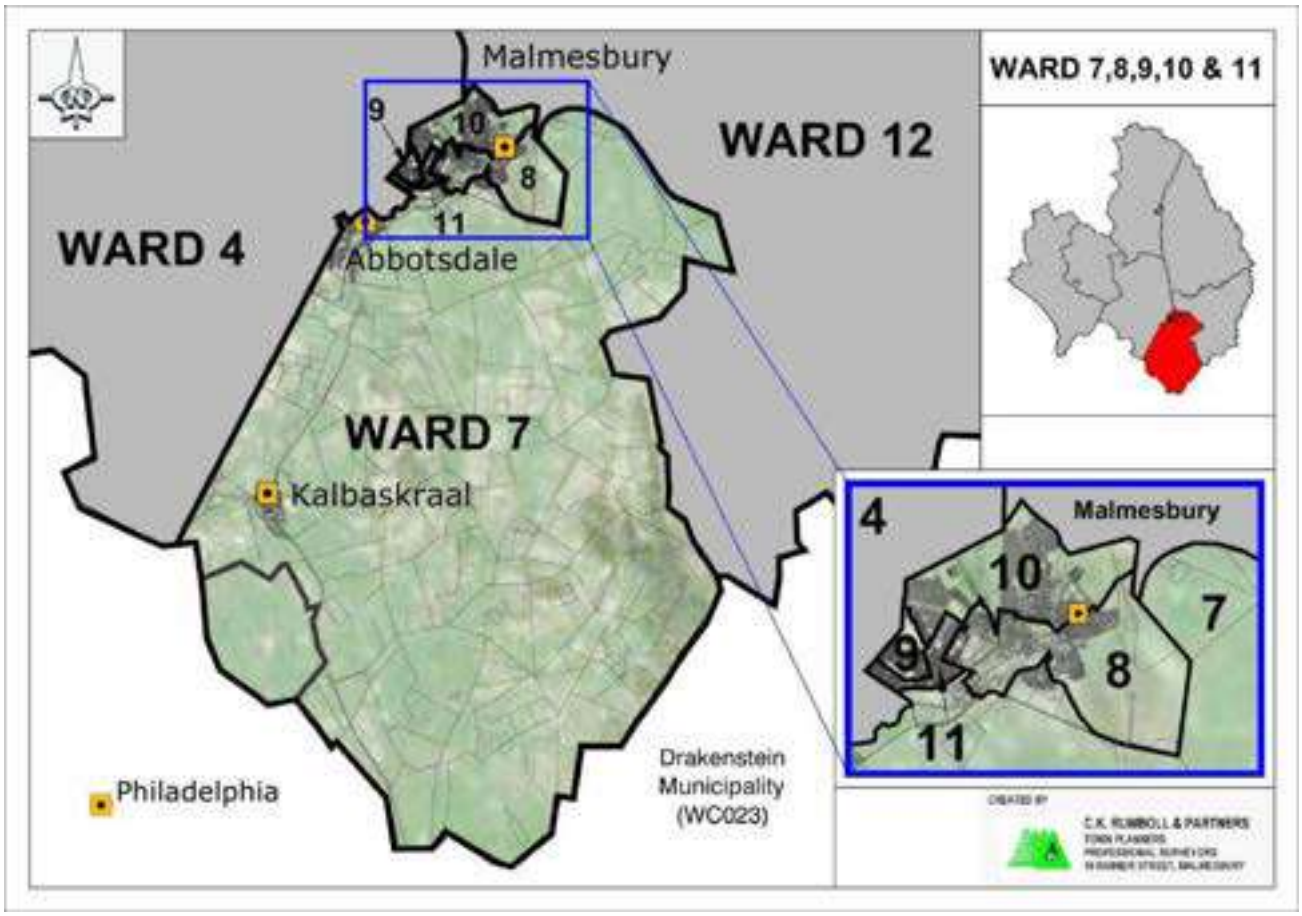
Objective 5: Protect ecological and agricultural integrity [Biophysical or Natural Environment]

There are no specific proposals for ward 7 to support this objective.

Biodiversity	Expand Paardeberg Nature Reserve to allow for a link between the Kasteelberg corridor and the reserve and Dassenberg and Darling Hills. Classify Paardeberg, Paardeberg Nature Reserve and surrounding area are Core 1 and 2 areas.	Promote a Swartland mountain bike race around Paardeberg and Paardeberg Nature Reserve and surrounding areas and link with Porseleinberg (Ward 12) and Kasteelberg (Wards 12 & 3).
	Strengthen Diep River catchment area (and buffer areas).	Protect mountains (backdrop of Paardeberg), rolling grain and canola fields and Diep River corridors.
Waterways	Protect Diep River system as an important ecological corridor (Ward 4) flowing into the ocean at Milnerton.	Create open space network along the Diep River: Protect Diep River & Paardeberg as landscape resource.
	Monitor irrigation in Intensive Rural Development Corridor along the Diep River and from underground sources. Effectively manage ground water and catchment area to ensure good water quality in the Intensive Rural Development Corridor.	

5.7 Wards 8,9,10, 11 – Malmesbury and Abbotsdale

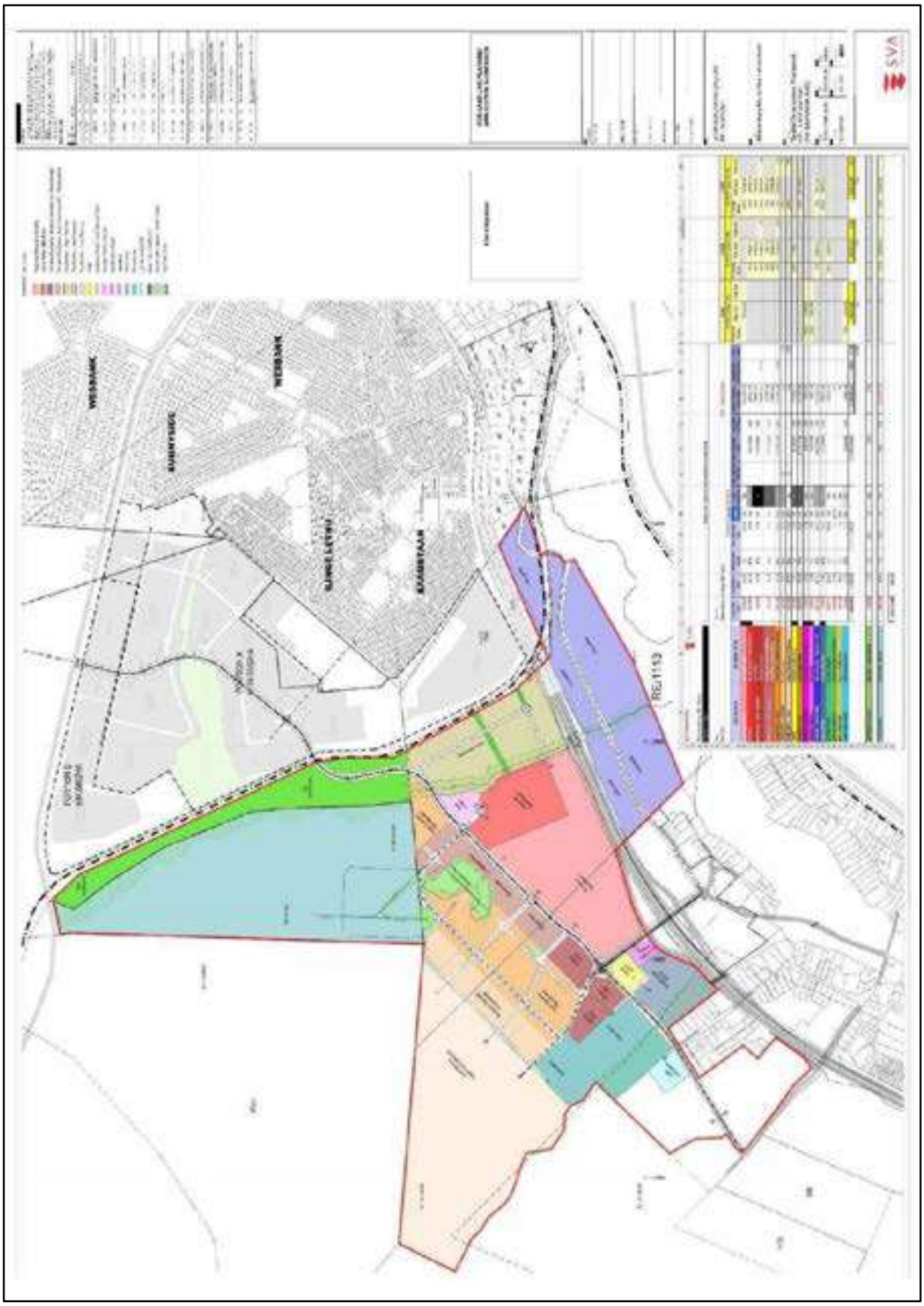
Wards 8, 9, 10 and 11 comprise the urban areas of Malmesbury. Although Abbotsdale forms part of Ward 7 it is included in this section as a result of its spatial integration with Malmesbury. Malmesbury/Abbotsdale also forms the main town in the Swartland and is identified as the Regional Service Centre.

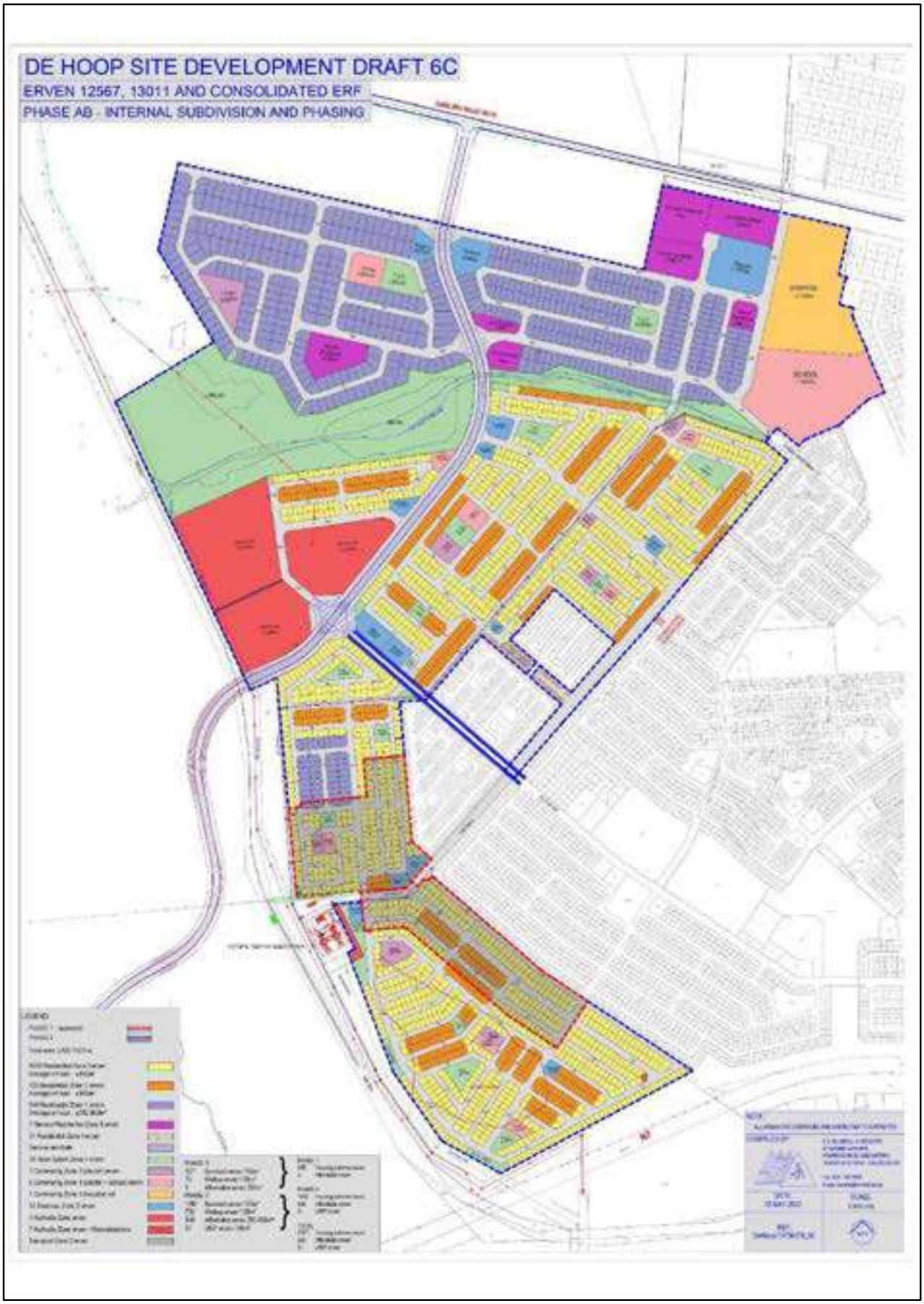


5.7.1 Malmesbury and Abbotsdale

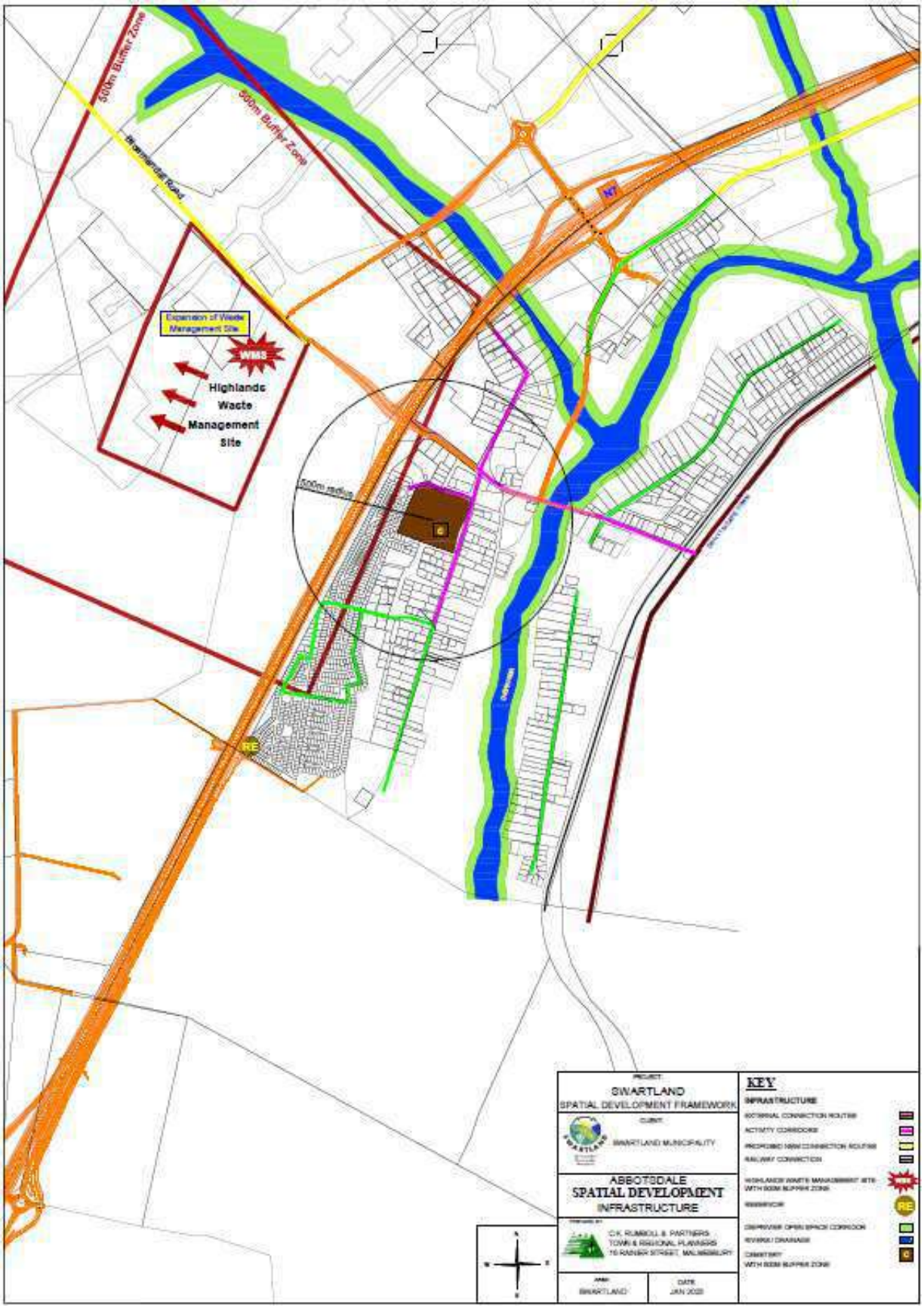
Malmesbury is approximately 60 kilometres north of the Cape Town Metropolitan area. The town is surrounded by hills of vineyards and wheat fields. The vibrant combination of colours and textures of the landscape contributes to the unique character of the Swartland. Malmesbury also serves as the connection point for four major transport routes; the N7 that connects Cape Town with the Northern Cape and Namibia, Main Road 25/1 that connects Ceres and Paarl with the N7, the R302 Main Road 174 that connects Stellenbosch and Durbanville with Malmesbury and lastly Main Road 21/1 that connects Stellenbosch and Durbanville with the West Coast. The location of Malmesbury in terms of access and transportation routes as well as the town's proximity to other towns such as the Riebeek Valley, Darling, Yzerfontein, Moorreesburg, Vredenburg, Langebaan and Piketberg are contributing factors to the identification of Malmesbury as the **regional service centre** of the Swartland.

Abbotsdale is situated 5 kilometres from Malmesbury in a south-western direction and is classified as a small **rural town**. The town has access directly from the N7.




DE HOOP SITE DEVELOPMENT DRAFT 6C
ERVEN 12567, 13011 AND CONSOLIDATED ERF
PHASE AB - INTERNAL SUBDIVISION AND PHASING


SWARTLAND
SALISBURY
SPATIAL DEVELOPMENT
INFRASTRUCTURE


500m Buffer Zone
500m Buffer Zone
Expansion of Waste Management Site
WMS
Highlands Waste Management Site
500m radius
RE
SWARTLAND
SPATIAL DEVELOPMENT FRAMEWORK
SWARTLAND MUNICIPALITY
ABBOTSDALE
SPATIAL DEVELOPMENT
INFRASTRUCTURE
C.K. RUMBOLL & PARTNERS
TOWN & REGIONAL PLANNERS
JAN 2023
KEY
INFRASTRUCTURE

Objective 2: Proximate convenient and equal access

CONNECTIVITY			
	Elements	**No.**	**Proposals**
Protect	Roads:	1	There are five main access (primary) routes to Malmesbury and Abbotsdale: - N7; - Main Road 224 (R315): Connects Darling and Yzerfontein and the R27 (West Coast Road); - Trunk Road 25/1 (R45): Connect Paarl and Riebeek Valley; - Main Road 174 (R302): Connects Stellenbosch and Durbanville; - Trunk Road 21/01 (R45): Connects West Coast towns such as Hopefield, Langebaan, Saldanha and Vredenburg; - Divisional Road 1111 - Old Cape Route (through Abbotsdale): Links Malmesbury and Kalbaskraal.
	""""""""""	2	N7.
		3	Develop corridor with easy access to Cape Town and Northern Cape and Namibia.
		4	Enhance safer access to Abbotsdale and Darling Road.
	Activity Streets & Corridors:	5	Main activity corridor: Bokomo and Darling Road, Voortrekker Street, and Piet Retief Street (to Paarl).
		6	Activity streets/corridors: - Central Business District of Malmesbury: Lang, Vrede, Lowry Coles, P.G. Nel and Du Toit Streets; - Wesbank: Darling Road, Palmboom, Alfa, Jasmyn and Jakaranda Streets; - Ilinge Lethu: Alfa, Jakaranda and Holomisa; - Abbotsdale: Darling Road, Kerk, Lang and Skool Streets.
	Rail:	7	Malmesbury to Bitterfontein, Bellville and Kalbaskraal to Darling.
Change	""""""""""	8	Improve access and mobility to Schoonspruit Industrial.
		9	Develop design and landscape guidelines for industrial interface with N7 entrance into Malmesbury.
		10	Develop nodes at N7 and internal road network crossings (vehicle and pedestrian traffic) specifically interchanges between Abbotsdale and Malmesbury and north of Malmesbury.
	Activity Streets & Corridors:	11	Support and concentrate higher order development and mixed uses along activity corridors and streets.
		12	Beautify main access route Bokomo and Voortrekker Street. Plant trees and provide street furniture.
		13	Strengthen Lang Street towards Hospital.
		14	Strengthen development along Darling Road as main activity axis connecting the western and eastern precincts of town.
		15	Enhance pedestrian friendliness of Bokomo and Voortrekker Way.
		16	Formalize and secure pedestrian route along Darling Road linking to Malmesbury CBD.
	Pedestrian and Cycle Routes:	17	Improve accessibility for the disabled.
		18	Create pedestrian friendly environments along main activity streets.
		19	Consider provision of cycle routes along main activity corridors and routes.
Develop	Roads:	20	Upgrade and maintain internal road network in Malmesbury.
		21	Concentrate and support development on activity corridors and streets.
		22	Liaise with Provincial and National roads to participate in road network upgrades.
	""""""""""	23	Landscape the industrial interface with N7 (of proposed industrial areas north of N7).
		24	Facilitate pedestrian crossings on N7 as part of upgrade (improve user-friendliness of pedestrian crossings).
		25	Beautify and landscape access roads to Malmesbury and Abbotsdale (Plant trees, provide street furniture improve pedestrian walkways).
	""""""""""	26	Upgrade approximately 42 km of gravel roads, mostly in Abbotsdale.
	Activity Streets & Corridors:	27	Upgrade Bokomo Road / Voortrekker Street crossing as part of the N7 upgrade.
		28	Implement a realistic road network plan:
		29	Consider one way streets in Malmesbury to improve traffic flow to and from proposed old golf course development behind Swartland High School.
		30	Lengthen Berocca Street linking to Piketberg Way for alternative access to Old Golf Course and Klipfontein Development.
		31	Introduce roundabouts along Voortrekker Way.
		32	De-proclaim proposed Diep River Road (Proclamation 96/1986 as per Rl34/54).
		33	Develop link across Diep River, south of sport grounds, to the industrial area and as alternative link to R304.
	Pedestrian and Cycle Routes:	34	Develop a safe pedestrian route from Wesbank/Ilinge Lethu to Malmesbury CBD (surfaced with shaded areas, adequately lit, safe N7 underpasses and Darling Road pedestrian crossing).
		35	Develop tourism/recreational/ multi-use cycle and bike trails and pedestrian walkways along Old Cape Road between Malmesbury, Abbotsdale and Kalbaskraal and along the Diep River (part of Open Space Network).

Objective 2: Proximate convenient and equal access

PUBLIC UTILITIES			
	Elements	**No.**	**Proposals**
Protect	Future Demand:	36	Capacity of bulk infrastructure adequate.
	Water:	37	Water for Malmesbury and Abbotsdale is obtained from Paardebergdam and the Voëlvlei Scheme and stored in reservoirs with a total capacity of 20 500 kl: Correctional Service Reservoir – 2500 kl; Wesbank Reservoirs x3 – 9000 kl; Mount Royal Reservoir – 2 500 kl; Panorama Reservoir – 2 500 kl; Old Golf course Reservoir – 4 000kl.
		38	Abbotsdale's water is stored in the Klipfontein Reservoir (3 000kl.) and a New Reservoir (2 000 kl.).
	Waste Water:	39	Mainly a flush sewerage system and some on-site septic tanks.
	Electricity:	40	Swartland Municipality supplies Malmesbury (incl. Wesbank, Illingu Lethu) and Eskom supplies Abbotsdale.
		41	Street lightning adequate in Malmesbury and in Abbotsdale.
		42	A second Eskom 132/11KV bulk supply point was completed and commissioned for the developments north of Malmesbury. Adequate capacity is available 2019/2020.
	Waste:	43	The Highlands Waste Management Site receives household, building material and garden waste & is the main municipal landfill site in the Swartland. It is south west of Malmesbury and west of the N7 and Abbotsdale. It and the material recovery facility (MRF) (established in 1997, upgraded in 2014) are operated by the private company Wastegro, appointed through a public tender by the municipality. Formalised recovery takes place through the MRF prior to disposal, which prevents informal salvaging at the site.
	Safety:	44	The police and fire station in Malmesbury serves surrounding rural towns.
Change	Future Demand:	45	Align bulk infrastructure planning with SDF growth proposals.
		46	Ensure that the locality of these infrastructure features is in line with SDF proposals and does not impact on the landscape qualities in the Swartland.
	Water:	47	Extend Water provision to all properties.
		48	Manage adequate capacity for future demand as per "*Water Services Development Plan*" (Malmesbury and Abbotsdale) (SDF sector plans): 2017: 3183,378 | 2022: 3516,080 | 2027: 3890,277 | 2032: 4311,645
	Waste Water:	49	Establish and provide unknown bulk pipeline capacity (Estimated bulk capacity adequate up to 2019/2020).
	Electricity:	50	Provide a third Eskom bulk supply point for the proposed development south of Malmesbury.
		51	Support use of natural sources e.g. alternative energy.
	Storm water:	52	Rebuild storm water channel through town which is collapsing.
		53	Implement maintenance and upgrade programme for rivers.
	Waste:	54	Consider potential area for composting facility in Malmesbury close to Highlands Landfill site.
Develop	Future Demand:	55	Identify and provide land for bulk infrastructure for reservoirs, overhead power lines, future roads and water pipeline.
	Water:	56	Replace sections of distribution network in Dalsig and Bergsig. Manage adequate land for future expansion of storage capacity.
		57	Support use of natural sources e.g. water harvesting (in tanks).
	Waste Water:	58	Provide bulk pipeline south of Malmesbury for proposed subsidized housing development to proceed.
	Electricity:	59	Upgrade obsolete electrical infrastructure.
	Storm water:	60	Replace parts of storm water network where blocked, especially Wesbank.

Objective 1: Grow economic prosperity and facilitate economic sector growth and
Objective 4: Protect and grow place identity and cultural integrity

SPACE, BUILT			
	Elements	**No.**	**Proposals**
Protect	Heritage & Tourism:	61	Malmesbury was established in 1743 on the banks of the Diep River. The Zwartlandskerk (Dutch Reformed church) was built in 1745. On 21 May 1827 Malmesbury was officially proclaimed. Malmesbury received municipal status in the 1860's and is currently classified as a Category B municipality.
		62	Abbotsdale, situated on the southern periphery of the greater Malmesbury, was established in the 1800's when Bishop Gray bought the land to build a mission station. In 1986 properties were transferred to residents as owners for the first time.
	Residential:	63	Malmesbury's grid design is central to its historic core adjacent to the Diep River and surrounding low density residential areas. (Incl. Swartland High and Primary Schools).
		64	The CBD is located along Voortrekker Street southwards, while industrial development occurred adjacent to Bokomo Road. The CBD provides limited expansion opportunities.
		65	Malmesbury, and the CBD in particular have a compact urban structure, whereas more recent neighbourhoods i.e. Tafelzicht provides limited infill development opportunities.
		66	Wesbank, west of the N7 is a medium and high-density residential area while Ilinge Lethu on the south-western boundary of Malmesbury only has high density residential areas.
		67	Abbotsdale located on the river banks of the Diep River has a linear development pattern and a rural character.
		68	Malmesbury is an alternative place of residence for higher income households commuting to Cape Town Metropole.
		69	Dual N7 strengthens Malmesbury's residential function.
		70	Malmesbury, as main town, serves as a regional service centre and offers administrative, institutional, manufacturing and commercial services in close proximity to the Cape Town Metropolitan.
	Commercial:	71	Regional service centre with associated administrative and industrial functions which attracts growth.
		72	A diversified economic base.
		73	High level of mobility with the dual N7 national road also known as the Cape Namibia route and the R27 (West Coast Road). Highly accessible from N7, railway lines and supporting infrastructure.
		74	Malmesbury is the main industrial town in the Swartland with its ideal location on the N7, new access points off the N7 and its close proximity to the Cape Town Markets and location on major routes to the Saldanha IDZ and the north.
		75	Malmesbury has a high development potential.
		76	Malmesbury has a high population growth, particularly immigration of young people between twenty-five (25) and twenty-nine (29).
Change	Heritage & Tourism:	77	Protect heritage buildings (graded and ungraded), areas and features & control alterations or demolition of heritage buildings.
		78	Develop heritage zones across streets applying the Heritage Study by Graham Jacobs.
		79	Develop esthetical guidelines for development in these areas.
		80	Support the development of high standard accommodation opportunities.
		81	Support Agri-Tourism, especially in Intensive Rural Development Corridor south of Malmesbury along the N7.
		82	Develop Malmesbury as a tourism centre, exploiting its ideal location to become a basis from where the Swartland, West Coast, Cape Winelands and Cape Town can be explored.
		83	Capitalize on Swartland character as "*Bread Basket*" of the West Coast and Western Cape.
	Residential:	84	Increase density by 2027 from the current 10.8 units per hectare to 18 units per hectare in Malmesbury and from the current 6.8 units per hectare to 8.5 units per hectare in Abbotsdale.
		85	Protect rural character of Abbotsdale and densify sensitively through subdivision.

		86	Apply minimum erf sizes in Malmesbury and Abbotsdale to protect the character of precincts: - Amandelrug – 400m²; - Bergsig – 400m² & 500m² depending on area; - Dalsig – 400m²; - De Molen – 400m²; - Garden Village - 500m²; - Newclair - 500m²; - Panorama - 700m²; - Sunnyside - 260m² & 500m² depending on area; - Wesbank - 260m² & 500m² depending on area; - Wingerd - 500m²; - Tafelzicht – no further subdivision; - Abbotsdale: 500m².
		87	Abbotsdale: Densify in the following areas: - CBD and immediate surroundings; - Along activity corridors; - individual properties depending on location.
		88	Develop Restructuring Zones in identified areas for social housing.
		89	Provide for housing for retirees.
		90	Provide different housing types to allow for integration and spatial justice.
		91	Support medium density developments such as group housing and town houses.
		92	Provide adequate land for private and public residential development.
		93	Support higher density residential developments (flats) within CBD.
		94	Support renewal in the CBD with mixed uses that includes a residential component.
		95	Attract commuters to live in Malmesbury by protecting the expansive rural character of the Swartland.
	Commercial:	96	Renew and enhance the visual appeal of Malmesbury's central area to be more visitor friendly and vibrant.
		97	Expand the CBD along Voortrekker Street northwards.
		98	Support mixed use development CBD (including residential and business uses).
		99	Strengthen, upgrade and beautify the secondary CBD in Wesbank.
		100	Support the development of house shops/home occupation in residential areas.
		101	Create affordable commercial properties and integrate commercial areas in previously disadvantaged neighbourhoods.
		102	Encourage house shops in Wesbank and Ilinge Lethu and expand commercial nodes.
		103	Capitalise on development opportunities in Bokomo and Darling Road, which connects Western (Wesbank) precinct and CBD.
		104	Promote mixed use in Malmesbury CBD.
		105	Maintain Abbotsdale's rural character through tourism, eco-tourism and home occupation and local production (job creation).
		106	Build on Abbotsdale's rural character through developing market and community gardens.
	Industrial:	107	Provide adequate land for industrial development and service industries, including variety e.g. manufacturing, processing, warehousing, etc.
		108	Promote agri-processing and other agricultural related industries supporting the agricultural sector and value adding close to the source, limiting the production footprint.
		109	Support a mixed-use precinct along Old Cape Road (DR1111) between Malmesbury and Kalbaskraal including commercial, service industries and industrial uses.
		110	Develop an industrial and mixed-use precinct north of the N7 between Abbotsdale and Malmesbury.
		111	Allow mixed uses in Alfa Street area identified as Zone N6.
Develop	Heritage & Tourism:	112	Compile guidelines for development in heritage overlay zone.
		113	Support historical routes in town and improve road signs.
		114	Develop the warm water spring, De Bron, as a historical tourism opportunity.
		115	Investigate upgrading and opening of underground water canal as a possible historical feature in the town.
		116	Beautify Malmesbury through implementing the landscape proposals of Johan van Papendorp.
		117	Protect vibrant character derived from its origins as a historical church settlement.
		118	Protect historic buildings minimizing potential negative impact of densification and infill development.
	Residential:	119	Provide land for GAP housing to develop agri-villages, opportunities for private developers and provide different housing typologies.
		120	Provide subsidized housing in Malmesbury.
		121	Government residential developments, supported by Human Settlement programmes, will be supported in Malmesbury and Abbotsdale.

		122	Enrol farm workers on housing waiting list.
		123	Provide (in future) subsidised housing in Greater Chatsworth, Kalbaskraal and Riebeek Valley.
		124	Land requirement (757ha over 20 years in Malmesbury) to accommodate 4.5% growth rate. 1 110.1ha is available and is vacant and underdeveloped land.
		125	Provide 37.5ha in Abbotsdale over the next 20 years of which 125.5ha is vacant and undeveloped areas as per Vacant Land Audit.
		126	Plan for expansion of bulk infrastructure to support future residential growth.
		127	Develop areas according to available infrastructure capacity.
		128	Support densification in Malmesbury, Wesbank and Abbotsdale through: - Subdivision in context with surrounding area; - Infill development (in close proximity to job opportunities & social infrastructure (spatial justice); - Renewal and restructuring.
		129	Other forms of medium and higher density residential neighbourhood developments.
		130	Promote residential development at the De Hoop Integrated Residential Development and Swartland Junction development.
		131	Unlock potential of restructuring zones for social housing.
		132	Support the relocation of small farmers to 2 possible sites.
		133	Promote residential development south of Abbotsdale (25ha).
		134	Promote the future residential expansion of Abbotsdale for integration with Malmesbury.
		135	Develop possible residential opportunities between Church Street and Long street (development constraints: steep slopes and sewer line).
		136	Create Infill residential opportunities on vacant land next to De Kock Street, Tosca Street and Geelhout Avenue.
	Rural Residential:	137	Settle small farmers west of Abbotsdale for farming purposes (land is privately owned) and support renewable energy development like a solar plant. No form of residential settlement included due to the 500m buffer zone around the Highlands Landfill Site.
	Commercial:	138	Develop a strategic plan for CBD renewal in Malmesbury and Wesbank, addressing open space networks, safety, speed calming, pedestrian movement, parking, heritage resources and landscaping.
		139	Develop Darling Way, Acacia Avenue, Bokomo Way and Voortrekker Street as an important commercial axis in Wesbank and Malmesbury.
		140	Take over Voortrekker Street from the Provincial Department to allow for flexibility along the street interface.
		141	Develop innovative neighbourhood business nodes along activity routes that allow people access to the commercial sector. Support these nodes with relevant transport services e.g. taxi/bus stops.
		142	Divert growth pressure from Cape Town Metropole to Malmesbury.
		143	Capitalise on regional service centre function.
		144	Integrate and develop Malmesbury and Abbotsdale as one entity (develop areas between Malmesbury and Abbotsdale). Enhance limited economic opportunities in Abbotsdale.
		145	Support commercial development north of the N7 in Swartland Junction development.
	Industrial:	146	Timeously plan for bulk infrastructure to support industrial developments.
		147	Support development of Industrial/mixed use development south of N7 and commercial uses north.
		148	Offer investment incentives (lower fees for services and rates) for industrial development.
		149	Develop Malmesbury as a distribution node from where products can be dispatched via easily accessible road network.
		150	Utilise the accessibility of Malmesbury along the N7 close to Cape Town and toward the Saldanha IDZ and the north (Northern Cape and Namibia) as a selling point to market newly created industrial erven.
		151	Allow for expansion of light industrial/service and transport services along the Old Cape Road (DR1111) with the expansion of the urban edge on the south eastern boundary of Abbotsdale.

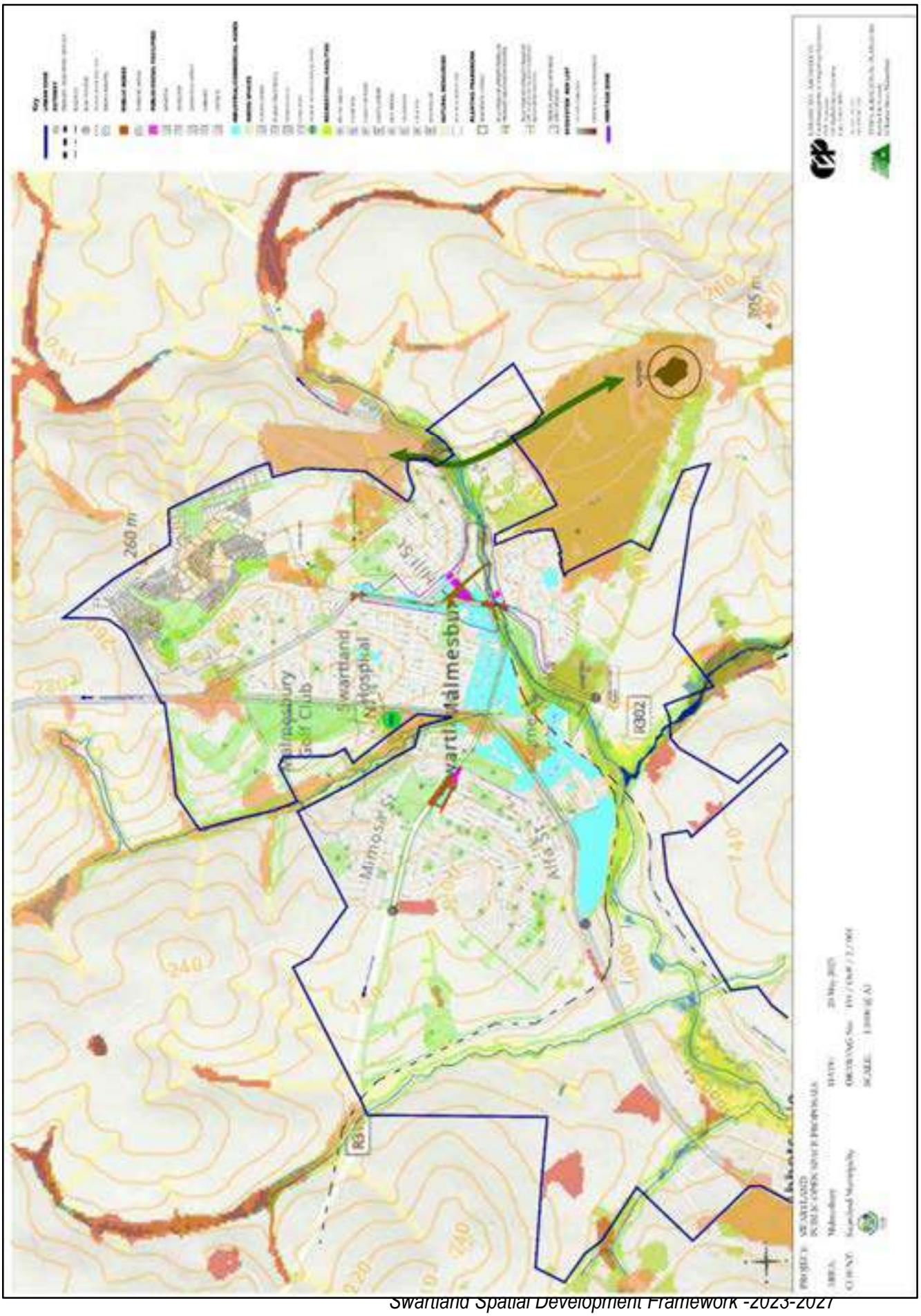
Objective 3: Sustain material, physical and social wellbeing

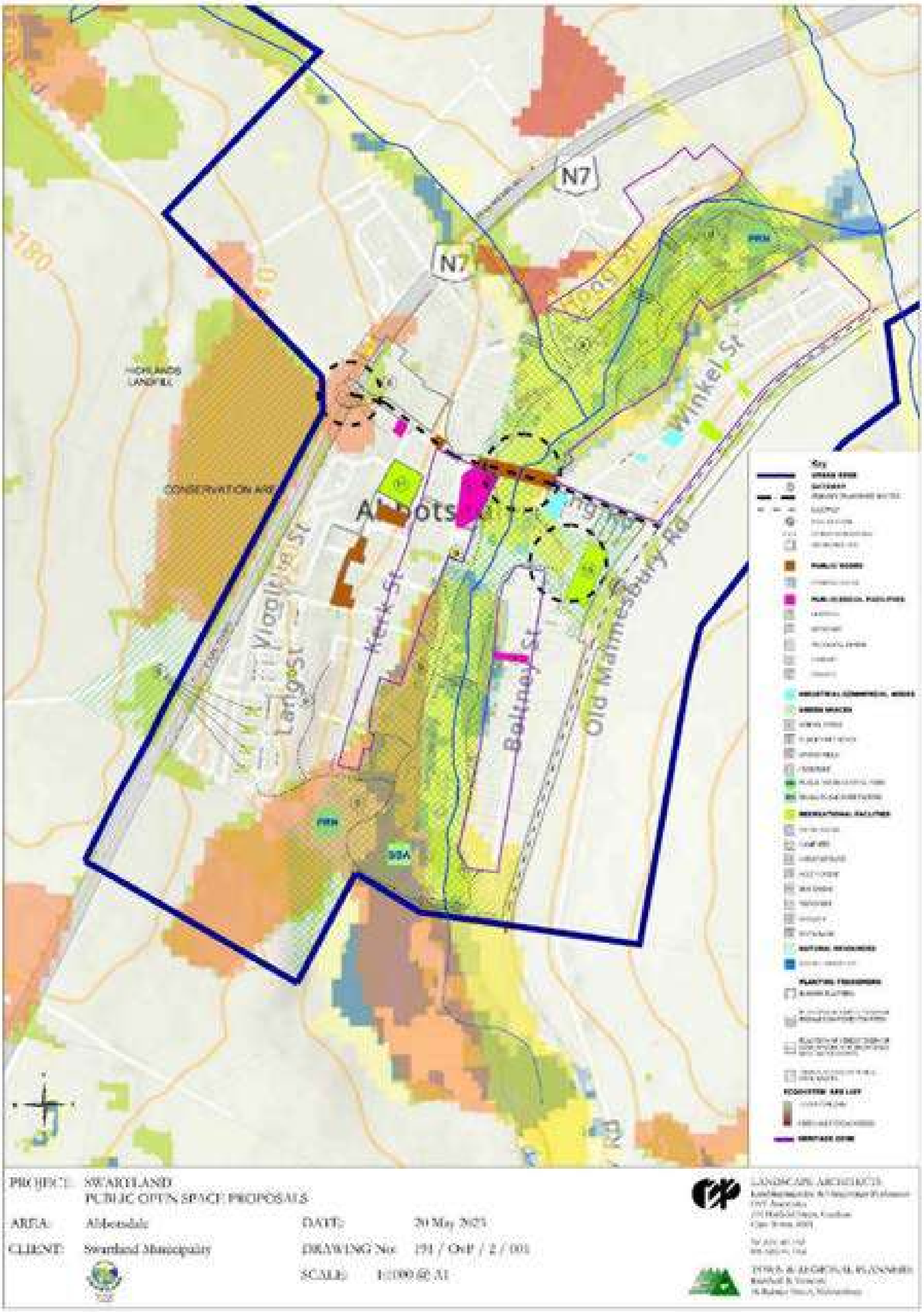
PUBLIC INSTITUTIONS			
	Elements	**No.**	**Proposals**
Protect	Community facilities:	152	Previously disadvantaged and higher density communities, like Wesbank, Ilinge Lethu, Saamstaan and Abbotsdale need social infrastructure to create sustainable communities.
		153	There are functional public open space facility opportunities along the Diep River Corridor.
		154	Community orientated and accessible projects in the communities are limited.
		155	Malmesbury has the need for expanded primary and secondary health facilities.
		156	Education facilities with a focus on crèches and secondary/tertiary facilities.
		157	More tertiary facilities or the establishment of a satellite campus in Malmesbury for bigger tertiary institutes.
	"	158	The cemetery has sufficient capacity with no need for expansion.
Change	Community facilities:	159	Identify areas for future social infrastructure within easy access of communities.
		160	Create social nodes and related community uses in previously disadvantaged areas like Saamstaan/Ilinge Lethu (RSEP program, Malmesbury).
		161	Provide school sites and create institutional nodes within Greenfields residential extensions such as Klipfontein, Old Golf course and De Hoop.
		162	Provide tertiary education node north west of N7, Wesbank and Ilinge Lethu and along Darling Road.
		163	Develop a private health care facility.
		164	Develop neighbourhood community gardens to support food security.
		165	Develop areas for small and emerging farmers in and around Malmesbury.
		166	Encourage social uses including schools, hospitals, kindergartens and guest houses, supportive of residential uses, in eastern neighbourhood precinct.
		167	Support the need for a school in Abbotsdale.
	"	168	Encourage sharing of sport facilities amongst schools and with the community.
		169	Develop multi-use Open Space Networks and recreational areas.
		170	Develop multi-use recreational areas close to sport facilities along the Diep River.
Develop	Community facilities:	171	Develop and formalise recreational areas along the Diep River to enhance multi-use of open space river corridor.
		172	Develop public recreational area (picnic area) at Platteklip River in Wesbank.
		173	Develop an education precinct at De Hoop, south of Darling Road.
		174	Access funding to support community gardens and food security.
		175	Support the development of the proposed new Primary School and Provincial Hospital along Darling Road in Zone S2.
		176	Support the redevelopment of the existing school on Erf 7621 in Zone S1 after the establishment of the new school.
		177	Provide land for the establishment of a university in Malmesbury.
	"	178	Support the provision of integrated sports/community services as part of possible RSEP program in Malmesbury to create social nodes in previously disadvantages communities.
		179	Upgrade sport facilities in Wesbank, in Abbotsdale and along the Diep River.
		180	Develop an integrated Sports facility in Ilinge Lethu/Saamstaan.
		181	Market the astro turf hockey field in Malmesbury for regional sports competitions.
		182	Develop children's play parks, day camping and picnic facilities close to sport facilities and along the Diep River.
		183	Upgrade and improve play parks in Wesbank and Malmesbury.

Objective 5: Protect ecological and agricultural integrity

SPACE, NATURAL			
	Elements	**No.**	**Proposals**
Protect	Nature and Conservation:	184	Waterways: Platteklip River, originates from hills north of Malmesbury, joining the Diep River in Malmesbury. Agriculture (cultivation of vineyards) and urban development (Royal Golf Estate and channeling the river at N7 and industrial development) has changed the flow of the river.
		185	The Diep River originates in the Kasteelberg and runs for ±65 kilometres in a south-westerly direction before connecting to the Atlantic Ocean at Milnerton. Malmesbury's urban development and trees (Blue gums of Eucalyptus camaldulensis and Port Jackson or Acacia saligna) have altered the riverbed significantly.

		186	Vegetation: Most of the transformed and degraded Fynbos areas in Swartland are found in wards 8, 9, 10 and 11. Indigenous vegetation types in these wards are considered as Critically Endangered species. Earmarked conservation areas include "Driehoek" area, "Klipkoppie", and natural areas zoned as open spaces in Mount Royal Estate, Platteklip and Diep River.
	Public & Private Open Space:	187	Public areas include: - CBD parking area around Dutch Reform church; - Public node at crossing of Voortrekker Way, Bokomo Way and the Diep River including the - Museum and taxi rank/ Bus stop; - Public node surrounding public swimming pool, squash quarts and public park; - Commercial node in Wesbank; - Sports grounds along Diep River.
Change	Nature and Conservation:	188	Rehabilitate Diep River: Environmental Authorization was obtained and an environmental management plan was formulated to manage Diep and Platteklip Rivers.
		189	Develop area surrounding the Diep River as a multi-use linear public open space system (including recreational activities).
		190	Design the interface between river and adjoining areas to be seamless and encourage buildings to front onto the river.
		191	Involve local communities and businesses in open space network development and maintenance to ensure ownership and sustainability.
		192	Require tree planting to become part of (planning and budget) the subsidized housing project.
		193	Allow for commercial uses (i.e. restaurants and other tourist related facilities along the river).
		194	Consolidate stewardship agreements with Cape Nature for conservation worthy areas including: - The Klipkoppie; - Diep River corridor; - Platteklip River corridor; - Driehoekspad area; - Areas north of N7 and east of the Highlands Landfill site, near Abbotsdale; and - Mount Royal Golf Estate opens spaces.
	Public & Private Open Space:	195	Strengthen and support public areas.
		196	Develop a strategy to upgrade and renew Malmesbury CBD.
		197	Beautify public areas and support multi-functional use of these areas.
		198	Develop and maintain a multi-use functional open space network for public use.
		199	Enhance RSEP program in Malmesbury to create social nodes and allow for related community uses in previously disadvantaged areas.
Develop	Nature and Conservation:	200	Create an Open Space multi-use network along the Diep River maintaining relevant setbacks and flood lines. Uses should include walking, jogging, cycling, biking and horse-riding and outdoors gym.
		201	Continue clearing alien vegetation and prevent erosion.
		202	Green main activity routes and planting trees. Endorse watershed management, river rehabilitation and conservation practices.
		203	Create public playgrounds and recreational facilities (picnic areas, chairs and tables along river bank).
		204	Develop a conference hall on "Klipkoppie" for functions and community events.
		205	Include an amphitheatre on Klipkoppie.
		206	Develop hot spring as a tourist attraction.
		207	Develop the following formal recreational areas along the Diep River: - Near the causeway east of Ludolf Street; - Area next to the Platteklip River south of Mount Royal Golf Estate in Wesbank; - In Abbotsdale along the river; and
		208	Provide pedestrian crossings and adequate lighting on the bridges to access to open space network.
	Public & Private Open Space:	209	Beautify central town including provision of street furniture, landscaping and create public squares.
		210	Support and facilitate development of Thusong Centre and Integrated Sport Complex in Ilinge Lethu/Saamstaan.


260 m
Malmesbury Golf Club
Swartland Hospital
Swartland Malmesbury
Mimosa St
Alfa St
R302
R311



N7
Winkel St
Kerk St
Langs St
Old Malmesbury Rd
HIGHLANDS LANDFILL
CONSERVATION AREA
Key
PUBLIC NODES
RECREATIONAL FACILITIES
NATURAL RESOURCES
PROJECT: SWARTLAND
PUBLIC OPEN SPACE PROPOSALS
AREA: Abbotsdale
CLIENT: Swartland Municipality
DATE:
DRAWING No:
SCALE:
LANDSCAPE ARCHITECTS

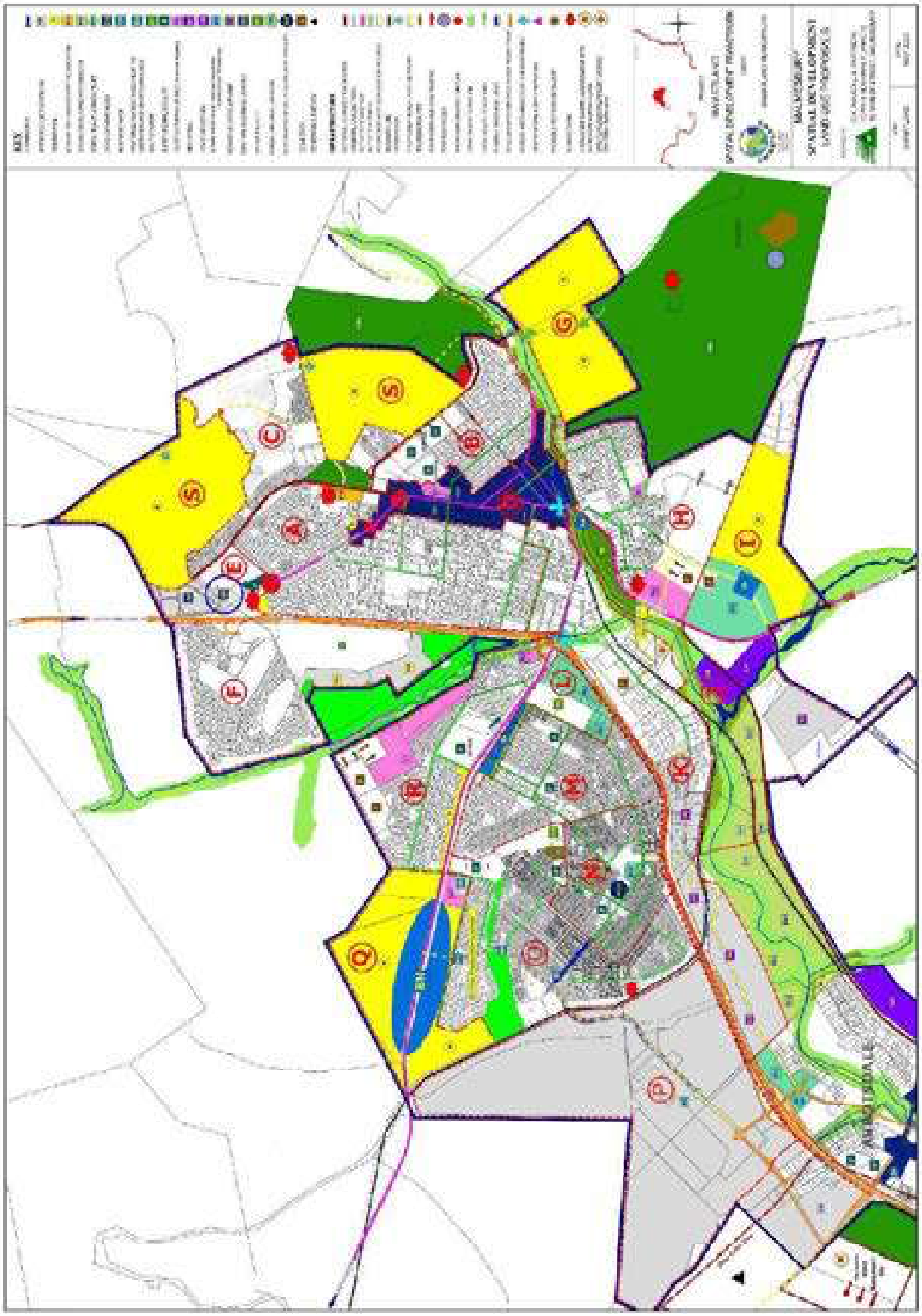
LAND USE ZONE PROPOSALS FOR MALMESBURY

Refer to the land use zone map for Malmesbury: The urban area of Malmesbury is divided into nineteen (19) zones (areas with common features) and the recommended land uses for the different zones are listed in the table below:

MALMESBURY LAND USE ZONES		Low Density Residential Uses	Medium Density Residential	High Density Residential	Secondary Educational Uses	Place of Education	Professional Uses	Business Uses	Secondary Business Uses	Place of Worship	Institution	Guest houses	Authority	Sport/Recreational Facilities	Industries & Service Trade
A	Zone A has a has a mixed land use character consisting of low and medium density residential development, with potential for high density and mixed use development along the activity corridor. Consists of government uses as well as supporting functions like crèches, schools, hostels and a hospital. Infill opportunity. Densification allowed for in the transition areas next to the commercial and industrial areas and along the activity streets.	X	X	X 1	X	X	X	X 3	X 3	X	X	X	X	X	X 8
B	Zone B is a residential area with mixed density residential development and various supporting social infrastructure and business uses near the CBD.	X	X	X 1	X	X	X	X 3	X 3	X	X	X	X	X	X 11
C	Zone C is an integrated residential area with supporting social and commercial uses.	X	X		X	X	X			X	X	X		X	
D	Zone D is the Central Business District with a commercial character. Include a restructuring zone identified for potential development of social housing.	X	X	X	X	X	X	X	X	X	X	X	X	X	X 13
E	Zone E represents a regional shopping centre with associated commercial and social facilities. Also includes residential uses, service trade as well as a hospital.	X	X	X	X	X	X	X	X	X	X	X	X	X	X 7
F	Zone F is mainly a residential area surrounding the golf course with supporting infrastructure i.e. clubhouse, restaurant, driving range.	X	X	X	X				X 14	X	X	X		X	
G	Zone G is proposed for medium and high density integrated residential development. Allow for supporting social and neighbourhood orientated commercial services	X	X	X	X	X	X	X	X	X	X	X	X	X	
H	Zone H has a mixed density residential character, including other mixed uses such as business and government functions. There are also limited industrial functions. Provide opportunity for mixed uses and higher density residential use along activity streets. Includes the correctional services facility as well as restructuring zone identified for development of social housing, and includes expansion of the cemetery.	X	X	X 3	X	X	X	X 3	X 3	X	X	X	X	X	
I	Zone I is proposed for an integrated living environment consisting of mixed density residential functions with supporting social and commercial services to the residential functions.	X	X	X 2, 12	X	X	X	X 5, 12	X 4, 12	X	X	X	X	X 6	X 13

MALMESBURY LAND USE ZONES		Low Density Residential Uses	Medium Density Residential Uses	High Density Residential Uses	Secondary Educational Uses	Place of Education	Professional Uses	Business Uses	Secondary Business Uses	Place of Worship	Institution	Guest houses	Authority	Sport/Recreational Facilities	Industries & Service Trade
J	Zone J is a proposed service trade/Industries area that includes mixed uses like a light industries, transport services, service trades, commercial-and wholesale uses. Development should be sensitive towards nearby rivers. The sports grounds of Malmesbury are also located within this zone. May include forms of residential development. Allow for the establishment of small farmers.	X 15	X 15				X	X	X	X	X	X	X	X	X
K	Zone K consists mostly of industry-, business- and government functions with the expansion of the industrial area south of the N7. Heavy industries should only be allowed south of Bokomo Road.This area also represents the Industrial expansion to link Malmesbury and Abbotsdale south of the N7.							X	X	X	X		X	X	X
L	Zone L is located along Alpha Street and is identified as a mixed use zone allowing for a combination of commercial, service industries and social services. Represents the primary business node of Wesbank with opportunities for expansion at identified mixed use node.					X	X	X	X	X	X		X	X	X
M	Zone M has a medium to high density residential character. Allow for supporting social and neighbourhood orientated commercial services.	X	X	X 3	X	X	X	X 3	X 3	X	X	X	X	X	
N	Zone N has a high density residential character with an identified mixed use zone. Allow for supporting social and neighbourhood orientated commercial services.		X	X	X	X	X	X 2	X 2	X	X	X	X	X	
O	Zone O is characterised by medium to high density residential and government uses as well as sport grounds and educational facilities. Allow for supporting social and neighbourhood orientated commercial services.		X	X	X	X	X	X 2	X 2	X	X	X	X	X	
P	Zone P represents an integrated development area for mixed uses including residential, social services, light industrial, service industries, institutional and commercial uses.	X	X	X	X	X	X	X	X	X	X	X	X	X	X 7
Q	Zone Q is earmarked for integrated residential development with supporting social and commercial uses.	X	X	X	X	X	X	X	X	X	X	X	X	X	
R	Zone R is an area where low and medium density residential development occurs. Includes an existing cemetery with potential for expansion. Allow for supporting social and	X	X	X 3	X	X	X	X 3	X 3	X	X	X	X	X 9, 10	

	neighbourhood orientated commercial services. Allow for Infill opportunities. The zone has been identified as a restructuring zone for social housing. The area also provides opportunities for recreational facilities. Area located at the primary activity axis is earmarked for integrated business uses in order to strengthen the connection between Malmesbury and Wesbank.														
S	Zone S is a proposed integrated residential area with supporting social and commercial uses. Opportunity for expansion of institutional functions.	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	
	(1) Flats along activity Streets (2) Along activity streets and identified business and mixed use nodes (3) Along activity streets/corridors (4) At identified business node (5) Neighbourhood centre (6) Sport facility (7) Service trade and light industries (8) Service trade and warehouse where adjacent to industrial area to the south (9) Expand cemetery (10) Picnic area along Platteklip River (11) Service trade adjacent to CBD (12) At proposed future residential development nodes (13) Only service trade (14) At existing nodes (clubhouse/gate house) (15) Within rural development corridor	**Business Uses** e.g. shop, supermarket, restaurant, offices, service station **Place of Education** e.g. Schools, places of instruction **Professional Uses** e.g. offices like doctors, dentists, attorneys, architechts, engineers and town planners. **Secondary Business Uses** e.g. neigbourhood bussines uses such as house shops, small offices and home occupation. House taverns only to be allowed along activity streets in residential areas on discretion of the Municipality. **Secondary Educational Uses** e.g. Crèches/day care *Find description of proposed land uses for development zones in Annexure 4														

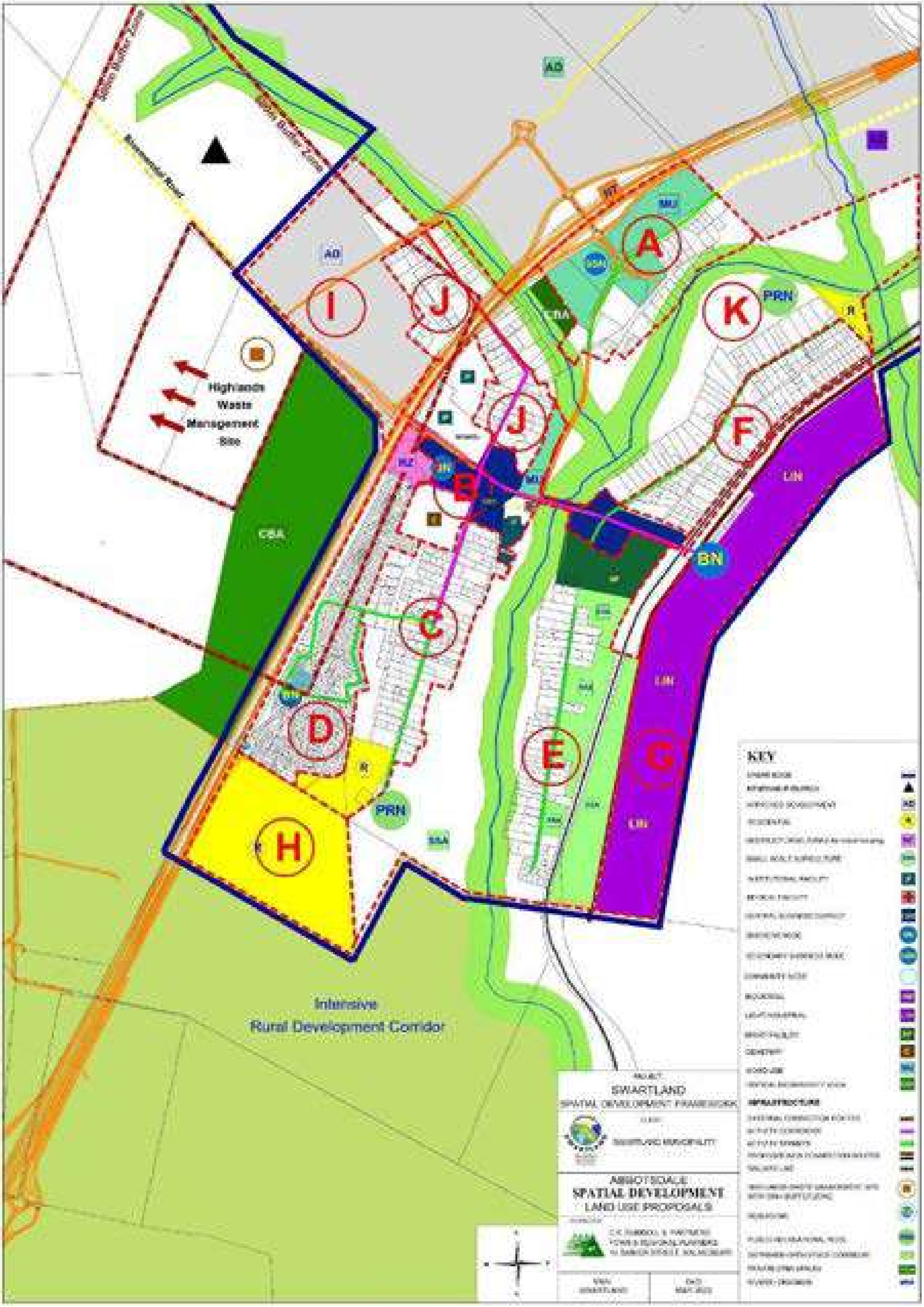


LAND USE ZONE PROPOSALS FOR ABBOTSDALE

Refer to the land use zone map for Abbotsdale: The urban area of Abbotsdale is divided into eleven (11) zones (areas with common features) and the recommended land uses for the different zones are listed in the table below:

ABBOTSDALE LAND USE ZONES		Low Density Residential Uses	Medium Density Residential	High Density Residential Uses	Secondary Educational Uses	Place of Education	Professional Uses	Business Uses	Secondary Business Uses	Place of Worship	Institution	Guest houses	Authority	Sport/Recreational Facilities	Industries & Service Trade
A	Zone A is a mixed use precinct around the N7 interchange with new access route to Abbotsdale, supporting commercial uses and residential densification. Promote tourism along river edge.	X	X	X 4 13	X	X	X	X 3, 4, 13	X 3, 4, 12 13	X	X	X	X	X 12	X 11, 13
B	Zone B represents the Central Bussines Distrtrict and is part of the town's activity corridor where mostly commercial and other compatible functions are supported to enhance the node.	X	X	X	X	X	X	X	X	X	X	X	X 1	X	X 14
C	Zone C has a low density residential character with infill development opportunities.	X	X	X 4	X	X	X	X 4, 15	X 4, 15	X	X	X	X	X	X 14
D	Zone D has a high density residential character which includes existing and subsidized housing development with a secondary business node. Allow for supporting social and neighbourhood orientated commercial services. Includes a restructuring zone for the provision of social housing.		X	X 4	X	X	X	X 3, 4	X 3, 4	X		X	X		X 14
E	Zone E has a low density residential character along the Diep River. Allow for densification, infill residential development and supporting social and neighbourhood orientated commercial services and support sport orientated uses. Area also includes surrounding open space along the Diep River where low density rural living uses are proposed. Proposed development of public space along the Diep River by establishing picnic spots, hiking trails and bike routes.	X	X	X 4	X	X	X	X 4	X 4	X		X	X	X 9	
F	Zone F has a low density residential character with infill development opportunities on the northern periphery.	X	X	X 4	X	X	X	X 4	X 4	X	X	X	X	X	X 14
G	Zone G provides opportunities for service industries, transport uses and industrial development along the Old Cape Road between Malmesbury and Abbotsdale. Also include small farming west of Old Cape Road.							X	X				X	X	X 10

ABBOTSDALE LAND USE ZONES		Low Density Residential Uses	Medium Density Residential	High Density Residential Uses	Secondary Educational Uses	Place of Education	Professional Uses	Business Uses	Secondary Business Uses	Place of Worship	Institution	Guest houses	Authority	Sport/Recreational Facilities	Industries & Service Trade
H	Zone H provides opportunities for residential expansion and lower density rural living opportunities to provide for a transition zone between the agricultural area and the urban area.	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X 14**
I	Zone I allows for urban agriculture and community projects as well as renewable energy like solar												**X**		**X**
J	Zone J is an existing low density residential area. No expansion of the area due to the sterilised setback around the Highlands Landfill site.	**X**	**X**	**X 4**	**X**	**X**	**X**	**X 4**	**X 4**	**X**		**X**	**X**		**X 14**
K	Zone K covers the surrounding open space along the Diep River where low density rural living uses are proposed. Proposed development of public space along the Diep River by establishing picnic spots, hiking trails and bike routes.	**X**	**X**		**X**	**X**	**X**	**X 4**	**X 4**	**X**		**X**	**X**	**X 12**	**X 14**
	(1) Expansion of cemetery (2) Recreation node along the river (3) At identified business node (4) Along activity streets/corridors (5) Sport facilities (6) Adjacent to business node (7) Neighbourhood centre (8) Sport facility (9) Sport fields and recreation (10) Light industries and service trade (11) Service trade and industries (12) Along Diep River (13) At identified mixed use nodes (14) Only service trade (15) At proposed future residential development nodes	**Business Uses** e.g. shop, supermarket, restaurant, offices, service station **Place of Education** e.g. Schools, places of instruction **Professional Uses** e.g. offices like doctors, dentists, attorneys, architechts, engineers and town planners. **Secondary Business Uses** e.g. neigbourhood bussines uses such as house shops, small offices and home occupation. House taverns only to be allowed along activity streets in residential areas on discretion of the Municipality. **Secondary Educational Uses** e.g. Crèches/day care *Find description of proposed land uses for development zones in Annexure 4														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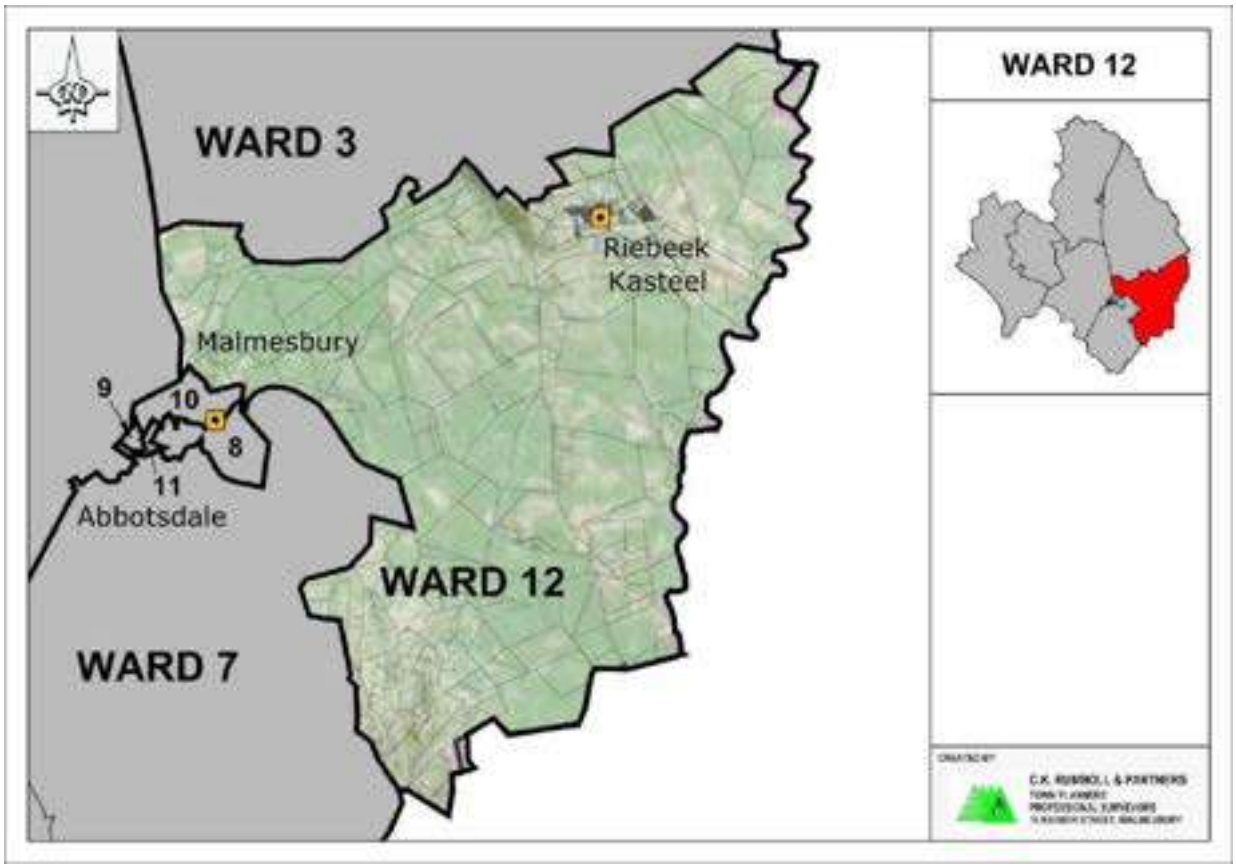
PRN
SSA
Intensive
Rural Development Corridor
KEY
SWARTLAND
SPATIAL DEVELOPMENT FRAMEWORK
ABBOTSDALE
SPATIAL DEVELOPMENT
LAND USE PROPOSALS

5.8 Ward 12 – Riebeek Kasteel and Rural Areas

The town of Riebeek Kasteel is located in Ward 12, which also includes large rural areas on the south eastern periphery of the Swartland which is boarded by the Berg River along its eastern boundary. This rural area contains various extensive as well as intensive production areas including grain, canola, olives, wine and stone fruit as well as dairies and intensive poultry farming.



5.8.1 Riebeek Kasteel

Riebeek Kasteel is situated approximately 20 kilometres northeast of Malmesbury and has access via the Paarl Road (Divisional Road 24/1) to the R45 that connects Malmesbury with Hermon. The R45 is connected to the N7 via the R311 (main route in the Riebeek Valley). The town is located along the slopes of Kasteelberg and is surrounded by some of the oldest vineyards in South Africa. The town's characteristic grid layout is encouraged by the surrounding vineyards along with intensive agricultural uses adjacent to the urban edge.

Objective 2: Proximate convenient and equal access

CONNECTIVITY			
	Elements	**No.**	**Proposals**
Protect	Roads:	1	Main traffic route: Kerk Street (Road 227).
		2	R315 connects with Moorreesburg and Hopefield in a western direction.
		3	R311 connects Moorreesburg and Riebeek Valley (recently upgraded and in good condition) and gravel roads to north (which connects Moorreesburg with Koringberg and Darling).
	Rail:	4	In 1929 the railway line was extended from Wellington to Porterville with stations in both Riebeek Kasteel and Riebeek West. The valley became more accessible for farmers to transport produce to markets and for people to travel between the valley and Cape Town.
	Pedestrian and cycle routes:	5	Pedestrian walkway development in Short Street.
Change	Roads:	6	Upgrade surrounding road networks including R311 (Main road 227) that runs through Riebeek Kasteel and provides access to the town.
		7	Support "use of air brakes in town prohibited" signs along the R311 in the towns of the Riebeek Valley to reduce the impact from heavy vehicle traffic.
	Activity Streets:	8	Develop guidelines for commercial facades, advertising signs and information signs along R311 and Main Road to blend in with local character and historical setting.
		9	Support mixed uses along the activity street that link the central area of Riebeek Kasteel with Esterhof.
	Pedestrian and cycle routes:	10	Improve mobility in town between Esterhof and the CBD along Kloof Street.
		11	Improve accessibility for disabled people.
		12	Develop guidelines for information and advertising signs.
		13	Upgrade public areas to support pedestrian movement and economic trade.
	""""""""	14	Support hiking trails.
		15	Provide an environment that supports recreational/sport events along R311 to enhance tourism (marathon, bicycle race).
Develop	Roads:	16	Upgrade roads.
		17	Liaise with Provincial Roads Department on ways to reduce speed and increase the visual quality of the R311 in town.
	Activity Streets:	18	Beautify and increase safety along the R311 and Main Road: - Reduce the width of the road and create parking areas; - Use raised pedestrian crossings, landscaping and street furniture.
	Pedestrian and cycle routes:	19	Develop surfaced and shaded pedestrian walkway along Main, Piet Retief and Kloof streets to integrate Esterhof and central Riebeek Kasteel.
	""""""""	20	Develop recreational hiking trails on Kasteelberg.
		21	Develop a cycle route in Riebeek Valley along R 311 between Riebeek Kasteel, Riebeek West and Ongegund.

Objective 2: Proximate convenient and equal access

PUBLIC UTILITIES			
	Elements	**No.**	**Proposals**
Protect	Water:	22	Additional reservoirs completed (2013) to increase storage capacity.
	Waste Water:	23	Limited flush sewer system.
		24	Combined Waste Water Treatment Works for Riebeek Valley supports future growth potential in the Valley (Ongegund, Riebeek Kasteel and Riebeek West).
	Electricity:	25	Eskom supplies electricity.
	Storm Water:	26	Storm water system consists of open ditches and channels and is inadequate, particularly in Esterhof.
	Waste:	27	The Swartland Municipality weekly collects waste door to door and delivers it to the Highland landfill. The closed (2014) landfill site in Riebeek Kasteel, adjoining Esterhof, requires rehabilitation. A Waste Transfer facility with a total of 5 skips is located north east of Riebeek Kasteel on Erf 2239, south of Zonquasdrift road.
Change	Future Demand:	28	Ensure bulk infrastructure planning is in line with SDF growth proposals.
		29	Align locality of infrastructure features with SDF proposals (decrease impact on the landscape qualities).
	Water:	30	Extend water provision to all properties.
		31	Fix and replace leaking reservoirs.
	Waste Water:	32	Encourage replacement of septic tanks, sewerage suction trucks do not have capacity and the new sewerage works is completed.
		33	Ensure combined Waste Water Treatment Works for Riebeek Valley supports future growth potential in the Valley.
	Electricity:	34	Provide adequate street lightning.
		35	Upgrade obsolete electrical infrastructure (scheduled by Eskom).
	Storm Water:	36	Improved storm water system in Esterhof to address regular flooding.
	Safety:	37	Provide a satellite Police Station and Fire Station for Riebeek Kasteel.
Develop	Future Demand:	38	Identify areas for future expansion of bulk infrastructure.
	Storm Water:	39	Upgrade the storm water system to a piped system.
		40	Upgrade 12 km of gravel road.
		41	Address regular flooding in Esterhof.
	Safety:	42	Support effective use of natural resources i.e. alternative energy, water wise developments.
		43	Support harvesting of rainwater in tanks on residential erven and use of alternative energy sources.

Objective 1: Grow economic prosperity and facilitate economic sector growth and
Objective 4: Protect and grow place identity and cultural integrity

SPACE, BUILT			
	Elements	**No.**	**Proposals**
Protect	Heritage and Tourism:	44	Historical farms include Kloovenburg, Allesverloren, Zonquasdrift and Vlysbank (today known as Du Vlei). The Hugenot farmers began the cultivation of vineyards. In 1855 De Oude Church was the first church built in Riebeek Kasteel.
		45	Riebeek Valley was discovered in 1661 during a European expedition in search of gold.
		46	The CBD has several heritage buildings and high tourism potential.
	Residential:	47	Riebeek Kasteel follows a compact grid pattern around the market square and can be divided into four main urban areas: A. Low and medium density residential uses along the foothills of Kasteelberg and east of Church Street; B. Town centre, a combination of residential and commercial uses; C. A lower density residential area between Esterhof and the urban centre (and home to the wine cellar); D. A high-density residential development, Esterhof, east of the urban centre.
Change	Heritage and Tourism:	48	Ensure new developments are sympathetic to heritage buildings and the local character is protected.
		49	Identify Heritage Streets and apply heritage overlay zone.
		50	Compile guidelines for future development.
		51	Develop a tourism strategy for Riebeek Valley to identify focus areas.
		52	Support Agri-tourism based development.
		53	Provide skills development in agri- tourism.
		54	Market Riebeek Kasteel as part of the Riebeek Valley tourism region and one of the main tourism towns in the Swartland.
	Residential:	55	Increase density by 2027 from the current 8.2 units per hectare to 8.5 units per hectare in Riebeek Kasteel.
		56	The low-density rate preserves the unique identity and character of Riebeek Kasteel. Higher residential developments and mixed uses should be encouraged along activity streets in the town.
		57	Include farmworkers on housing waiting list.
		58	Identify land for GAP housing, including farm owners that would like to create agri villages.
		59	Keep housing waiting list up to date.
	""""""""""""	60	Develop areas in accordance with availability and capacity of infrastructure and services.
		61	Enhance integration of CBD with Esterhof.
	""""""""""""	62	Support densification through Subdivision, Infill development and Renewal and restructuring.
	Commercial:	63	Support development of CBD and secondary nodes and neighbourhood commercial facilities.
		64	Support integrated development and mixed uses in neighbourhoods.
	Industrial:	65	Support agricultural service industry related development.
Develop	Heritage and Tourism:	66	Support and improve tourism infrastructure e.g. local tourism information office, tourism signs, and improve the standard of tourism facilities.
		67	Support accommodation facilities for tourists in rural and urban areas.
		68	Develop educational hiking trails in natural surroundings which include Kasteelberg. Market these features.
		69	Beautify town at the entry points to support tourism industry.
		70	Support the development of a cycle route along the R311 between the towns in the Riebeek Valley.
		71	Support effective control of the extensions to or demolition of heritage buildings
	Residential:	72	Provide 171.7ha in Riebeek Kasteel for future growth over next 20 years, of which 67.3ha is vacant land as identified per Vacant Land Audit.
		73	Provide for future subsidised housing demand in Riebeek Kasteel. Government residential developments, supported by Human Settlement programmes, will be supported.
		74	Develop vacant land between Esterhof and central Riebeek Kasteel.
		75	Provide adequate land for different housing topologies.
		76	Provide and support development of housing for retirees.
		77	Support the development of residential opportunities (FLISP) for farm workers in Zone J.
		78	Provide residential opportunities for serviced sites that can be upgraded with top structures.
		79	Support integrated housing opportunities (including IRDP) in Zone G and L.
		80	Provide opportunities for small farmers.
	""""""""""""	81	Plan for expansion of bulk infrastructure to support future residential growth.
	""""""""""""	82	Allow for minimum subdivision size of single residential erven of 500m² and rural living erven in identified zones of 1000m² and 2000m² respectively.

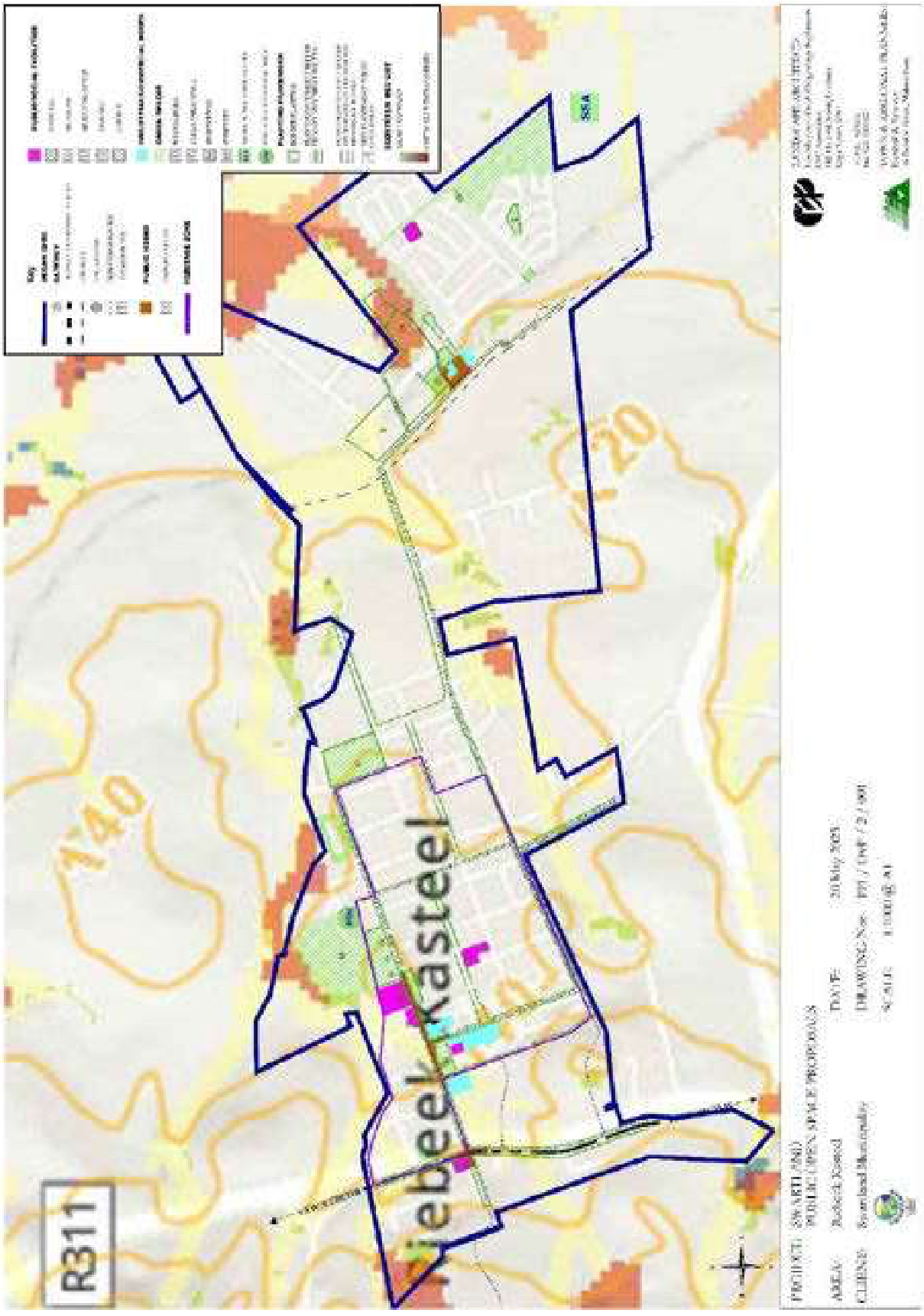
	Commercial:	83	Support secondary node in Esterhof at intersection between Lelie and Angelier Streets.
		84	Support a smaller node along Kloof Street.
	Industrial:	85	Support expansion of industrial area along Divisional Road 1154 (eastern Riebeek Kasteel).
		86	Encourage development of smaller scale agri -processing/packaging industries (allow value adding of products close to the source).
		87	Strengthen Kloof Street (Peter Cruythoff Street) as the access road to the industrial area.

Objective 5: Protect ecological and agricultural integrity

PUBLIC INSTITUTIONS			
	Elements	**No.**	**Proposals**
Develop		88	Support the development of facilities and social functions including a school, crèche, Thusong centre, library and a clinic. Development of a crèche on a portion of Erf 1839 in Zone J.
		89	Promote the development of a community hall.
		90	Support the development of new school in Zone I.

Objective 3: Sustain material, physical and social wellbeing

SPACE, NATURAL			
	Elements	**No.**	**Proposals**
Protect	Nature and Conservation:	91	Riebeek Kasteel is surrounded by high potential agricultural land that produces grapes, olives and deciduous fruit.
		92	Kasteelberg is a prominent landscape feature of Riebeek Valley.
	Waterways		A water course runs along the northern boundary of the settlement. A buffer of 32 meter no development buffer, measured form the bank of the river, should be adhere to and riverbank vegetation should be controlled. Particularly where the watercourse cross the industrial precint in the north east.
	Public and Private Open Spaces:	93	Central square in Riebeek Kasteel CBD.
		94	Parking lot in front of the Dutch Reform Church.
Change	Nature and Conservation:	95	Develop a Conservation management plan for the area.
		96	Formalise conservation status of nature areas earmarked for conservation.
		97	Conserve Kasteelberg as part of the Open Space corridor.
		98	Allow limited development opportunities related to tourism and recreational uses to improve the Kasteelberg's accessibility and management.
		99	Support effective use of natural/open space areas by communities.
		100	Create an Open Space network in Riebeek Kasteel and the Riebeek Valley.
		101	Design interactive development interfaces along open space network (developments face open space networks).
	Public and Private Open Spaces:	102	Upgrade market square between Plein and Main Streets.
		103	Develop guidelines regarding applicable architectural style, scale, height of built structures.
		104	Create an open space network through town.
Develop	Nature and Conservation:	105	Determine development (including agriculture) line along Kasteelberg slopes.
		106	Identify conservation areas within urban areas.
		107	Identify a heritage route.
		108	Enter into a stewardship programme with Cape Nature to manage conservation areas.
		109	Develop hiking trails, mountain bike trails, events facilities and venues.
		110	Plant trees to link to open spaces and to provide shade.
		111	Plant trees to improve visual attractiveness of Esterhof (higher density neighbourhood).
	Public and Private Open Spaces:	112	Promote the development of a new cemetery.

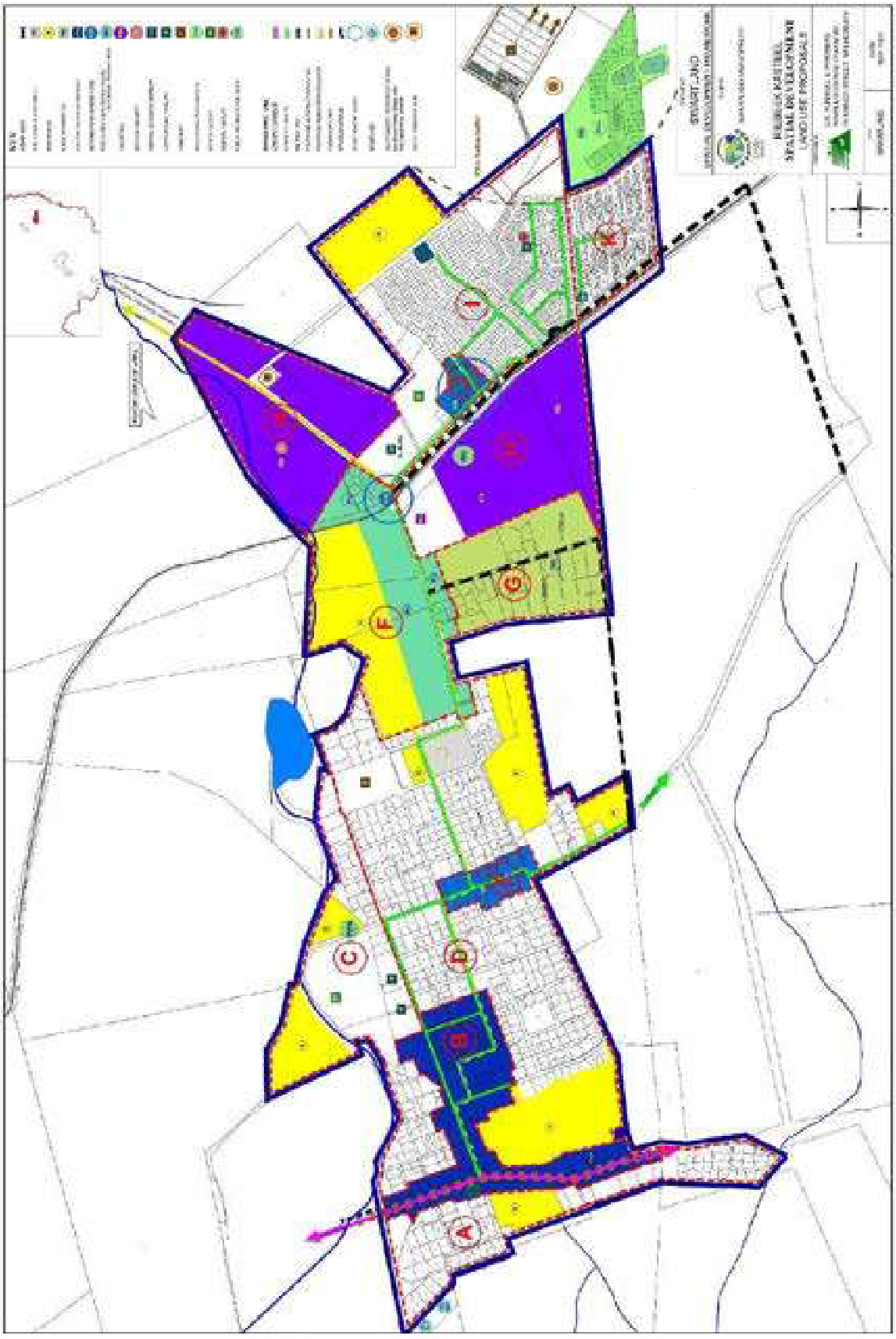

R311
Riebeek Kasteel
140
120

LAND USE ZONE PROPOSALS FOR RIEBEEK KASTEEL

Refer to the land use zone map for Riebeek Kasteel: The urban area of Riebeek Kasteel is divided into eleven (11) zones (areas with common features) and the recommended land uses for the different zones are listed in the table below

RIEBEEK KASTEEL LAND USE ZONES		Low Density Residential Uses	Medium Density Residential	High Density Residential Uses	Secondary Educational Uses	Place of Education	Professional Uses	Business Uses	Secondary Business Uses	Place of Worship	Institution	Guest houses	Authority	Sport/Recreational Facilities	Industries & Service Trade
A	Zone A has a low density residential character. Due to area's historical character and location of Historic Church in this zone, development is sensitive.	X	X		X	X	X	X 9	X 9	X	X	X			
B	Zone B represents the Central Business District with business and other relevant uses.	X	X	X	X	X	X	X	X	X	X	X	X	X	X 2
C	Zone C represent sports function and educational uses with potential for infill residential development.	X	X	X	X	X	X	X 1, 9	X 1, 9	X	X	X	X	X	
D	Zone D consists of a residential as well as institutional character with government functions (cemetery). There are mixed density residential uses with opportunities for infill development.	X	X	X 1, 9	X	X	X	X 1, 9	X 1, 9	X	X	X	X	X	
E	Zone E represents a secondary business node with tourism based uses. Expansion of the existing node should be focused on the tourism market.	X	X	X	X	X	X	X	X	X	X	X	X	X 7	X 2
F	Zone F is earmarked for residential infill development supported by mixed uses. This zone is earmarked for integrated development between Esterhof and central Riebeek Kasteel. Mixed density residential development with commercial opportunities along activity axis and at intersection of Kloof &Lelie Streets is proposed. Also allow for Place of Education in this zone.	X	X	X	X	X	X	X	X	X	X	X	X	X	X 3
G	Zone G has a low density residential character with residential properties larger than 1000m².	X			X							X			
H	Zone H represents the industrial zone with the opportunity for future expansion. Limited commercial opportunities to be supported. Development should be sensitive towards water streams.					X	X	X	X	X	X		X	X	X
I	Zone I has a medium and high residential character with supportive social infrastructure. Area allows for expansion for GAP opportunities.		X	X 1	X	X	X	X 1, 5	X 1, 5	X	X			X	

J	Zone J is a secondary node with business- and other relevant uses.			**X**		**X**	**X**	**X**	**X**	**X**	**X**		**X**		**X 2**
K	Zone K is earmarked for residential development opportunities for high density housing and mixed use.	**X**	**X**	**X**	**X**	**X**	**X**	**X 1, 5**	**X 1, 5**	**X**	**X**	**X**		**X**	
(1) Along activity streets/corridors (2) Service Trade (3) Service Trade and Light Industries (4) In accordance with historical character (5) At identified business nodes (6) Aimed at tourism (7) Sports facility (8) At identified mixed use node (9) At proposed future residential development nodes		**Business Uses** e.g. shop, supermarket, restaurant, offices, service station **Place of Education** e.g. Schools, places of instruction **Professional Uses** e.g. offices like doctors, dentists, attorneys, architechts, engineers and town planners. **Secondary Business Uses** e.g. neigbourhood bussines uses such as house shops, small offices and home occupation. House taverns only to be allowed along activity streets in residential areas on discretion of the Municipality. **Secondary Educational Uses** e.g. Crèches/day care *Find description of proposed land uses for development zones in Annexure 4													



5.8.2 Rural Areas of Ward12

Paardeberg

Topology, Geology and Habitat

The Paardeberg, located mainly in Ward 7 and 12 of the Swartland, has a panoramic view from its granite dome of Table Mountain, Table Bay and False Bay.

The Paardeberg consists of several kloofs of which Aprils-, Sieberts-, Botter-, Brouwers-, Modder- and Lemoenkloof are in the Swartland while Water- and Theronskloof are located in the Drakenstein municipality.

The Paardeberg, Paarl, Groenberg, Klein Drakenstein and Haweqwa mountains form part of a group of granite domes that rose up on the Cape Flats plain of Gondwana. Around the granite domes the mountains are made up of hard sand stone, quartzite and softer sandstone. The outcrops of sandstone quartzite provide siliceous sandstone which results in vegetation devoid of trees.

Sedimentary shale, white Witteberg quartzite and volcanic basalt form leached soil. This soil combined with sandstone reduces it to acidic, nutrient-poor soil, deficient in nitrogen and phosphorous. This is a challenge to most plants, but localised species have evolved to cope with the soil conditions.

The geological and climate profile of the Western Cape created rare botanical opportunities for species which have adapted and colonised in the Paardeberg. The movement of the earth's crust has exposed underlying shale and granite intrusions, creating habitats with distinct characteristics:

- Malmesbury shale, with its high sedimentary content, provides good drainage.
- Granite-based soils of clay and sand layers provide alternating conditions of drainage and retention.
- Gravel and iron-based soils with high clay content provides good water retention.

Climate and winds

Due to its proximity to the oceans, the Paardeberg experiences mild winters and moderate summers.

The Atlantic's icy Benguela current flows up the west coast. North-westerly winds bring cold fronts and winter rains delivering up to 1800mm rain annually to coastal ridges. Snow does not last long and frost is not common. The Indian Ocean's warm Agulhas current from the equator flows down the south coast. Minimal precipitation from the cold current entrenches arid summer heat. While the prevailing summer winds in the Western Cape are strong south-easterly winds, a gentle-south westerly wind predominates in the Paardeberg, cooling the grapes and fynbos.

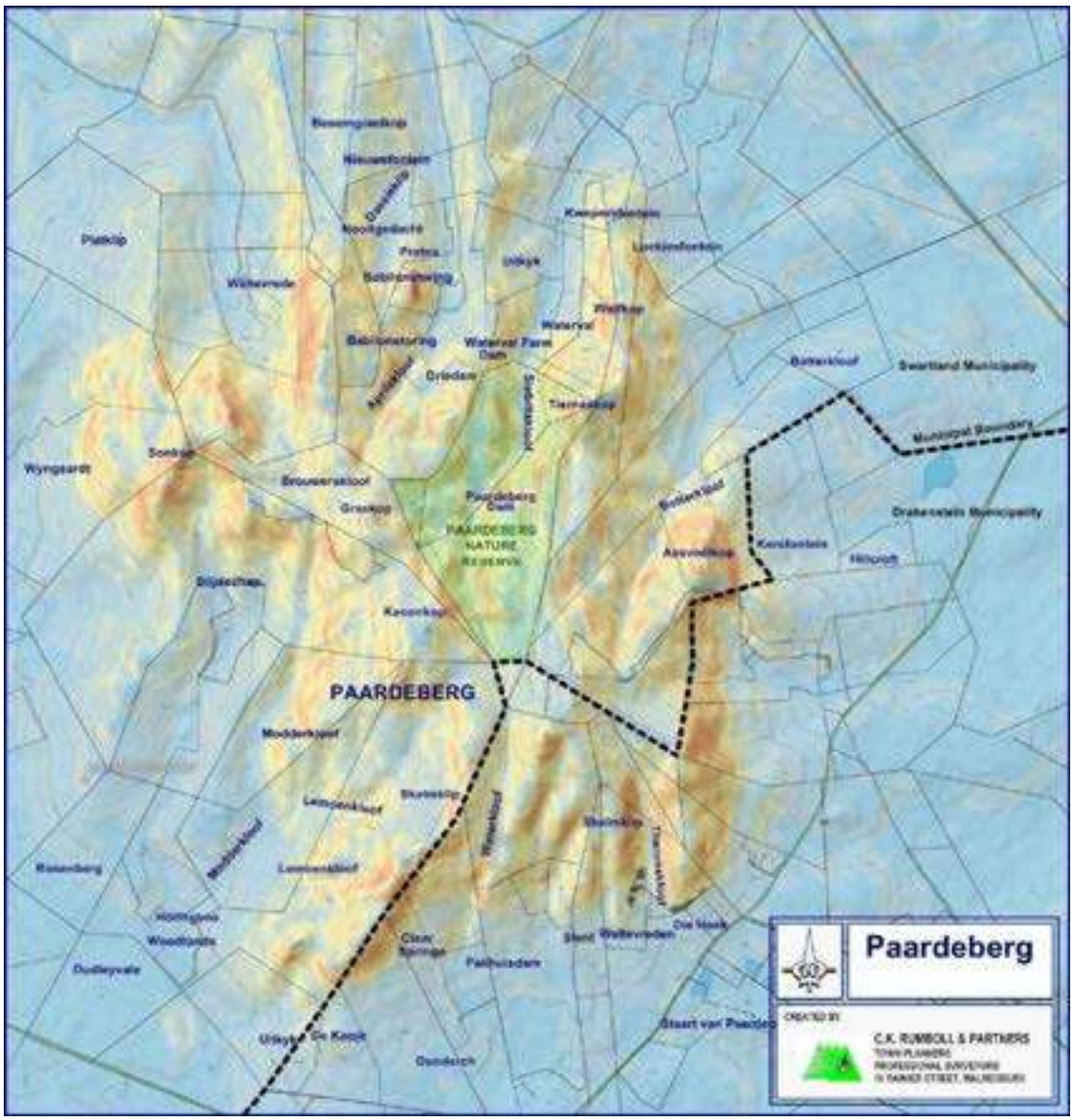
The summer days give way to strong south-easterly winds that cool off the coast and bring the clouds which precipitate 500mm of life preserving rain.

Flora, Fire and Pollination

A narrow transitional zone between two different vegetation types or biomes is called ecotone. Evolutionary pressure on plants growing in such zones is very high, since the plants have to adapt to both biomes. Ecotones occur frequently given the alternating sedimentary strata.

Speciation and a stable climate combined with prolific localised species converge to enhance biodiversity.

The soils in the Paardeberg support two major plant communities or biomes- true fynbos types and Coastal Renosterveld. The Paardeberg situated as it is among Boland Granite Fynbos and Atlantis Sand Fynbos and Swartland Granite Renosterveld is thus just such a transitional zone.



Protecting the Biomes

The biomes are sensitive to sudden and impact changes if they are beyond the vegetation's ability to adapt. Working the land should be considered carefully and planned with consideration:

Soil conservation	During major storms, once soil is saturated, surface runoff follows and causes sand to move down the slope. This is how ideal sand for mining, hill wash and colluvial sand moves downslope. Agricultural practises and mining on slopes that will result in the moving of sand downslope should be prevented.
Usable areas	Transformed or fallow agricultural land that has been previously ploughed could be mined or cultivated. The rehabilitation of mined land to original state should be possible and should be a prerequisite.
Soil depth	Sand depth has to be sufficient to protect topsoil. (Mining: the upper 50cm of topsoil must be pre-stripped and stockpiled for replacement; Agriculture: soil depth should be considered).
Topography (& location of sand relative to source or fields)	Sand on steep granitic slopes is generally poorer quality sand because of the higher content of clay and dust sized particles in the sand. The highest quality sand deposits are located on relatively flat areas. A further consideration is that It is more expensive to rehabilitate steep slopes as contours have to be constructed to prevent soil erosion.
Biodiversity	Undisturbed natural areas should not be considered for sand mining or agricultural cultivation. In the Swartland most of the remaining natural vegetation has been mapped as Critical Biodiversity Areas. These areas consist of Critically Endangered or Endangered Ecosystems e.g. Atlantis Sand Fynbos (FFd4), Swartland Granite Renosterveld (FRg2) or Swartland Shale Renosterveld (FRs9).
Water courses	Sand mining areas and agricultural fields should be more than 32 metres from rivers and watercourses to prevent sedimentation.
Socio-economic environment	Impacts that need to be considered are: Noise and dust: This can be easily mitigated. Visual impact: Activity on a relatively flat farm field (apart from directly next to roads) is less intrusive than activity on hill slopes. Agricultural practises: Intensive agricultural practices versus less intensive agriculture (e.g. grapes). Tourism: Areas designated for tourism. Access roads: Consider use, type of road (provincial tar road vs provincial dirt road), transition via a single farm or several farms. Divisional or Minor gravel roads increased usage by trucks. Trucks cause higher wear and tear. Mitigate by requiring a contribution towards the cost of maintaining gravel roads.
Legislative frameworks	Section 10 (2) of the MPRDA states: *"If a person objects to the granting of a prospecting right, mining right or mining permit, the Regional Manager must refer the objection to the Regional Mining Development and Environmental Committee to consider the objections and to advise the Minister thereon."* Objections from other government departments, including Municipalities, are taken seriously by the DMR. It would be preferable for the Swartland Municipality to object to an inappropriate application before the MPRDA and NEMA approvals are granted, rather than being required to deal with it as part of a subsequent land use application process.

5.8.3 Proposal Rural Areas of Ward 12

The proposals below are ward specific. Any proposal that extends across ward boundaries was documented as part of the regional proposals.

Proposals are grouped according to the five objectives. Proposals per objective differentiate, where appropriate, between agriculture and tourism.

Objective 1: Grow economic prosperity and facilitate economic sector growth [Economic Environment]

	Agriculture	Tourism
Commercial	Support development of supportive commercial infrastructure on farms along routes, including farm stalls and agri-processing, wine tasting, Petro ports to support transport network and tourism routes e.g. function venues on farms like on Kloovenburg and Het Vlok Kasteel.	
	Promote festivals building agricultural brand i.e. annual Olive Festival and Shiraz Festival and Malmesbury Agricultural Show. Combine these festivals with a Mediterranean theme.	
	Optimise locality and R45 & N7 link to access airport.	
	Support both extensive agricultural farm units (600ha – 800ha)/ (500+ha) in northern section of Ward 12 & smaller intensive agriculture, irrigation farms (grapes, olives and stone fruit – medium & high potential). Capitalise on rainfall of 500 – 600mm per annum and practise intensive agriculture.	
Industrial	Limited Building Sand along western boundary of Ward 12.	
	Develop small & service industries, agriculturally based, in Riebeek Wes. Support packaging and processing on intensive production farms (vineyards, stone fruits, olives and vegetables).	Larger agri-processing plants to be established, with Malmesbury as the main industrial town in the Swartland. Malmesbury as industrial town.
Residential	Develop subsidized housing, in future, in Riebeek Kasteel.	
R46	Support the proposed upgrading of the Zonkwasdrift road with a possible new connection to the R46 to support the intensive agricultural uses within this area. Capitalise on R46 – N7 link currently under construction.	

Objective 2: Proximate convenient and equal access [Economic Environment]

R45 & 46	Strengthen link to Drakenstein, Witzenberg and West Coast: link road north of Malmesbury under construction: R45 with N7 and R45 to Hopefield/Saldanha IDZ; link to Drakenstein and Ceres (R45 & 46). Maintenance of road network.
R311	Strengthen as regional link with Ward 3 through Riebeek Valley to R45 (West Coast) across N7 at Moorreesburg.
Rail	Promote special train trips between Paarl and Porterville (Grain and Canola fields, vineyards, orchards, rolling hills and railway line).

Objective 3: Sustain material, physical and social wellbeing [Social Environment]

Utilities	Provide combined WWTP for Riebeek Valley in Riebeek Kasteel. Provide adequate storage facilities for potable water in the Riebeek Valley. Develop storage facilities for potable water. Install Street lighting along R311 between towns in Riebeek Valley.

Objective 4: Protect and grow place identity and cultural integrity. [Built Environment]

Administrative	Promote Riebeek Wes as local agricultural service centre. Enhance Malmesbury as main service centre.
Heritage tourism route	Include significant heritage farms and properties into potential heritage tourism route: Farm Kloovenburg. Protect all and promote some of the 97 rural sites surveyed in the Swartland Rural Heritage Survey 2014 –in Ward 12: Grade 3 A (high local significance) – 5, Grade 3 B (some local significance) – 66, Grade 3C (limited local significance) – 24

Objective 5: Protect ecological and agricultural integrity [Biophysical or Natural Environment]

Natural	Delineate development line along foot of Kasteelberg and Paardeberg mountains (conservation & landscape).	
Biodiversity	Protect Kasteelberg, Paardeberg and Paardeberg Nature Reserve and Porseleinberg as Core 1 and 2 areas.	Promote a Swartland mountain bike race around Kasteelberg and surrounding areas. Promote the development of hiking trails in and around Tontelberg, Kasteelberg, and Porselein towards Paardeberg in Ward 12.
	Enhance extensive agricultural production area and areas along Berg River and Riebeek Valley, which is an intensive irrigation area.	Protect Riebeek Valley landscape: Riebeek mountains, Berg River, valley plains, vineyards, orchards and rolling grain and canola fields (and intensive cultivation (irrigation) practices along Riebeek Valley).
Waterways	Create open space network along Berg River (linking to Riebeek Valley).	Support development of accommodation & support services to Berg River Canoe Marathon & tourism along Berg River and create opportunities for Water sports, fishing and resorts.
		Protect Berg River as landscape resource.

CHAPTER 6: Development Proposals: Rural & Regional – Cross Border & Climate Change

The Swartland region's identity is defined by its landscapes, natural environment and agriculture. The rural spatial framework focuses on its natural resources: Water, Soil (Land), Minerals, Vegetation – Fauna - Ecosystems, Air - Wind, Sun and Connectors (the only man-made resource). The framework considers *Natural Disasters*, *Opportunities* and *Risks* for each natural resource

6.1 Swartland Landscapes and Spatial Policy Guidelines

The spatial patterns in the Swartland originate from the form of the landscape and are further shaped by man-made features. The Swartland, with its distinctive landscape, forms part of the West Coast region, stretching from Atlantis in the south to Papendorp in the north, and located west of the Cape Fold Mountains or the Groot Winterhoek Mountains. The Berg River is the main waterway in the region. A description of these landscapes, either natural or man-made, in the Swartland region and some development guidelines follow:

Spatial guidelines, on how to treat the Swartland landscape and the value of the landscape are outlined in this chapter together with the vulnerability of the area and receiving community. The matrix below provides an overview of the value of the different resources.

Landscapes / Value	Wilderness: Coastal and Dunes	Wilderness: Mountains	Waterways and Connections	Connection Routes and Corridors	Agricultural Landscape	Social Focus and community	Cultural and historical, & Routes
Expresses Sense of Place/ Place Making	X	X	X			X	X
Conserve natural vegetation and habitat and provide ecosystem services,	X	X	X				
Counter Climate Change,	X	X					
Attract Tourism	X	X	X		X		X
Represent an Economic resource &present opportunities,				X			X
Enable Access and Mobility.				X			
Secure Food					X		
Generate Employment					X		X
Offer safety and security						X	

The Spatial guidelines are set out according to the natural resources Swartland is home to Water, Soil, Natural vegetation, Wind, Sun as well as Connectors that are man-made. An environmental management framework provide directives to mitigate impacts.

6.1.1 Spatial Integration with Neighbouring Municipalities

Bounded by the Cape Metropolitan Municipality (CPT) to the south, the Drakenstein Municipality (WC023) on the south east, the Bergrivier Municipality (WC013) along the north east and the Saldanha Municipality (WC014) on the north.

The Swartland is well located in terms of the West Coast Region and the Cape Metropolitan area and its related markets with good connectivity through existing well developed transport networks that include the R27 along the West Coast, the N7 as the main route to the Northern Cape and Namibia and the R46 and R45 to the Boland and the Witzenberg regions. The waterways, conservation and agriculture creating high levels of connectivity, provide various options for economic development in the area.

- The Berg River forms the eastern boundary of the Swartland and supports various agriculture and tourism activities along the corridor which boarders the Berg River and Drakenstein Municipality;
- The Diep River runs from the Riebeek mountains, across the northern tip of the Cape Metropole into the Atlantic Ocean supports agriculture and historic transport connections.
- Agriculture is one of the main economic sectors in Swartland and connects with most of the surrounding municipalities. The cross-boundary activities include extensive agriculture towards the north (Saldanha) and north east (Bergrivier municipality) and more intensive forms of agriculture along the south eastern areas that border Drakenstein. A higher intensity of agricultural uses, such as intensive poultry farming, occurs on the southern boundary and into the Cape Town metropolitan area with high connectivity to the markets in the metropole. This intensive rural corridor to the south is further supported by various higher density residential smallholding areas.
- The West Coast Conservation Corridor that is proposed along the West Coast runs from the West Coast National Park on the northern boundary (Saldanha Municipality) along the Swartland coastline towards the south to the Blaauberg Conservancy in the Cape Metropolitan area. This is an important conservation corridor along the West Coast and will provide a conservation link between the three municipal areas.

The following composite spatial plan illustrates the strategic location of the Swartland and visualizes the spatial integration and opportunities provided by the Swartland.

Connectivity and Mobility

Connectivity relates to the movement network in and between towns and includes all transport, cycling and pedestrian routes.

Developing the N7 into a dual carriageway from the Cape metropole to Malmesbury will increase accessibility.

Other routes planned are the proposed link road between the N7 and the R45 (Hopefield/Malmesbury and Paarl) to the north of the urban area of Malmesbury as well as a proposed link road between the R302 (Durbanville/Malmesbury) and the R45. Accessibility improves social integration and enhances accessibility to commercial and tourism activities.

The movement networks in towns need to be planned in accordance with future developments. Possible alternative routes need to be spatially accommodated and existing routes need to be strengthened.

Freight Routes

The locality of the Swartland as connector to Namibia in the north, the Winelands and Witzenberg districts in the east, cause various freight routes to dissect the region. These freight routes are:

- N7 as gateway to Namibia and the north. Its location provides opportunities in Malmesbury and Moorreesburg for distribution and freight related industries;
- R27 as link between Cape Town Harbour and the West Coast IDZ at Saldanha;
- R45 as link between the West Coast/ Saldanha and the N7 and the R45/R46 towards the Cape Winelands, Ceres and the N1.

Public transport

Public transport is limited to the local bus and taxi services which provide the only options for people in smaller towns to access economic opportunities in the larger centres in the Swartland. Expansion of this service, considering the provision of the My City bus service from Cape Town along the N7 to Malmesbury is under consideration. Swartland will need to take a pro-active role in identifying possible stops for this service in the Swartland along the N7 that will allow more people access to this service.

Airport

The approved airport is on the boundary of City of Cape Town and Swartland. The dual carriage N7 increases the potential for the establishment of an economic node around the airport to benefit Swartland. The N7 slipway infrastructure enables the establishment of such a node that could become a transport, training and recreation node.

Conservation Areas

The Riverlands conservation area is part of a biosphere area promoting conservation along the West Coast.

The Paardeberg is another such an area located across three municipalities: Swartland, Drakenstein and City of Cape Town.

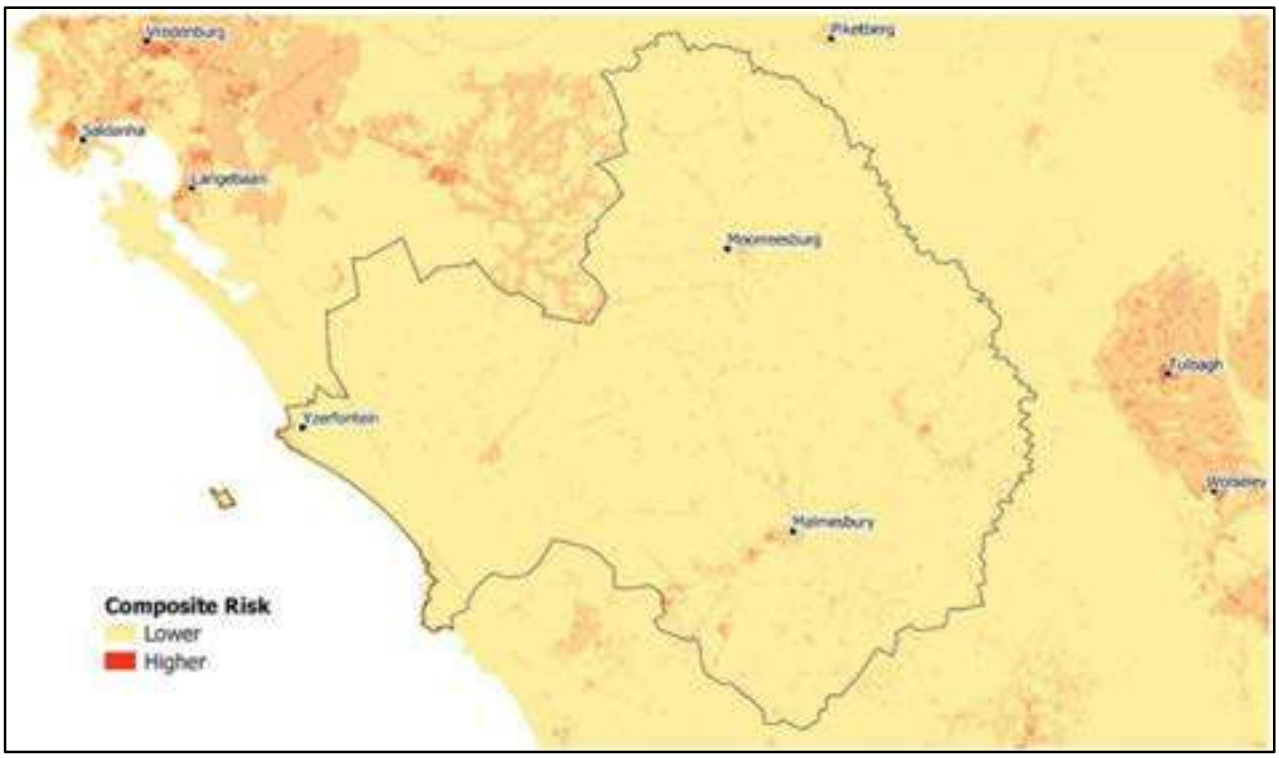
Water Ways

The Berg River is a water way being part of Swartland, Bergrivier and Drakenstein Municipality. The Misverstand dam is share by Swartland and Drakenstein.

6.2 Regional and Rural Proposals

The composite environmental risk and vulnerability map highlights areas in the Swartland where compound risks threaten people, their livelihoods and/ or infrastructure. The environmental risk and vulnerability map illustrates the nature of the risks as the interplay between hazards, vulnerability and exposure. Hazards are *impact on the environment* or *environmental threats* and vulnerability and exposure of the Swartland Community are measured against governance and municipal management, are illustrated in map below:

Map 3: Environmental Risk and Vulnerability to environmental threats in Swartland (combining socio-economic and governance indicators)



Overall, Swartland is evaluated to be at a lower risk and less vulnerable given its natural resources and its governance.

6.2.1 Water/ Hydrology

6.2.1.1 Natural Resource: Surface (Rivers), Ground Water and Sea

Surface and underground water and the sea constitute the hydrological resource. Swartland is home some rivers, boreholes and aquifers as its water sources.

Water management Areas or rather the Water Control Areas in the Swartland Municipal area are as follows:

- The **Yzerfontein Subterranean Government Water Control Area** was declared during February 1990, located within Tertiary/Quaternary drainage region G20. This area is excluded from any General Authorization for groundwater abstraction.
- The lower part of the **Lower Berg River Valley Subterranean Government Water Control Area** was declared during September 1976 within the Tertiary/Quaternary drainage region G10 and G30.

Map 4: Swartland Water Control Areas

The topography of the Swartland is characterized by an elevated eastern edge formed by the existing mountains, which slope down across the inland plains and valley systems towards the coastal plain and Atlantic Coastline. The general drainage direction in Swartland is therefore in an east-to-west direction.
The primary hydrological systems in Swartland are the Berg River and Diep River System. Smaller rivers and streams feed into these rivers and drain towards the ocean within these primary hydrological systems. There are a number of man-made dams located within the river networks through the Swartland municipal area, which are used for bulk water reticulation purposes for domestic use and agricultural irrigation. The most prominent of these dams in the Swartland is the Misverstand Dam, in the Bergrivier.

The Western Cape population reached 3.5 million in 1986, the saturation point for the available water sources.

Rivers and River systems

The Berg River and Dieprivier are the two main river systems in the Swartland, with the Berg River the most prominent river which also form the eastern and northern borders of the Swartland jurisdiction. The NO Go River that flows through Moorreesburg towards the Misverstand Dam in the Berg River. The Diep River flow through Malmesbury in a southerly direction and enters the sea at Milnerton, with the Swart and Groen Rivers two prominent branches.

Other rivers include: Swart and Groen Rivers (Diep River tributaries), Dwars, Modder, Louwskloof, Brak, Krom, Riebeeks, Doring, Vis, Sandspruit, Moorreesburgspruit, Matjies, Sout, Soutkloof.

All these rivers with all their tributaries, riverbanks and floodplains provide for vulnerable aquatic biodiversity and habitats are central to human wellbeing and economic development.

Wetlands (Freshwater ecosystems) within Swartland include Burgerspan, Saltpan, Dwars, Rooipansfontein, Koekiepan and Radyn are relevant wetland areas.

A range of different wetland types occur within the Swartland, including those formed where the Grootwater aquifer (which extends from Yzerfontein to Modder River) reaches the surface and forms pans, vleie or perennial springs. The Yzerfontein and Darling pans, and the wetlands (Vlei) behind the primary dunes on the northern boundary of Yzerfontein are all important coastal wetlands.
Wetland and their surrounding buffers containing natural vegetation provide for various valuable ecological function:

- Improve water quality (filtering & purification, retention of sediment, conservation of coastlines & management of erosion).
- Improve water quantity (reduce peak floods & storage of flood waters, support river flow during dryer months, release and recycling of groundwater).
- Provide wildlife habitat (provide habitat for reptiles, birds, fish & mammals).

Aquifers and Groundwater: Groundwater plays a crucial role in the area from a socio-economic and ecological perspective and it therefore needs to be managed and protected in an appropriate manner by informed decisions making.

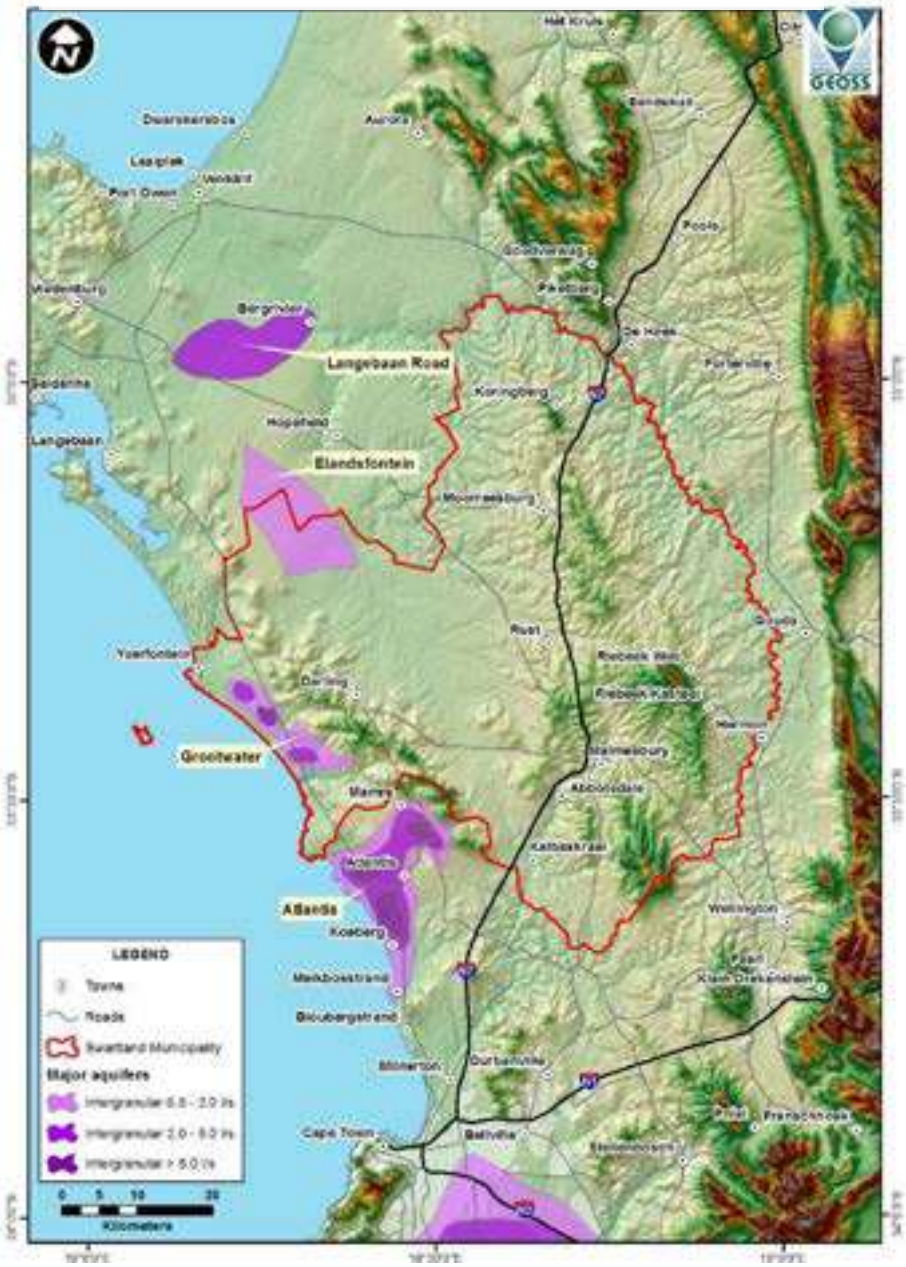
There are different types of aquifers that occur within the Swartland and confirm their sensitivity: Intergranular aquifers: Groundwater occurs in a porous medium e.g., alluvial deposits; Intergranular and fractured aquifers: groundwater contained in medium to coarse grained granite, and in jointed and occasionally fractured bedrock.

Fractured aquifers: ground water in fissured and fractured bedrock resulting from decompression and/or tectonic action.

The major aquifers in and around the Swartland are mapped and include: Grootwater Aquifer at Yzerfontein along the West Coast with the Elandsfontein Aquifer in Swartland's north western corner and shared with Saldanha Municipality.

Aquifers with high yields of around 5 litres per second. This occurs in sections of the identified Grootwater aquifer south of Yzerfontein.

Map 5: Location of major Aquifers in Swartland region and potential yield



The groundwater within the Swartland is generally classified as ideal to poor. Ideal water quality within the Swartland occur in smaller selected areas and include areas directly to the west of the N7 between Malmesbury and the southern boundary of the Swartland municipal area, underlying the Tierfontein and Groenrivier smallholding areas, areas around Kasteelberg and Paardeberg.

The groundwater quality in the northern part of the Swartland varies from good to more marginal.

Management directives for water sources and water catchment area include:

Protect

- Provide for current and future basic human water needs.
- Provide equal access to water.
- Promote the effective and sustainable use of water in the interests of the general public.
- Facilitate social and economic development through access to water.
- Preserve aquatic and associated ecosystems and their biological diversity.
- Reduce and prevent pollution and the degradation of water resources.
- Effectively manage floods and droughts.
- Create new irrigation schemes for sustainable water use.
- Monitor irrigation from rivers and use of underground water sources.
- Monitor ground water quality and capacity.
- Prohibit the overexploitation of underground water resources and aquifers.
- Maintain water catchment areas by especially removing alien vegetation with the exception of heritage trees (trees older than 20 years).
- Protect aquatic and associated ecosystem and biological diversity and classified the Berg, Diep, South and Groen Rivers as water zones

Change

- Investigate alternative water resources to alleviate water shortages during droughts.
- Plan for, provide and maintain water resources, water storage capacity and networks.
- Maintain sanitation according to prescribed standards and expand bulk infrastructure.
- Source water where water sources are currently replenished by topography linked rainfall (Swartland mountains) to ensure water security for domestic, industrial and agricultural use:
    - Apply water conservation strategies.
    - Plan effectively for long term water resources to ensure adequate provision for future demand.
    - Re-use and recycle water resources.
    - Steer away from water intensive activities.
    - Identify alternative water resources, funding schemes and technologies.
    - Facilitate incentives and disincentives for particular economic activities.
- Promote innovative and reliable alternatives and solutions for service delivery in rural areas e.g., support micro effluent plants in rural areas (settlements and where farmworker housing are concentrated) .
- Above ground activities in particular along the coast (Grootwater) and at Elandsfontein) should be informed by the Hydrological report in the SDF Status Quo, water catchment area information and setback lines.
- Support the Swartland Water Services Development Plan directive to follow a conservative water management approach.
- Provide for protecting water sources, maintaining water catchment areas, maintaining water source quality and groundwater.

Develop

- Encourage water harvesting and installation of domestic water tanks.
- Promote reuse of water and storm water (industrial use, irrigation of golf courses.
- Harvest storm water to cultivate food gardens.
- Facilitate social and economic development through access to water.

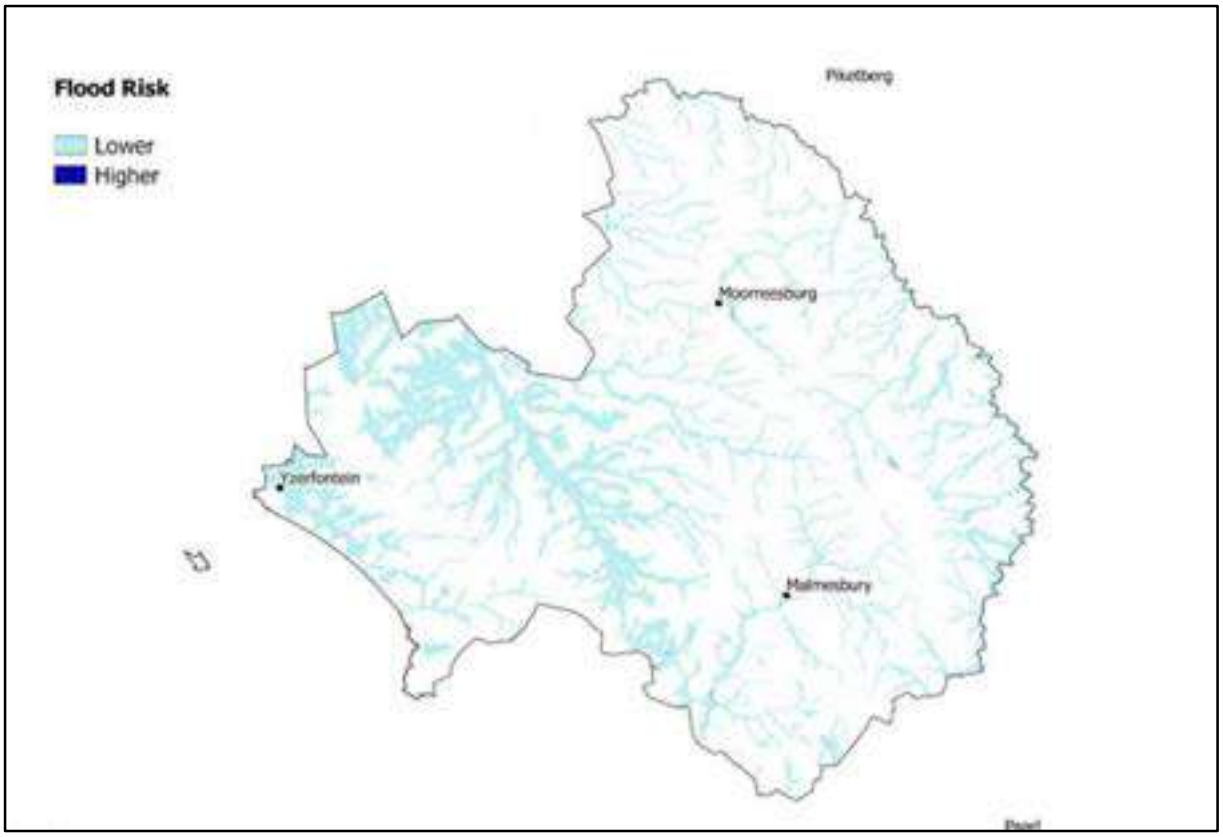
An Environmental Management Framework for hydrological zones is outlined below:

Management Priority	Priority Focus Area
Improve and rehabilitate	All intensive farming practices, such as intensive feed farming i.e., cattle housing, located on top of underground water resources, must ensure that all measures are taken to ensure that storm water is not polluted. Agricultural poisons that are blended at aircraft landing strips or on farms near rivers, wetlands or underground water sources can cause pollution. Industrial areas, service stations and fuel distribution pollute storm water. Storm water treatment areas need to be improved and rehabilitated to control the pollution of water and water resources. The rivers, with their flood plains and no identified development buffer areas, must be respected and managed. Rehabilitation needs to be implemented when necessary and regulated by an environmental management plan.
Conserve and preserve	A 32m wide buffer area along river banks and wetlands, must be adhered to. No development, except if an environmental impact assessment authorizes it, may occur within rivers and wetlands and their buffer areas.
Environmental Impact Assessment Requirements	All proposed developments covering an area of 50m² and more and within 32m from the banks of a water source, must have completed a Basic Environmental Impact Assessment and have Environmental Approval before development may take place.
Monitoring and management aspects	River monitoring must take place within the guidelines of the Department of Water Affairs River Health Programme. Borehole monitoring must take place in all developments that could lead to possible groundwater pollution, e.g., waste landfills, intensive farming practices. Water quality monitoring is required for all water treatment systems. All management and monitoring aspects must be regulated by an Environmental Management Plan.
Research and Education	The river health projects, as managed by the Department of Water Affairs. Education in schools to make youth aware of the value of water resources, due to climate change and scarcity of water resources. Community awareness campaigns, to specially emphasize water scarcity.

6.2.1.2 Natural Disaster: Droughts and Floods

Drought and Flooding are natural disasters enhanced by climate change. Swartland's flood risk is low as illustrated by the map below.

Map 6: Swartland Flooding Risk



According to the risk and vulnerability map for Swartland flooding is anticipated in and around Malmesbury and Abbotsdale as the Diep River dissects the settlement. Other vulnerable areas are the Diep River at Kalbaskraal, Though not listed as a flooding risk, Moorreesburg and Darling should be listed too as the No Go River and Langfontein River respectively flooded their banks.

Map 7: Flood area in Malmesbury and Abbotsdale

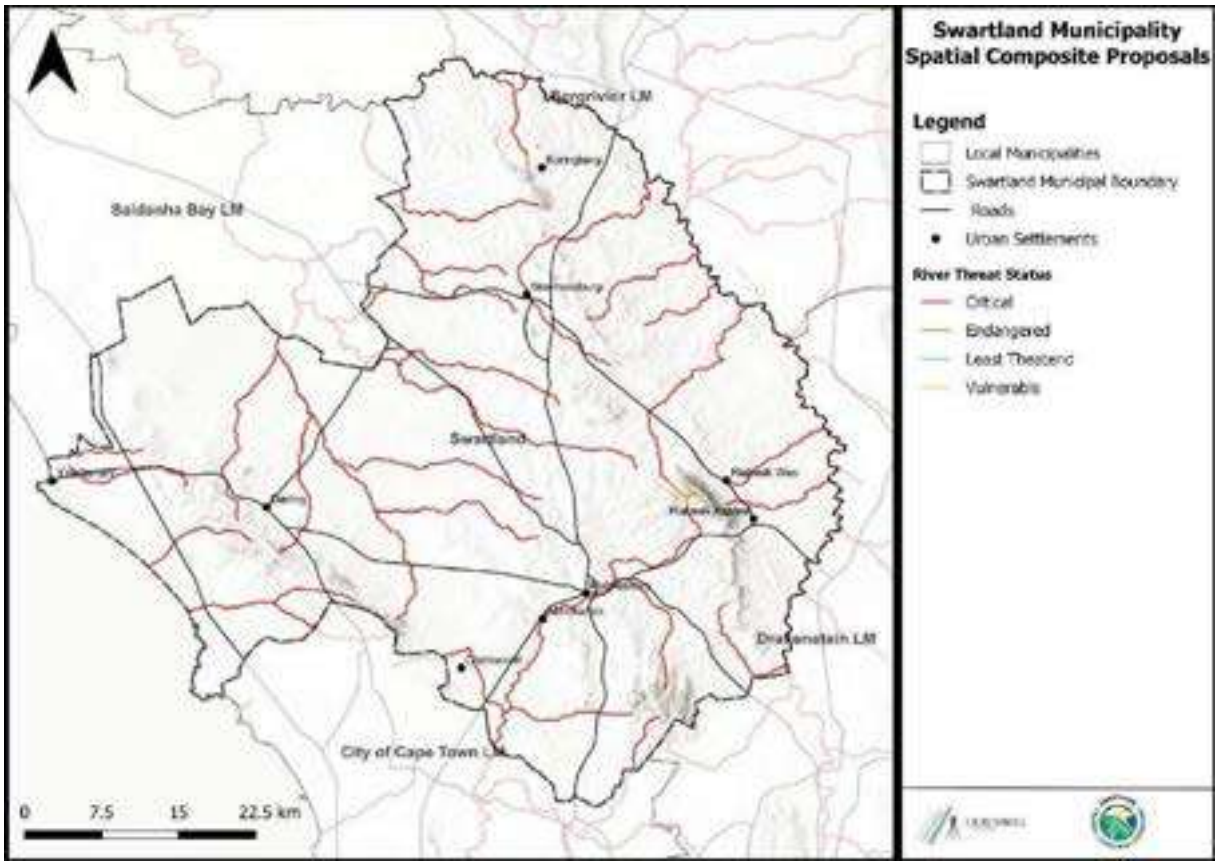
Environmental Impact Management directives for water sources and water catchment area include:

	Types of developments, land uses or activities		
Flood Risk Area:	**That should not occur**	**That may have significant impact**	**That have no significant impact**
Flood Risk Area 1 Include areas within the 1:50 flood line, where floods are equal to or greater than every 50-year average**.**	Any Infrastructure Development.	Residential, Commercial and Industrial Developments. Intensive agricultural practices. Waste Management Areas. Storage and handling of harmful substances.	Grazing by cattle.
Flood Risk Area 2 Include areas within the 1: 100 flood line, where floods are equal to or greater than every 100-year average.	Cemeteries, Industrial Areas, Fuel Storage Facilities and Intensive Agricultural Uses.	Residential, Commercial and Industrial Developments. Intensive agricultural practices. Fuel storage facilities.	Residential development and expansion services as necessary, mitigation actions as indicated by an environmental impact study and specialist studies.
Flood Risk Area 3 The area is exposed to floods not only caused by rivers, but by groundwater or storm water collection in low-lying areas.	Cemeteries, Industrial Areas, Fuel Storage Facilities and Intensive Agricultural Uses.	Residential, Commercial and Industrial Developments. Intensive agricultural practices. Fuel storage facilities.	Residential development and expansion services as necessary, mitigation actions as indicated by an environmental impact study and specialist studies.

6.2.1.3 Opportunities: Dams, Irrigation and Recreation

SANBI (SANBI, 2007) defines rivers based on whether their natural conditions have been modified and their ability to contribute to the river ecosystem. Rivers that are classified Unmodified, Natural or Largely Natural with Few Modifications are considered intact and able to contribute towards river ecosystems. SANBI: National Freshwater Ecosystem Priority Areas (2007), class most of the rivers in the Swartland as Critically Modified. Only two rivers in the Riebeek Mountains have endangered status.

Map 8: Swartland River Conservation Status



The main inland water bodies (dams) is the Misverstand Dam in the north-east within the Berg River.

Management directives for water sources and bodies include:

Develop

- Ensure the primary and operational requirements of dams and other water resources (e.g., water quality, safety and flood control).
- The development in and around dams and other water features can be evaluated, considered and implemented through the development of a water resources zoning plan as reference.
- Prevent the unsustainable, uncontrolled and unsafe use of state water resources.
- Strengthen the natural and cultural environment around dams and water resources through development of tourism, sport and recreation facilities, which will also provide opportunities for the creation of job opportunities.
- Effective and fair management of State dam basins, water resources and catchment areas. Take social, economic and environmental impact into consideration. Include all land located within the catchment areas of a dam or water resource to effectively manage the health of the system.
- Support the development of water resources for sport and recreation: Sports & recreational tourism: Berg River & Diep River.

Change

- Promote river boat trips and rafting along the Berg River:
- Promote recreation including fishing, resorts: camping, caravan parks including the hot springs.
- Promote mountain areas within Berg River catchment area:
  - Kasteelberg;
  - Paardeberg;
  - Darling Hills;
  - Swartberg:
  - Dassenberg.

Cross regional proposals

- Rehabilitate the Diep River and reintroduce freight transportation along the lower Diep River at Vissershok.
- Rehabilitate the Berg River and protect the Misverstand Dam as regional water source.

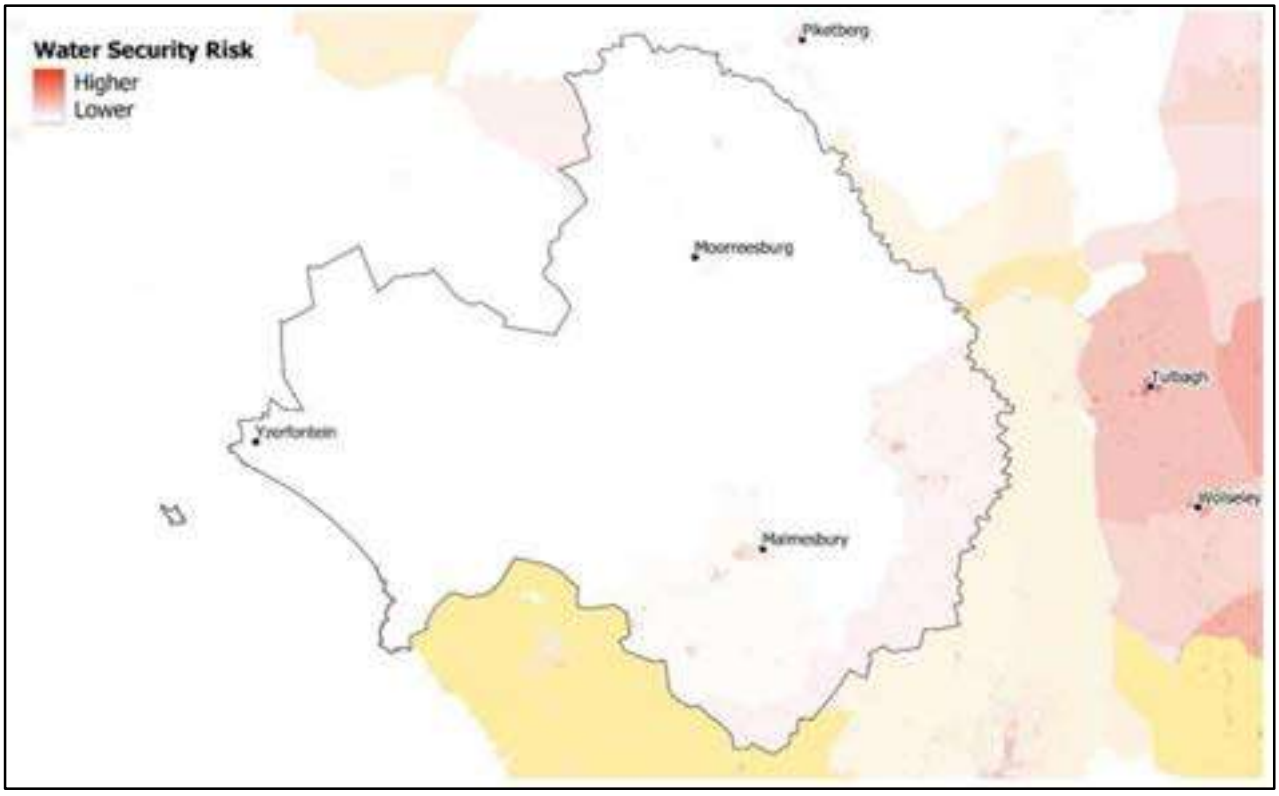
6.2.1.4 Risks: Water Security, Cemeteries and Waste/ Landfill Sites

Water and Water Security (Climate Change Theme 4) is a key factor for socio-economic development, food security and healthy ecosystems, and is vital for reducing the burden of disease and improving the health, welfare and productivity of communities. A deteriorating water catchment system will consequently lead to lower inputs into the water supply systems, and a lower overall water security due to lower natural retention and lower quality of water.

According to the climate change risk and vulnerability map (below) for Swartland, water security does not show the severity of the risk, just the relative risk between regions. It must be understood as highlighting areas with the highest risk, rather than as absolute values.

The vulnerability score is derived by combining the default socio-economic/ governance score with a groundwater dependency score obtained from the Ecological Infrastructure Investment Framework (EIIF) project of DEA&DP4.

Map 9: Water Security Risk in Swartland



Management directives for water sources and bodies, should development in general be considered, include:

Change

- All resources, especially surface water resources, need to be re-evaluated, especially where demand is close to the safe, one-in-twenty-year yields. Assurance of supply levels of all water sources should be established.
- Increase assurance of supply of the water resources by ensuring that there is at least 10% additional capacity (headroom), when considering the maximum 24-hour demand at the highest demand month of the year.
- Do not undertake new developments unless a proper investigation of the implication on water sources and sustainability in the long term has been undertaken.
- Vigorously implement Water Demand Management measures, especially in terms of the following:
    - increased water efficiency;
    - frequent monitoring of the water supply system, from the sources to the consumers; and
    - regular and adequate system maintenance and repairs.
- Diversify water resources, e.g., surface water, groundwater and wastewater re-use.

Protect

- Consider water quality standards and thresholds in all development and planning processes.
- Consider all applicable guidelines, policies and legislation pertaining to freshwater impacts where relevant to developments.
- Encourage efficient water use in all development proposals.
- Pursue environmental justice so that adverse environmental impacts shall not be distributed in such a manner as to unfairly discriminate against any person, particularly vulnerable and disadvantaged persons.

Management directives for water sources and bodies, should development of cemeteries and waste/ landfill sites (Climate Change Theme 1) be considered, include:

Change: Cemeteries

- To expand cemeteries in all settlements

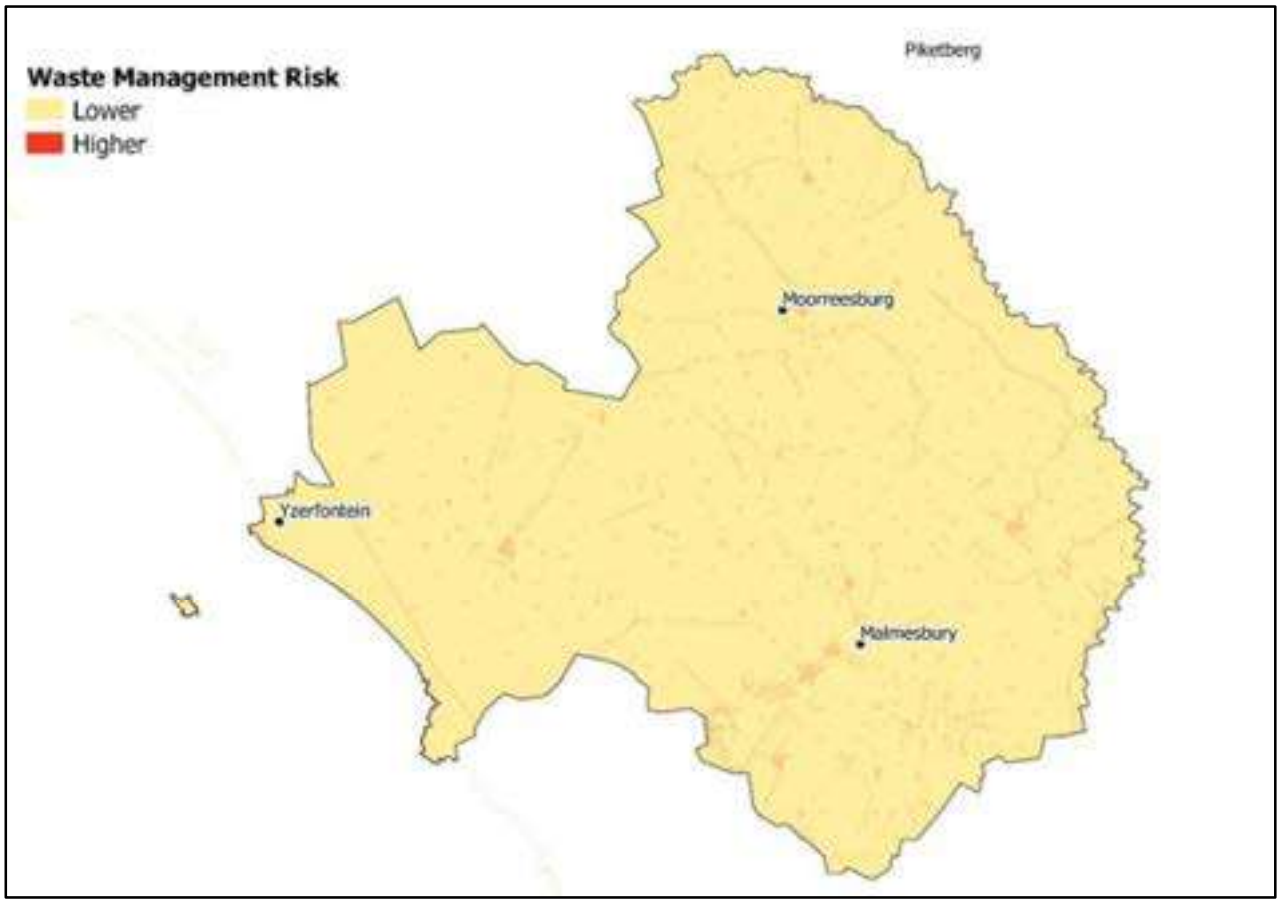
Change: Waste/ Landfill Site

- Investigate transfer stations along major routes and at large farming operations; Investigate recycling of domestic and garden waste.
- Implement a waste management strategy.
- Protect environmental health & prevent ecological degradation as per norms and standards (waste management, control, licensing & remediation of contaminated land).
- Implement a waste management hierarchy during lifecycle of waste:
  - avoid and reduce waste,
  - re-use and recycle,
  - recover,
  - Treat and dispose.
- Manage waste sustainable:
  - Divert waste to regional landfill sites
  - Minimize adverse impacts

"Solid waste in the environment holds an inherent risk due to its potential to destabilise ecological balance or exceed natural waste processing capacities. In some situations, solid waste is a hazard by itself, but in other cases it is transformed into, or leads to the formation of, secondary pollutants that contaminate air and water"

"Combining the hazard (potential presence of waste) with a generic vulnerability score (likelihood of being affected) results in a map that presents the risk of people being affected by waste 'spilling' out of formal waste management systems and degrading the environment."

Map 10: Waste management risk in Swartland



Environmental Impact Management directives for hydrological zones is outlined below

Types of developments, land uses or activities				
Rivers, wetlands and buffer areas	**That should not occur**	**That may have significant impact**	**That have no significant impact**	**Related policies & guidelines**
Rivers, wetlands and buffer areas The buffer areas are calculated by standardized methodology (refer to Floodplains and Rivers Management Policy): River buffer areas vary between 10 - 40m from the river bank. Vleiland buffer areas differ and can be up to 75m wide, measured from the outer edge of the wetland.	Any Infrastructure Development.	Residential, Commercial and Industrial Developments. Intensive agricultural practices. Fuel storage facilities.	Grazing by cattle.	Environmental Impact Assessment and Guidelines. Provincial Spatial Development Framework for the Western Cape Province. All legislation with an environmental aspect and corresponding regulations, policies and guidelines.
Highly Productive Underground Water Sources The zones include highly productive interrelated, broken down, and a combination of both, underground water sources.	Waste disposal sites.	Intensive agricultural activities, waste management (transfer & recycle) sites. Fuel storage facilities. Industrial areas.	Residential development. Normal agricultural activities.	
Average productive underground water source The zones include average productive interrelated, broken and inter granular and broken ground underground water resources.	Waste disposal sites.	Residential, Commercial and Industrial Developments. Intensive agricultural practices. Fuel storage facilities.	Residential development. Normal agricultural activities.	

6.2.1.4 Opportunities: Sea, Fishing and Recreation

As commercial fishing has declined along the West Coast, Operation Phakisa was established. Operation Phakisa focuses on unlocking the economic potential of South Africa's oceans. This will be done together with representatives from government, industry, labour, civil society and academia.

The ocean has a potential to contribute, to the Gross Domestic Product (GDP), up to R177 billion. The ocean also has a potential to contribute between 800 000 and one million direct jobs. In 2010, the oceans contributed approximately R54 billion to South Africa's GDP and accounted for approximately 316 000 jobs.

Operation Phakisa focuses on four priority sectors:

- Marine transport and manufacturing activities, such as coastal shipping, trans-shipment, boat building, repair and refurbishment; offshore oil and gas exploration; aquaculture and marine protection services and ocean governance.
    - Provide for marine transport and manufacturing activities.
    - Promote Aqua & marine culture and eco-tourism opportunities at Yzerfontein.
- On offshore oil and gas exploration - enhancing the enabling environment for exploration of oil and gas wells, resulting in an increased number of exploration wells drilled, while simultaneously maximising the value captured for South Africa.
- Aquaculture - enhancing growth in the sector through increasing the value contribution of all segments across the aquaculture value chain, while creating jobs especially in fish processing and marketing.
    - Investigate aqua culture in Berg River or other rivers
- Marine protection services and governance - to develop an incremental and integrated approach to planning, monitoring and execution of ocean governance and enforcement in the next few years.
    - Maintain fishing infrastructure (to keep sense of place)

6.2.1.2 Natural Disaster: Coastal erosion and flooding

The coastal erosion and flooding risk map for Swartland confirms that the risk in populated areas is higher than the risk in areas with no settlements. Yzerfontein settlement is vulnerable to coastal erosion. Vulnerability is expressed as a combination of socio-economic vulnerability and governance along with the relative importance of coastal resource (beaches, industrial activity, harbours and rocky shores).value to the local municipal context.

6.2.1.5 Proposals

- Enhance use of rivers for recreation aligned with the relevant Swartland by-laws.
- Delineate Flood lines in Malmesbury, Darling and Moorreesburg and all other settlements.

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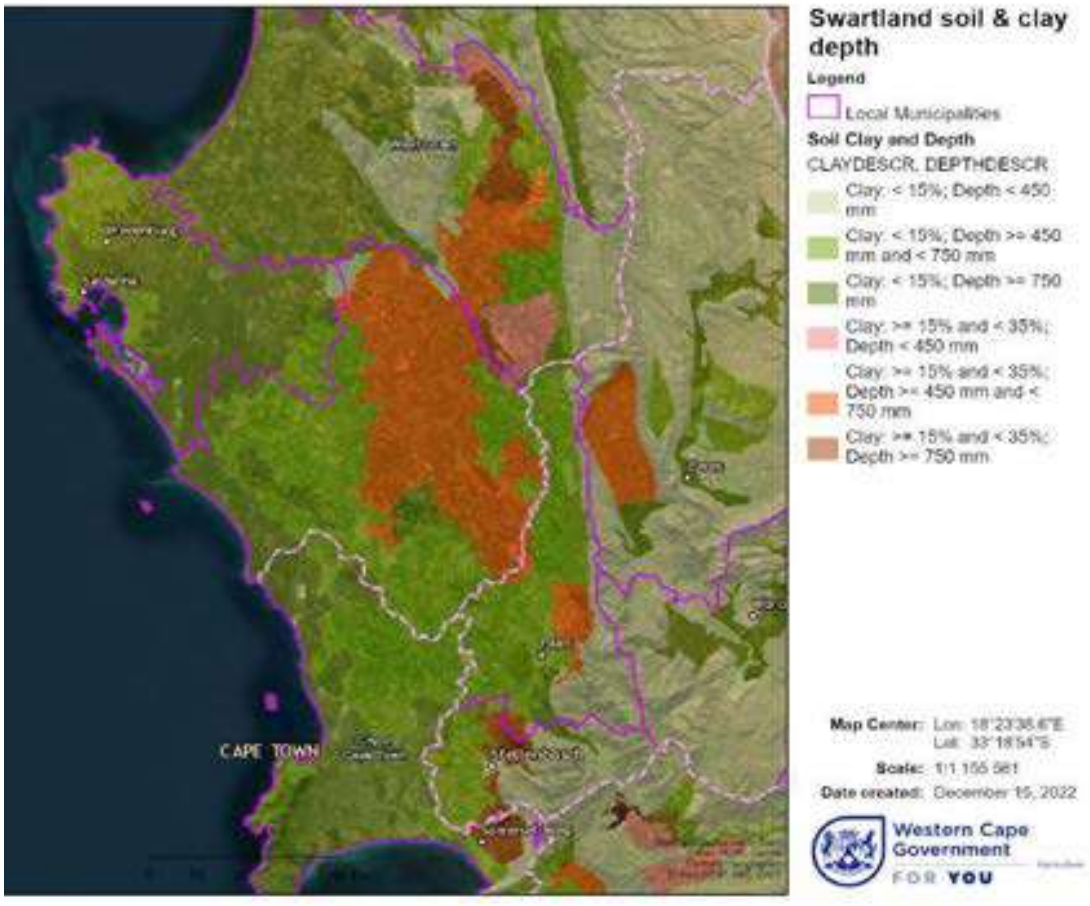
6.2.2 Land/ Soil

Soils in Swartland vary greatly over short distances, making this area vulnerable to varying erosion rates. Coastal deposits are particularly prone to erosion if the natural vegetation is disturbed, for example by cultivation.

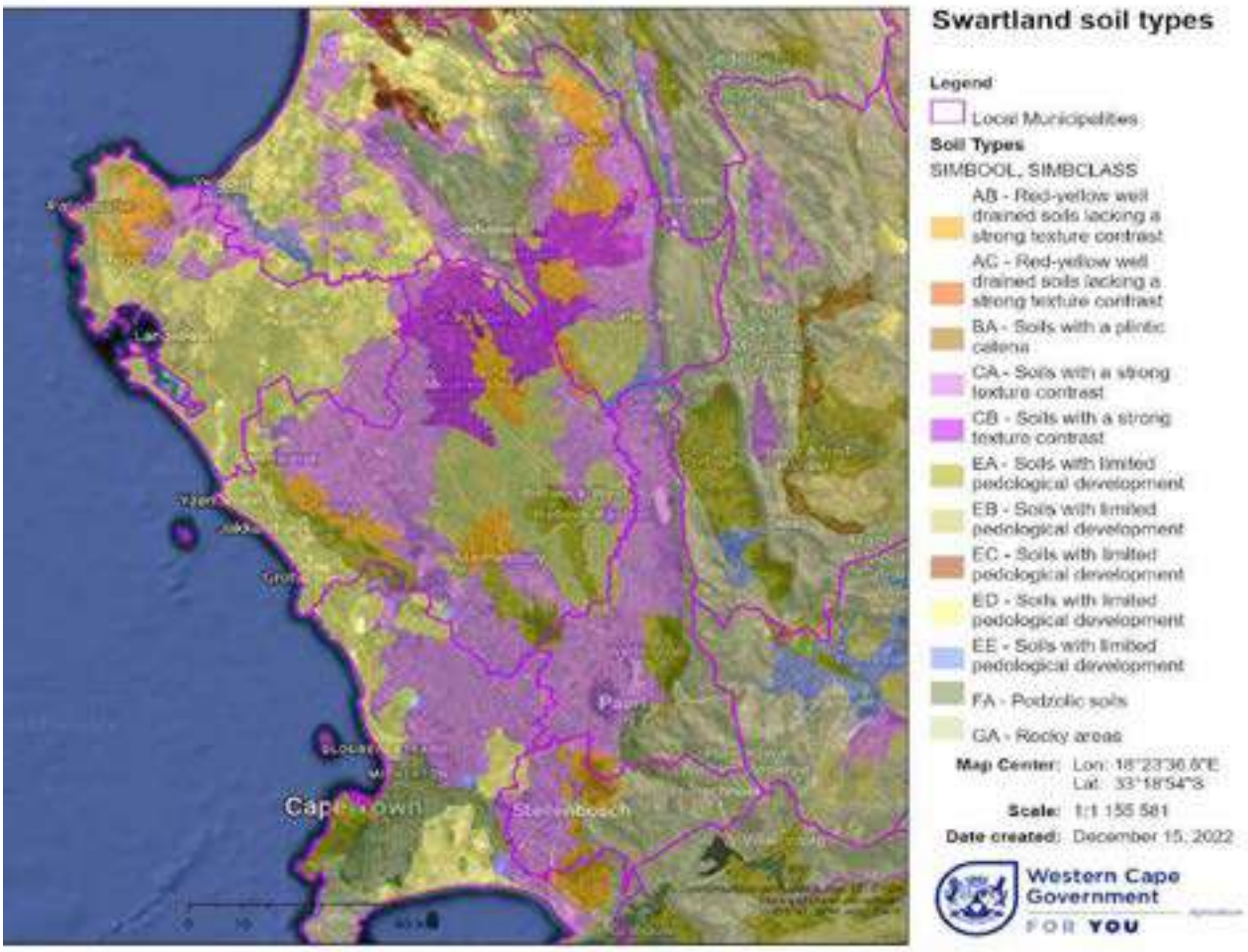
Soil depth in the Swartland varies generally between 450cm – 750cm over most of the Swartland with the exception of soils immediately north of Malmesbury and along the coast where soils are deeper than 750cm.

The majority of the Swartland area has a soil clay percentage of less than 15%. The western side of Swartland, above Malmesbury and the R45 has a clay percentage of between 15% and 35%.

The Malmesbury Group formation covers the mountain area from Cape Town to Piketberg and includes materials such as greywacke and phyllite with beds and lenses of quartz schist, limestone and grit. This formation occur in pockets as foothills and lower laying undulating hills around Malmesbury, Riebeek mountain, Moorreesburg and Piketberg. The origin of the Malmesbury group is overwhelmingly marine. This substrate provides the Province's best soils for wheat, deciduous fruit and vineyards (Morkel, 1998).



Map 11: Swartland Soil Types



6.2.2.1 Natural Resource: Soil Suitability (Agriculture),

Approximately 85% of the Swartland area represents arable land. Soils suitable for wheat production are mostly located north-east of Malmesbury and for viticulture immediately north of Malmesbury. The majority of the municipal area is suitable for grazing.

Agricultural cultivation is mostly intensive, comprising vineyards, orchards and pastures. Together with the magnificent scenery, these resources and agricultural activities, especially wine-making form the basis of its tourism industry.

- Sandveld (Area 14), Veld grazing areas and marginal cropping areas.
- Koringberg Rooikaroo (Area 15), Dryland cropping areas
- Middle Swartland Piketberg and Porterville (Area 16), Cropping areas with Hills
- Koeberg, Kortreiberg, Malmesbury and Voorberg (Area 17, High rainfall areas
- Durbanville, Mamreweg, Paardeberg and Riebeek (Area 18), Mixed farming areas

Climate change: Agriculture and food security: Is a high employment generator, yet there is a slow decline in the sector's contribution to the economy. Climate change will add to the decline of the sector within the Swartland. The diversification based on microclimate and soils will become less diversified whilst seasonality will shift..

Both Agri-processing and Agriculture are significant economic contributors and employment sectors. The Agriculture, Foresting & Fishing (AFF) sector contributes 12.5% to Swartland GVA production along with 28.7% to employment (CSIR, 2019)).

The contributions of agriculture are slowly decreasing as is the number of commercial faming entities. In 2019 small scale farming or subsistence farming has declined since 2015 as an important part of livelihoods in both rural and urban areas due to the draught and water restrictions. More than half of agricultural households exclusively grew crops.

Sandveld (Area 14), Veld grazing areas and marginal cropping areas:
North westerly winds during May and June result in damage to newly sowed crops in areas where wind erosion occurs. The strong south and south eastern winds during summer can also result in wind erosion on exposed areas. The strong winds can also result in erosion along the coastal dunes if the dunes area is not stabilized by adequate plant cover. Recommended that dune areas are not actively grazed to prevent the potential of erosion.

Koringberg Rooikaroo (Area 15), Dryland cropping areas:
Dry south eastern winds during May and June result in withering of young grains and can also prevent the germination of grain during years with a low rainfall. Gail force winds that occur during October and November can result in damage to ripe grain.

Middle Swartland Piketberg and **Porterville** (Area 16), Cropping areas with Hills, **Koeberg, Kortreiberg, Malmesbury** and **Voorberg** (Area 17), High rainfall areas and Winds in this area do not generally have a negative impact on agricultural production.

Durbanville, Mamreweg, Paardeberg and **Riebeek** (Area 18), Mixed farming areas:
The cool south and westerly winds that normally occurs during the afternoons in the summer months prevent high temperatures, which have a favourable impact on the climate in this area that allows for production of wine grapes of a high quality.

Swartland is a winter rainfall areas with 80% of rain occurring during April to September which make this area suitable for the production of winter crops. Summer crops can only be produces under irrigation.

Sandveld (Area 14), Veld grazing areas and marginal cropping areas:
This area has the lowest rainfall. The Sandy soils within this region have a low moisture retention ability that results in a marginal production potential. The good distribution of winter rainfall however ensures a constant winter crop production in this area. This area contains the largest natural grazing veld area in the Swartland.

Koringberg Rooikaroo (Area 15), Dryland cropping areas:
Production is limited to cultivars with a short growth season. Low rainfalls and high temperatures during September can hinder development in some grain types.

Middle Swartland Piketberg and **Porterville** (Area 16), Cropping areas with Hills.

Koeberg, Kortreiberg, Malmesbury and **Voorberg** (Area 17), High rainfall areas:
Deeper soils in this area have the capacity to store adequate moisture from rain during the winter months. Rainfall is also adequate for the production of dry land vineyard and winter grain production. This area is not known for extreme conditions that can have an adverse impact on agricultural production

Durbanville, Mamreweg, Paardeberg and **Riebeek** (Area 18), Mixed farming areas:
This area is more suitable for the production of winter crop. Dry land vineyard production is only found in deeper soils with good moisture retention capacity. Height above sea level average 90 to 250 meters in the Darling Mamre Station area and between 100 to 300 meters above sea level in the Paardeberg and Riebeek areas. There are also a few mountain areas with heights above sea levels that vary between 600 to 700 meters.

The area is characterized by warm dry summers and mild cold wet winters. The highest temperatures occur over December to March, except in the Sandveld (Areas 14) and Durbanville, Mamreweg, Paardeberg and Riebeek (Area 18) when the highest temperatures normally occur from January to March.

Sandveld (Area 14), Veld grazing areas and marginal cropping areas:
During January 8% And February 14%change for heat waves with temperatures of more than 30 ºC.

The locality of the area close to the sea results in milder temperatures in this area. Agricultural production in this area does not occur during the summer months, with the heat having a lesser impact.

Temperature of below -2°C that can cause frost damage to agricultural production in this area is very rare.

Some frost occurs in the lower lying areas along the Berg River.

Koringberg Rooikaroo (Area 15), Dryland cropping areas:
December 57% January 71% February 76% and March 58% that heath waves of temperatures higher than 30 °C will occur. During January and February, the changes area 36% to 40% that a heat wave with temperatures higher than 34 °C will occur.

Frost seldom occurs in this area with the probability of frost occurring during June to September of only 7%. No frost damage to crops was recorder in the past 15 years.

While June, July and August is the coldest months of the year the changes of frost occurring in the Moorreesburg area is below 1%. The changes of frost damage to crops during winter are therefore very rare.

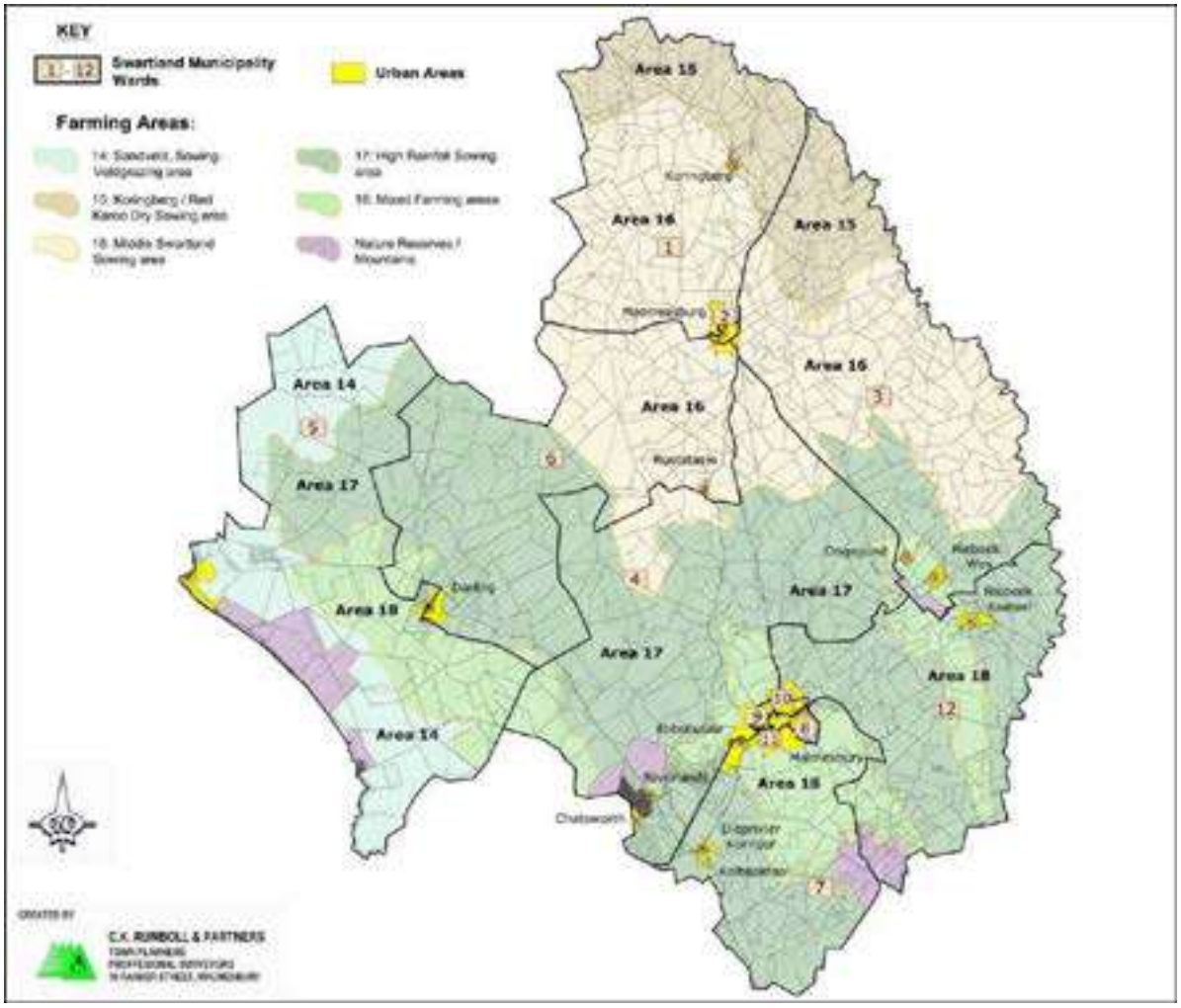
Middle Swartland Piketberg and **Porterville** (Area 16), Cropping areas with Hills:
The changes for temperatures higher than 34°C during January and February is 23 to 26%. The changes of temperatures higher than 30 °C during December is 43%, 53% during January and 60% during February.

Koeberg, Kortreiberg, Malmesbury and **Voorberg** (Area 17), High rainfall areas:
The probability of higher temperatures than 30 °C during December to March is 32 to 49%. February is normally the month with the highest temperatures with a 49% change of temperatures higher than 30°C. Heat wave during January and February in these areas can increased the risk of veld fires.

The winter temperatures are mild with the lowest temperatures from June to September. Temperatures of below -2°C do not normally occur in this area.

Durbanville, Mamreweg, Paardeberg and **Riebeek** (Area 18), Mixed farming areas:
The probability of higher temperatures between 30 to 35°C in the Riebeek Valley during summer are 14%.

Frost rarely occurs in this area, with only the lower lying areas that have temperatures of below -2°C during the winter.



Management directives for soil and land resources include:

Protect

- Protect and preserve agricultural resources (productive land and landscape).
- Retain and conserve the rural character and agricultural landscape of the area.
- As one the main economic sectors in Swartland, agriculture connects with most of the surrounding municipalities. The cross-boundary activities include conservation agriculture along the coast, to the east towards Paardeberg, and along the Riebeek mountains north and towards the Paardeberg and cultivation of wheat and vineyards.

Change:

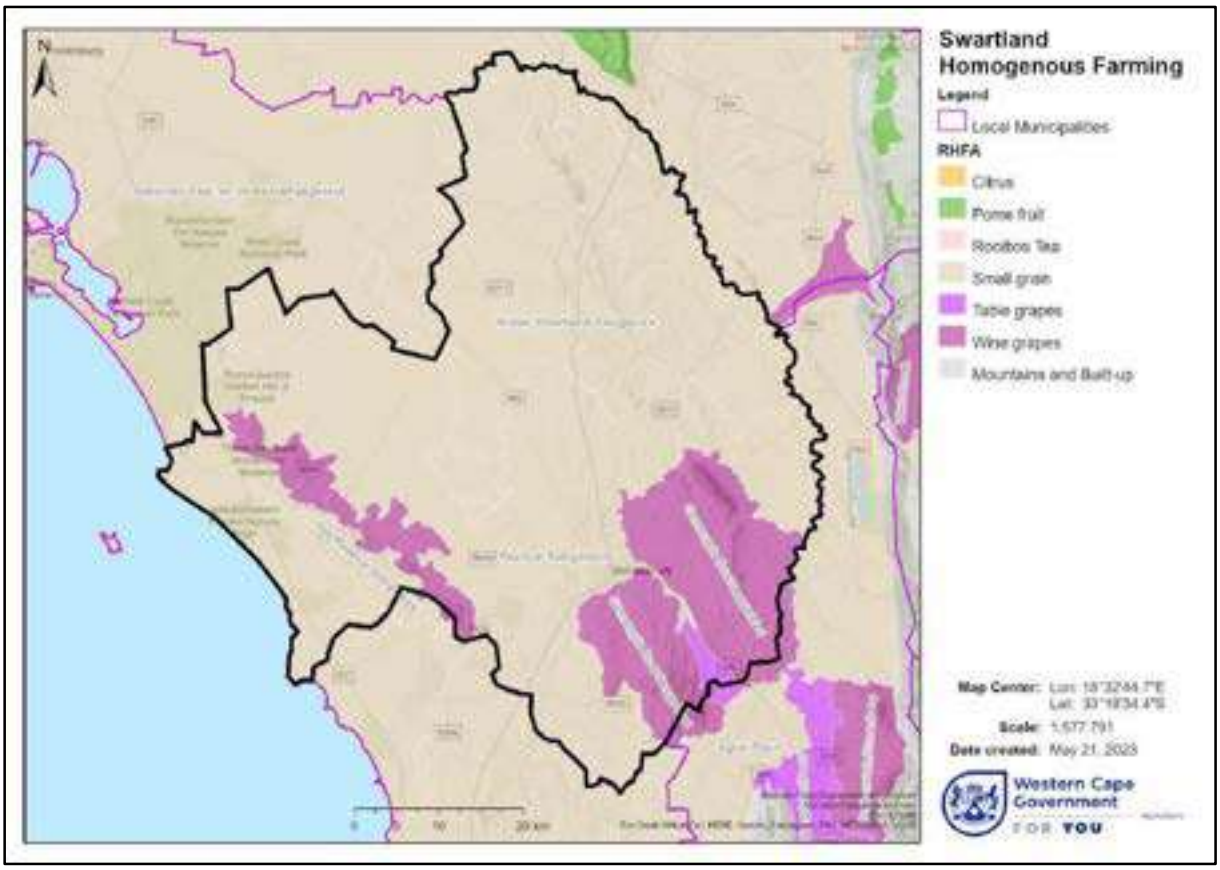
- Support crop cultivation as a landscape attraction promoting tourism and preserve and support the agricultural production areas and landscapes.
- Support continued research into climate change on current crop production & sustainable cultivation.
- Protect agriculture both extensive agricultural production and intensively irrigated areas along Berg River and other water courses.
- Protect limited underground water, practice dry land cultivation instead of irrigation.
- Effectively manage erosion using conservation agriculture methods, planting of perennial legumes and management of contour lines.
- Maintain fire breaks around farms.
- Support different sizes of agricultural entities. (Support both creation of extensive agricultural farms and smaller farm units).

- Increase the variety of agriculturally related land uses including tourism.
- Subdivision of agricultural land for creation of smaller economic-production entities should be guided by current policies of the Department of Agriculture.
- Distinguish between “small farm units” of 20 to 40ha, smallholdings of 5 to 10ha and rural living smallholdings.
- Support cultivation and conservation e.g., Biodiversity and Wine Initiative.
- Support Swartland cultivation routes (wine, grain and olives) and the development of related infrastructure, facilities and accommodation.

Develop

- Increased production to participate in value chain.
- Settle new and upcoming farmers (small and commercial).
- Support existing land reform projects and identify opportunities for land reform on intensive irrigation areas.
- Create smallholders’ forums in the smallholding areas to deliberate development issues and establish development parameters. Re-assess development parameters in Tierfontein and Groenerivier smallholding areas.
- Support the development of an Intensive Rural Development Corridor along the N7 from just north of Malmesbury to the southern boundary of Swartland.
- Provide for and support land uses tourist facilities and farm stalls and big box Agri sheds.
- Provide for skills development facilities of agricultural workers to develop skills in agriculture, tourism and niche products.
- Support the development potential of the Intensive Rural Development Corridor between Malmesbury and Kalbaskraal (dual carriageways, regional links).
- The West Coast District Rural Development Plan to support Malmesbury and surrounding area as a potential future Agricultural Farmer Production Support Unit (FPSU) for the proposed Vredendal Agri Hub.

Map 12: Swartland Homogenous Farming



An Environmental Management Framework for soils as economic aid zones is outlined below:

Management Priority	Priority Focus Area
Improvement and rehabilitation	High potential agricultural land.
Conservation and preservation	High potential agricultural land.
Environmental Impact Assessment Requirements.	All infrastructure requiring environmental approval as prescribed in the Environmental Impact Assessment Regulations.
Monitoring and management aspects	All Environmental Approvals' implementation is regulated by an approved Environmental Management Plan that regulates management and monitoring aspects.

6.2.2.2 Natural Disaster: Climate change type of farming

Crop production and animal rearing cease. Climate change contributes to prohibit agricultural cultivation and rearing of stock and other agricultural activities may replace traditional activities.

6.2.2.3 Opportunities: Agri industries and Processing, Land Reform and Agri-tourism

Wine routes amongst the established wine area around Darling, Malmesbury and Riebeek Valley and surrounding rural areas includes silos, mills, museums and industries that tell the story of wheat and wine

production in the Swartland. Wine routes extend across and between municipal boundaries (Swartland and Drakenstein and Bergrivier). The natural, cultivated and heritage landscape across the Swartland express the Swartland landscape character.

The growth of tourism needs to be supported and expanded as per (through the adoption of a) tourism development strategy. Development in the rural and natural areas needs to:

Development proposals and guidelines at municipal level for Spatial Strategy 11, Developing the competitive advantage (Conservation and Landscape): Tourism and New Markets (SS11) and Spatial Strategy 9, Grow cultural potential (SS9), are listed below:

The following directives should grow tourism:

- Co-ordinate and link rural, urban and Agri-tourism opportunities.
- Continue effective management and maintenance of existing tourist attractions and investigate new tourism opportunities.

Development proposals and guidelines at municipal level for Spatial Strategy 4, Protect Place Identity (Heritage Resources): Urban Design (SS4), are listed below:

Management directives for soil and land resources include:

Agri-Industries and Processing
Change

- Provide for and promote agricultural and agricultural related industries: composting, alternative energy generation, communication network facilities.
- Provide for support services to agricultural activity (e.g., repairs).
- Provide for agricultural industries to enhance job opportunities.
- Support alternative transport i.e., rail for mining stock and bulk agricultural produce (e.g., Wheat) to limit impact on roads and improve economic viability of the railway network: (Cape Town Bitterfontein and Bellville West Coast lines.)

Develop

- Produce niche products on-site (value adding) on the farm. Investigate the production of new agricultural related and complimentary products rand promote their production on farms e.g., aqua culture farming.
- Provide for tourism related activities on farms e.g., farm stays, leisure accommodation, Agri-processing, tastings, restaurants, farm stalls, wineries and private nature reserves.
- Encourage labour intensive processing and manufacturing (for small scale agriculture)
- Brand Swartland produce.
- Provide for initiation of commercial activities in which farm workers are involved (e.g., farm stalls and local markets).
- Enhance opportunities to establish new markets at local, regional, provincial and national level.
- Grow and diversify agricultural sector (Area 18 – Atlantis hills - wine, Diep and Groen River – vegetables & fodder, Paardeberg – wine, Rooidraai – wine, Riebeek berg & valley – wine & deciduous fruit, Broodkraal – table grapes) by means of product development and new market

development (Current products and current markets i.e., labelling, niche products, bio fuel, develop agricultural service industries, strengthening supply chains, job creation);
- Grow and diversify agricultural sector by means of diversification (Area 15 & 16, 17 and Conservation area) (New products and new markets i.e., tourism and Mediterranean climate, alternative energy, utilise unique landscape features for film industry).
- Support development of commercial infrastructure on farms along routes, including farm stalls and Agri-processing, to support transport network and tourism routes
- Strengthen value chain and support tourism development on farms.
- Promote Yzerfontein rural corridor and intensive rural development corridor north and south of Malmesbury along N7 including agricultural industries.
- Enhance regional and local agricultural service centres (Malmesbury – wards 8, 9, 10, 11, Moorreesburg – ward 1, 2, 3, Darling – ward 5, 6 and Riebeek Kasteel& West – ward 3).

Change:

- Support infrastructure development on farms (Reservoirs, Waste Water Treatment Plants, Electricity network and Landfill sites).
- Require small sewerage treatment plants for high density farms and rural settlements.
- Encourage availability of water trucks on farms during harvest(preventing fires).

Develop

- Update Land Reform Implementation options in co-operation with DALRRD and formal agriculture.
- Ensure land reform projects, restitution, redistribution and security of tenure are done in accordance with the spatial development framework and are needs based, flexible, economically viable and environmentally sustainable. It should also promote social justice and alleviate poverty.
- Promote commercial and subsistence opportunities aligned with agricultural potential.
- Correlate the extent of agricultural units with soil potential and the availability of water and the type of farming (crop or livestock production) and the intensity (livelihood or commercial farming).
- Ensure security of tenure and the promotion of individual and communal rights and ownership.
- Promote stream aqua culture along the Berg River and in farm dams.
- Identify suitable land in government ownership for gardens and small-scale agriculture.
- Support the use of treated grey water for irrigation.
- Support the provision of housing for farm workers in existing urban areas close to work opportunities.
- Considering the lack of summer surface water influencing small scale farming, promote:
  - Non-soil-based production (tunnel and hydroponics) opportunities
  - Intensive feed farming or free-range poultry
  - Projects should focus on small scale agriculture, local consumption and domestic food production
  - Green & alternative energy generation
- Consider regarding small or medium irrigated intensive farming the following:
  - Limited opportunities in wards with high soil costs and with irrigation water rights
  - Limited opportunities in wine industry due to existing number of cellars and over supply of wine
  - A high level of technical skills and management of those skills needed for the effective management of such resources on the Berg River

- Although Swartland Municipality is not directly responsible for land reform, the municipality identified, as per the Swartland SDF, potential areas for low-income residential development, the location of community gardens and the settlement of small farmers in and around urban areas should consider the following guidelines:
- Availability and affordability of land and water resources
- Topography, preferably flat
- Soil conditions, and
- Location in close proximity to the community. To limit land use conflicts, animal husbandry should not be in close proximity to residential areas.

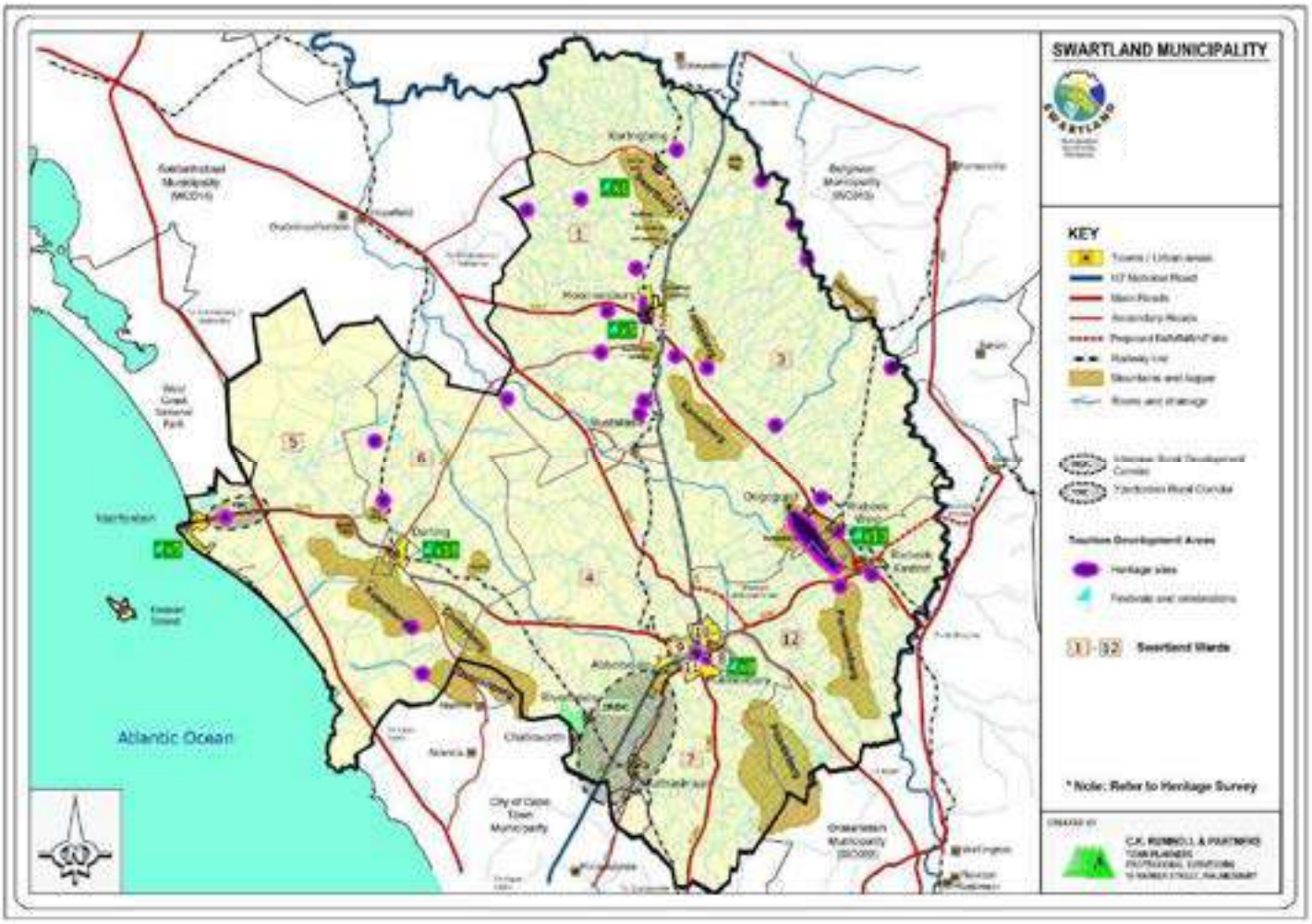
Agri Tourism
Develop:

- Support tourism routes and destinations within the West Coast District Municipal jurisdiction, incorporating the areas of Swartland, Cederberg and Bergrivier, i.e.:
  - The West Coast Culture Route including Darling with Evita's Peron, Darling Brew and Ormode Wine Cellar, Yzerfontein West Coast Biosphere Trails, !Khwa ttu San Culture & Education Centre and Farm stalls.
  - The West Coast Scenic Route including Darling, Malmesbury, Riebeek Valley, Moorreesburg and Koringberg.

- Support the development and establishment of:
  - farm stalls, involve more people in the tourism industry.
  - recreational routes and accommodation facilities.
  - Agri-tourism (harvesting and cooking).
- Grow Swartland as part of the bigger West Coast and Conservation (ecotourism) drive: Birdlife, Biomes, agricultural landscape, wine production, cooking and cultivation.
- Promote events, festivals and wine tasting, recreation and sports events to build the agricultural brand:
  - e.g., Berg River marathon and other water sports and fishing activities.
- Promote Agri & eco-tourism at Koringberg, Riebeek West, Diep River corridor/ meander, Riverlands, Chatsworth, Darling, Kalbaskraal and Riebeek Kasteel)
- Strengthening and support of the Agri-tourism industry (improve accommodation facilities on farms, development of niche products, develop hiking and mountain bike trails, support agricultural festivals in the region, develop new tourism routes (Wheat route - Koringberg – Moorreesburg – Malmesbury – Direction Durbanville [N7], [R302], [R304] & Moorreesburg to direction Hopefield [R311] & Malmesbury to Hopefield [R45]) (Wine route – Malmesbury – Moorreesburg to direction Piketberg [N7] – to Porterville – Gouda – Hermon [R44] – to Riebeek Valley &Malmesbury [R46] – to Darling

[R315] & direction Durbanville [R302 & 304]) (Swartland Meander route: Yzerfontein – Darling – Malmesbury – Riebeek Kasteel – Hermon [R315 & R46] &Malmesbury – Philadelphia [DR1111] & Darling to Mamre [R307]). (Agricultural Landscape Route: Riebeek to direction Porterville & Moorreesburg to Koringberg), support farm stalls, involve more people in the tourism industry)

Map 13: Swartland Heritage Resources map



6.2.2.4 Risks: Food Security

Extensive research is underway by the relevant department and only the impact of securing food production will be dealt with in the MSDF.

Management directives for soil and land resources include:

Protect:

- Protect agricultural landscapes.
- Protect water sources and quality.
- Promote food security.
- Conserve and protect agricultural resources (productive land and landscape):
  - Ensure no cultivation of virgin land takes place without the written consent of the Minister of Agriculture.

- Ensure no land with a slope of more than 20% will be cultivated without written consent of the Minister of Agriculture.
- Ensure cultivated land is effectively protected against water and wind erosion.
- Avoid use of vegetation in a marsh or a water sponge or in a floodplain.
- Reserve productive agricultural land for agricultural purposes only.

Change:

- Promote locally produced agricultural products (in mass or small scale) to be produce of preference.
- Promote innovative land reform models.
- Foster innovative food production and diversification.
- Revitalise the rural economy to address poverty and improve access to local economy.

Develop:

- Identify areas with low, medium and high potential agricultural soil close to urban development.
- Promote agricultural units of different sizes (small agricultural units (20-50 ha), small holdings (5-20 ha) and extensive residential holdings (<5ha)).
- Strengthen associations to promote community participation in local development issues and to determine land use-/ zoning guidelines.
- Establish an Intensive Rural Corridor along the N7 south of Malmesbury and along the R315 from R27 crossing towards Yzerfontein.
- Identify potential areas within urban areas to be utilised for community gardens in Darling, Koringberg, Moorreesburg, Abbotsdale, Chatsworth, Riebeek Kasteel and Riebeek West.
- Re-orientate existing agricultural model to allow for the creation of smaller agricultural units in rural areas.

Environmental Impact Management directives for soil and land resources outlined below

Types of developments, land uses or activities				
Agricultural Land Potential	**That should not occur**	**That may have significant impact**	**That have no significant impact**	**Related policies and guidelines**
High potential unique agricultural land	Any development that will not exploit the high agricultural potential and value.	Any development that will not exploit the high agricultural potential of the area.	Any development that will exploit the high agricultural potential of the land.	All guidelines, policies and legislation applicable to the Agricultural Industry.
Agricultural land of significant value	Any development that will not utilize the significant potential and value of the land.	Any development that will not exploit the significant potential of the land.	Any development that will exploit the significant potential of the land.	
Other Agricultural Areas	Uncontrolled development.	Uncontrolled development.	Controlled development.	
Smallholdings and agricultural uses	Non-agricultural oriented activities.	Non-agricultural oriented activities.	Managed agricultural oriented developments.	

6.2.2.5 Proposals

Protect intensive and extensive agricultural land to secure food production

6.2.3 Mineral Resources

The geological formations in the Swartland, consisting of various igneous, sedimentary, metamorphic rocks, are: Malmesbury Formation, Cape Granite Suite, Klipheuwel Formation, Cape Super group (SACS, 1980), Bredasdorp (T-Qb), Alluvium, sand, calcrete (Q).

Malmesbury formation can be divided into three separate areas:

(a) The south-western domain:

In the south-western domain contain the Tygerberg Formation, situated between the Atlantic Coast and major faulting, is the result of turbidity currents, possibly on a trench plane with some volcanism.

(b) The Central domain:

The Franschhoek Formation and the Malmesbury deformational patterns are similar in that they have both been infolded with the granites. The higher degree of deformation of the Franschhoek Formation indicates that it is older than the post Malmesbury Klipheuwel Formation.

The Klipheuwel Formation, as a separate formation on its own, not part of the Malmesbury Group, is a molasses-type deposit that is attributed to prograding fluvial deposition on a basement of high relief. In places the formation lies unconformable on granites of the Cape Granite Suite. The Table Mountain Group further overlies it, discordantly.

(c) The North-eastern domain:

This domain is supposed a predominantly marine sedimentation with a geosynclinals setting for the Piketberg Formation. The reason forth is that the lithological types and extensive developments of graded bedding are similar to ancient mariner fans. In lithology the rocks of the Piketberg Formation closely resemble those of the Franschoek formation. (Morkel, 1998)

The Various Coastal Deposits cover mostly the coastal areas; consist of sand, dune and beach sand, mudstone, clay, lignite, limestone, calcarenite, calcrudite, sandstone, conglomerates, and calcareous sand. *Sand Deposits in Swartland Region and* South Western Cape as confirmed by geologist Stephen Davey, are as follows:

- Aeolian Sand – This is wind-blown dune sand is not commercially mined in the Swartland area. Dune sand mined in area of Philippi, Macassar and south of Atlantis and is suitable for plaster and mortar sand despite it not being coarse enough and does not comply with the specifications for concrete sand.

  Aeolian sand that can be used as building sand occurs on the western side of the Berg River between Hermon and Saron.

- Fluvial Sand – Fluvial sand is sand that has been washed down rivers and deposited on river banks or flood plains. Fluvial sand is present on the flood plains of much of the Berg River and its tributaries between Kylemore and Saron and in the proximal portions of the Diep, Modder and Groen Rivers. The fluvial deposits have only been mined on a small-scale for building sand.

- Hill wash and Colluvial Sand – Hill wash and colluvial sand has been moved downslope under the influence of gravity and by surface wash. These processes occur during major storms which cause saturation of the soil followed by surface runoff. The most important sand deposits in the Swartland Municipal area are this type. Hence:

  Yzerfontein – Darling – Mamreweg region contains several isolated building sand deposits which are concentrated south-southeast of Darling, northwest of Darling and along the Groenrivier and Soutrivier, northeast of Darling. Aeolian, fluvial and hill wash sands are present. It is mainly the hill wash sand that has been mined on a small scale in the Darling area. These deposits are located on the lower slopes or at the base of granite hills of the Darling pluton. The sand is used for mortar, plaster and concrete.

Malmesbury – Klipheuwel area has been mined since 1980 and produces the best quality concrete sand in the Western Cape. It is often referred to in the construction industry as "Malmesbury Sand". The sand mostly comprises discontinuous tabular deposits that occur west and southwest of the Paardeberg granite pluton. The hill wash sand deposits range in thickness from 0.2m to 3.0m and have been derived from granite. The hill wash sand normally overlies ferricrete, residual clay of the Malmesbury Group or weathered granite.

6.2.3.1 Natural Resource: Minerals

Lime, sand, laterite and salt are the main mineral resources in the Swartland.

Management directives for mineral resources include:

Protect

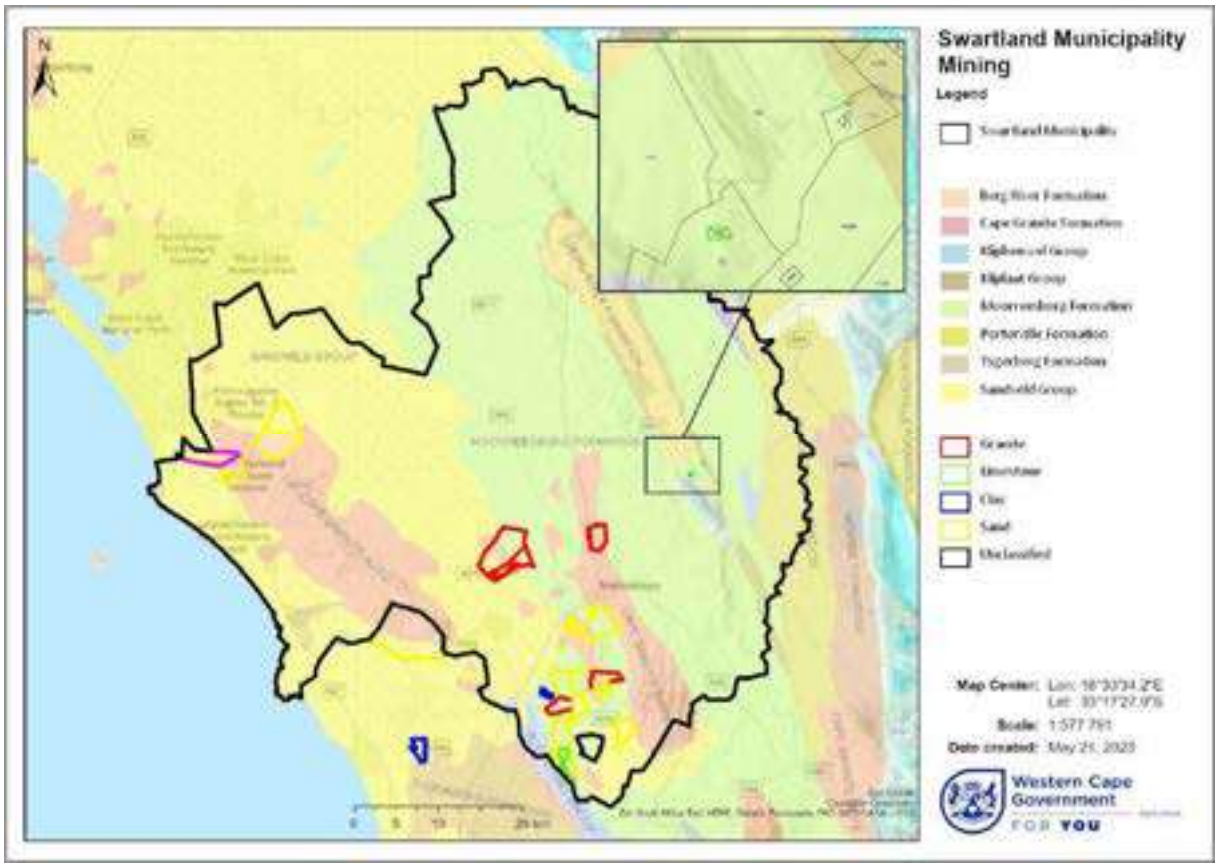
- Protect sensitive environments (visual, agricultural resources, natural, cultural) from the potential impact of mining.
- Map all viable mineral and geological resources for mining.
- Protect and conserve the agricultural landscape and caution mining and forestry where these activities are counterproductive, and in particular sand mining (Wards 4, 6 and 7).

Change

- Support sustainable mining and determine the potential cumulative impacts associated with mining activities on the Swartland landscape. Facilitate mining activities to limit ecological and aesthetic damage (visual intrusion). Rehabilitate ceased mines and as per EMPr.
- Develop guidelines for the assessment of sand mining applications in the Swartland to limit impact on other resources such as the landscape.

- Align mining activities with spatial planning, land use and environmental norms: Ensure the protection of landscape features and natural and agricultural environment during exploitation and rehabilitation.
- Control rehabilitation of mines and ensure continued rehabilitation of mining operations during and after operations, whilst the rehabilitation of mines not previously rehabilitated is promoted.
- Limit potential impact of mine dumps (sand mine heaps) on rural landscape feature. Store overburden on acquired farm next to mine.
- Require compliance to sustainable environmental norms (minimizing economic, environmental and social impacts) in the consideration of mining applications in the Swartland.
- Identify all mineral and geological sources suitable for mining and determine its viability (based on financial viability [i.e., quality of the sand] versus environmental degrading [aesthetic value, tourism, boutique wine industry and intensive agricultural land uses]. Develop a detailed cross boarder Precinct Plan for Paardeberg area (together with Drakenstein and City of Cape Town Municipality) to prohibit mining impact negatively on tourism.
- Assign land use parameters to suitable resources and support the land use changes required for excavating natural resources, applying sustainability norms, mitigate existing impacts, effective rehabilitation and alternative transportation to dispatch product.
- Caution mining activities which is not viable and are counterproductive to the character of the area, particularly sand mining.
- Ensure rehabilitation of mines not previously rehabilitated.

Map 14: Mineral Resources



6.2.3.2 Natural Disaster: Earth Quakes and Floods

None

6.2.3.3 Opportunities: Mining related Industry

Opportunities include related industry development and growth and employment creation.

Mining industry represents less than 1 % of the WC's Gross Domestic Product per Region (GDPR). The geological structure of the Swartland region does not contain any minerals or metals of high value that can be mined economically. The main commodities that are mined in the Swartland region are Granite, Limestone, Sand, Gypsum and Salt. The economic value of mining building sand and clay has to be weighed up against the economic value of the sensitive environment and value of agricultural production. Swartland's close proximity to the Metropole contributes to the demand for building sand as the Construction Industry, is the fastest growing economic sector in the Western Cape.

Brick quarries are no longer in operation and reserves have been most likely depleted or are not of the required quality.

Active Mines (Status & Commodities):

There are twenty-one (21) mines in the Swartland.

The geological structure of the Swartland region does not contain any minerals or metals of high value that can be mined economically. Mining in the Swartland area is limited to - Lime, building sand, building clay, gypsum, salt, granite, kaolin and phosphate. The economic potential of mines within the Swartland is mainly for the mining of building sand and clay, with mining to be sensitive to the environment and agricultural production. The following table describe the existing mines that are found in the Swartland municipal area.

6.2.3.4 Risks: Dust, Colouration and Visual Impact

Risks in the mining industry include:

- Generation of dust that cause colouration of the landscape.
- High visual impact on the magnificent landscape.
- No compliance to rehabilitate.

Environmental Impact Management directives for Mineral zones are outlined below:

Types of developments, land uses or activities

Mineral Resource Risk Management	That should not occur	That may have significant impact	That have no significant impact	Related policies and guidelines
Priority Mineral Resource Areas	No development that is in contradiction with the mine.	Worker's housing	Mine infrastructure.	All guidelines, policies and legislation applicable to the Agriculture and Mineral Industry.

6.2.3.5 Proposals

- Limit sand mining in Swartland to viable operations particularly in areas within zones where conservation and the landscape is promoted.

6.2.4 Vegetation, Fauna, Ecosystems

Biodiversity is the variety of and interaction between plant and animal life in a particular habitat and the interaction between plants and animals (called ecological process and biodiversity patterns).

The Swartland is located within one of the richest biodiversity areas of South Africa and forms part of the Cape Floral Region and one of 34 globally identified biodiversity hotspots. The land is covered with Coastal Renosterveld (or West Coast Renosterveld), Coastal Fynbos (or Salt Plain fynbos), Mountain Fynbos, Strandveld vegetation (or Strandveld succulent Karoo Fynbos) and Dune Thicket.

On the whole these natural veld areas provide a limited contribution to the gross value agricultural production in the region. The veld types do however play an important part to support the local ecosystems.

Although the clearing and cultivation of fynbos areas within the lower lying areas for agricultural use have an economic value the value of fynbos within the mountain areas lie more within its aesthetic and recreational value as well as a freshwater catchment system (Kemper 1999, Jarman 1986, Maitre 1997). The mountain Fynbos provide mainly six primary ecosystem functions to the Western Cape communities which include, water production, harvest of wild flowers, hiking routes, eco-tourism, the conservation value of the endemics and the value of the genetic resources of the plant material (Higging, 1997). Fynbos have a very low biomass, which result in higher water yield. Relative to other plants fynbos reduce crusting and thereby increase groundwater levels and soil fertility. The Fynbos plants also stabilize and anchor river banks, prevent erosion and increase water flow. (Kemper, 1999).

The estimated hydrological, management and economic value of fynbos in a 4km² ecosystem can be as much as R19 to R300 million (Higgins, 1997).The increase in tourism in the Western Cape, with around 1 745 300 foreign visitors to the region during 2014, also increase the economic potential of the ecosystems.

The following different biomes are present:

Forest biome: There is only one natural forest area within the Swartland that occurs in the Kasteelberg Reserve (*Waterval*).

Fynbos Biome: The Fynbos Biome consists of areas with natural veld as well as nature and wild flower reserves. Parker, 2006, predicted that by 2050 losses of 51% to 61% of the fynbos biome can be expected. The degradation of this biome is already visible in the existing natural populations in the Western Cape (Midgley, 2002).

The CWCBR is located within the Cape Floral Region, which contains habitats and vegetation of global significance with conservation worthy status. It is also the intention of the CWCBR to ensure that privately owned areas within the West Coast region with high biodiversity value, receive conservation status and are linked to a network of other conservation areas in the area.

The dominant land uses in the biosphere reserve include agriculture and natural vegetation, with natural vegetation covering the majority of the CWCBR area. In Swartland the urban areas of Yzerfontein and Darling is included in the biosphere reserve as well as a developed infrastructure network within the reserve area. It is recommended that conservation-versus-urban-development should be carefully planned to ensure that a balance is achieved and that one do not restrict the other in an unduly negative way, but to ultimately achieve sustainable development in the region.

6.2.4.1 Natural Resource: Natural Environment (critical and common fauna & flora) and Landscapes

Natural veld within the Swartland region is mainly fynbos veld that occurs in the mountain areas of Darling, Riebeek and Paardeberg. These areas have been conserved due to its' location in rough impassable terrain with low grazing capacity that does not make it practical to be used for agricultural purposes. According to Adcocks (1975) there are four (4) veld types that occur within the natural areas of the sub region, namely:

***Type 34**: Strandveld in the coastal areas occur within the lime rich sandy soils along the coast line of the West Coast from Elands Bay in the north to Bloubergstrand in the south. The veld type contains short shrubs of 1-meter-high consisting of fynbos shrubs, grasses and succulents. Of shrubs such as taaibosse, kersbosse, melkbosse, kniedoring and katdoring occur on the small hills within the area (Adcocks, 1975).*

***Type 47**: The Coastal fynbos veld borders the strandveld and is mainly uses for natural grazing. This veld mainly occurs on the acid sandy soils and consists of shrubs, grasses, fynbos species that include a large component of reeds.(Adcocks, 1975)*

Both of the above veld types have been extensively fragmented by clearing for cultivation, with very few properties that only have natural veld cover. In addition, large areas of these veld types have been invaded by *Acacia salinga* (Port Jackson) and *Acacia cyclops* (Rooikrans) which have further degraded the veld types and reduced the grazing capacity.

***Type 46**: The Renosterveld of the coastal area mainly occur in the heavier soils of the Swartland. It is also this sub region that are the most extensively cultivated, with only small pockets of natural veld that occur on untilled hill and mountain areas. It is estimated that only 30 300ha of this veld type still remain.*

The grazing capacity and palatability of this veld type is very low with the smaller pockets that remain that are not used for extensive grazing. (Adcocks, 1975).

***Type 69**: Fynbos – The 50 400ha of fynbos mainly occur in the mountain areas and consist of fynbos vegetation typed such as Protea species, Ericaceae, Restionaceae, Lilaceae, Gamineae and a large variety of other fynbos vegetation types. The agricultural capacity of this veld type is very low and due to the high value of this vegetation types it is also not recommended that these areas be used for grazing. (Adcocks, 1975).*

Formal and Informal Conservation areas include:

Formal: Riverlands, Kasteelberg, Paardeberg Reserve, Pella Nature Reserve. The adjoining West Coast National Park in Saldanha Municipal area on the north western periphery that impact on West Coast Biosphere Reserve.

Dassen Island Nature Reserve

Informal: *Jakkalsfontein, Tygerfontein, Rondeberg, Grotto Bay, Hans Gift and Riebeeks River.*

Swartland is one of the municipal areas that have the most critically endangered ecosystems, with four (4) of the 21 national endangered ecosystems that occur within the area.

The dominant natural vegetation types within the Swartland region are *Renosterveld* in the eastern part with *Fynbos* in the western part along the coastline. The area to the west of Darling contains the largest natural areas within the Swartland

Endangered vegetation types include:

Critically threatened	**Threatened**
Swartland granite renosterveld	Atlantis sand fynbos
Swartland shale renosterveld	Cape flats dune strandveld
Swartland silcrete renosterveld	Hopefield sand fynbos
Swartland alluvial fynbos	Saldanha flats strandveld
Threatened	Swartland alluvial renosterveld
Atlantis sand fynbos	Boland granite fynbos
Cape flats dune strandveld	Cape inland salt pans
Hopefield sand fynbos	**Vulnerable:**
Saldanha flats strandveld	Langebaan dune strandveld

Management directives for natural environment zones include:

Swartland Municipality lacks a comprehensive system of critical biodiversity area (CBA) corridors of which a large extent is formally or informally conserved.

Connecting ecological corridors and maintaining ecological buffers will mitigate the impact of climate change. Such corridors will support sustainability of natural resources and:

- Preserve the topographical and natural landscapes;
- Preserve the geology and soil;
- Support and strengthen the biodiversity and conservation status of areas;
- Support and strengthen the conservation status of Red Data species and local native species;
- Preserve fresh water resources;
- Preserve groundwater quality;
- Preserve the Marine and Coastal environments;
- Guard the joint capacity of the biophysical environment and prohibit over utilization.

Biodiversity in Swartland includes Fynbos and renosterveld that has a high level of endemism and of fragmentation.

Protect

- The disturbance of ecosystems should be avoided, minimized or restored.
- Any activities being mining, cultivation or business that have an impact on the environment need to comply with regulations of the National Environmental Management Act.
- Allow no development in flood line.
- Maintain environmental setback lines.
- Create open space network along rivers.
- Classify all Renosterveld as Core 1 & 2 areas, as is listed threatened ecosystems that are classified as Critically Biodiversity Areas (CBA's).
- Promote application of spatial planning categories, to facilitate the objective decision making in development applications.
- Establish a register for all the national, provincial and local conservation areas.
- Protect natural assets and resources including; biodiversity, topography, soils and water resources, geology, hydrology.
- Develop in accordance with the identified bio regional planning categories e.g. Core Areas (Dassen, Contre, Kapok, Bonte, Klip, Katkop, Paarde, Porselein, Kasteel, Konon, Tontel, Neulfontein se Berg, Goudmyn se Berg, Oshoekkop, Byeneskop, Wolfkop, Swart and Koring mountains), Buffer Areas (Koring-Paardeberg corridor and Dassen–Klipberg Corridor and along lower mountain slopes and feet & unprotected areas being part of the Biosphere), Intensive Agricultural (Riebeek Valley, Broodkraal) area and urban development.
- Officially categorise Kasteelberg, Swartberg, Koringberg "koppie", Wolfkop, Byeneskop and Oshoekkop, Darling Hills, including Klipberg, Katkop, Kapokberg and Contreberg and all Public and Private Nature Reserve as Core 1 and 2 areas.
- Protect critical Biodiversity Areas, ecological corridors and natural habitats
- Promote Kasteelberg Conservancy and West Coast Conservation Corridor enhancing land management

- Promote the official categorization of all mountains and all Public and Private Nature Reserve as Core 1 and 2 areas: Pela, Riverlands, Paardeberg, Kasteelberg, Jean-Pierre, Hans Gift, Riebeeks River and TienieVersfeld Nature Reserves.
- Provide for ecological links to support connectivity between habitat areas

Change

- Manage conservation areas in accordance with national norms and standards.
- Integrate ecological processes with the needs of the communities to ensure the sustainable use of resources in and around the Mountain areas and along rivers (bioregional planning based on bioregional planning principles).
- Promote alternative and more effective use of conservation areas to allow opportunities for alternative income generation on the farms.
- Promote use of rivers, mountains and other natural features to enhance tourism
- Building Combine tourism and conservation.
- awareness of conservation and cultivation in supporting the annual Wild Flower Show and the Orchid Show.
- Continuously clear alien vegetation.
- Limit internal fences to create a natural corridor.
- Promote and support responsible stewardship of natural resources and environment and conservation area, including mitigation of environmental damage.
- Minimise waste and environmental damage in the food production chain.
- Be cautious where the impacts are unknown and uncertain.
- Act within ecological constraints and preserve critical natural capital that provides for continuous income from ecosystem advantages such as biological diversity, mineral resources and clean air and water.
- Ensure that the joint capacity of the biophysical environment is not exceeded.

Develop

- Link the natural environment in the Swartland Municipal area to the larger network of reserves and conservation areas in the larger region. The western side of the municipal area already forms part of the West Coast Biosphere Reserve (WCBR). Riverlands Nature Reserve south of Malmesbury forms the eastern core of the WCBR with links through corridors to the West Coast National Park.
- Establish landscape and Buffer area or climate change corridor from Koringberg & Swartberg hills (Ward 1) across Tontel, Kanonberg & Swartberg (Ward 3 & 4) including Kasteelberg, Porseleinberg & Paardeberg (Wards 12 & 7) and Darling Hills (Ward 6) that links with Dassenberg and the West Coast Conservation Corridor, West Coast Nature Reserve in the north and Blaauberg Reserve (Cape Town Metropole) to the south
- Promote the establishment of wild flower and nature reserves.
- Provide for recreational opportunities: Hiking, mountain bike trails around and along adjoining hills and mountains, bird watching, horse riding, 4 x 4 trails and clay pigeon shooting, whale watching.
- Develop interface guidelines (use of colours, landscaping, lighting, massing and form) to manage open space & river frontage and routes.
- Determine a development line along foot of mountain (conservation & landscape)
- Delineate Open Space Networks and Conservation Corridors in urban and rural areas to protect natural habitat areas: Conservation Corridors: Dassen, Contre, Kapok, Bonte, Klip, Katkop, Paarde, Porselein, Kasteel, Konon, Tontel, Neulfontein se Berg, Goudmyn se Berg, Oshoekkop, Byeneskop, Wolfkop, Swart and Koringberge.
- Support capacity development of environmental awareness and education

- Develop an Environmental Management Plan for the Swartland
- Implement stewardship programmes in conservation areas.
- Effect management and conservation of catchment areas, clearing of alien vegetation, wetland and river management.
- Provide for development of eco-tourism opportunities and increase awareness.
- Promote risk and disaster management plans.
- Conservation of natural, cultivated & built Swartland landscape.
- Establish buffer conservation area along mountain corridors to ensure effective conservation and management of natural vegetation remnants
- Support landscape features including heritage elements, old farmsteads and tree lanes.
- Prepare to address potential threats to the natural environment

To Protect:

- Protect and promote the agricultural landscape by growing appropriate crops according to the seasons, promoting independence from mainstream crops and livestock production through smaller farm units, alternative land uses promoting conservation of natural and endangered vegetation and alternative income for farmers i.e. resorts and agri-tourism
- Protect unique character of towns
- Continue effective management and maintenance of existing tourist attractions such as Tienie Versveld Wildflower reserve and investigate new tourism opportunities
- Conserve the pristine coastline and provide formal public access to limit the impact on the environment
- Natural areas within towns.
    - Protect critical Biodiversity Areas, ecological corridors and ecosystems.
    - Protect unique natural and manmade landscape features and structures.
    - Protect scenic routes and vistas.
    - Protect heritage features and landscapes. and create future heritage resources through urban design

To change:

- Limit water erosion through protective preparation methods and the planting of perennial crops
- Address loss of, and impact on cultural & heritage resources and improve information about assets
- Improve roadside signage and buildings in sensitive landscapes
- Promote the landscape features of the Swartland as part of the tourism attraction
- Utilise heritage resources as assets that need protection and can be utilised as a tourism attraction.
- Co-ordinate and link rural, urban and agri-tourism opportunities
- Invest in and develop tourism infrastructure (roads and existing services) based on environmental impact assessment considerations
- Provide opportunities where the local community, especially unemployed and disadvantaged people can get access to economic opportunities (arts and crafts, local guides, local food)
- Strengthen and expand tourism routes, festivals (e.g. Rocking the Daisies) and events (e.g. Berg River Canoe Marathon)
- Support agri-tourism opportunities on farms especially in the hills along the Diep and Berg Rivers
- Support and develop socio-economic resources such as wildflowers, unique natural vegetation and existing parks, historical and cultural heritage, landscapes and coastline
- Support and market tourism routes across municipal boundaries.

To Develop:

- Develop unique gateways/entry point features to towns
- Identify Heritage precincts on farms and in towns to ensure appropriate development
- Develop support infrastructure and spaces for festivals, events and celebrations
- Support the development of integrated towns
- Limit the impact of development and urban growth on significant landscape features
- Identify scenic routes and develop special management guidelines.
- Develop a heritage route(s):

Management directives for natural environment and agricultural zones include:

Agriculture and Conservation.

Protect:

- Protect critical biodiversity areas, ecological corridors and natural habitats and provide for ecological links to support connectivity between habitat areas.
- Promote Conservancies enhancing land management.
- Promote the conservation of natural, cultivated & domestic (farm yard) Swartland landscapes; Protect landscape features including heritage elements, old farmsteads, mature trees and tree lanes, changing of seasons reflected in landscape colour and structure.
- Protect scenic routes and vistas and unique natural landscapes.
- Promote erosion (wind and water) prevention and rehabilitation through protective preparation methods and the planting of perennial crops.

Change:

- Establish landscape and buffer areas or climate change corridors: Expand West Coast Biosphere from West Coast Reserve in the North to City of Cape Town Boundary in south and east ward up to Groen River and Paardeberg.
- Support the establishment of Open Space Networks and Conservation Corridors in urban and rural areas to protect natural habitat areas and to mitigate climate change.
- Establish buffer conservation area along mountain corridors to ensure effective conservation and management of natural vegetation remnants.
- Protect and conserve the agricultural landscape through development guidelines.
- Support evolving heritage as tourism destinations such as a cultural and landscape routes.
- Protect the sensitive natural environment and agricultural resources maintaining food security from inappropriate and opportunistic development.

Develop:

- Support development of capacity for environmental awareness and education.
- Support the compilation of an Environmental Management Framework (as part of this SDF) for Swartland
- Promote management and conservation of catchment areas, clearing of alien vegetation, wetland and river management.
- Promote risk and disaster management plans.
- Support the expansion of the statutory wilderness areas in the Swartland region to more than 6% to support the expansion of wilderness areas in the West Coast area.
- Establish buffer areas surrounding wilderness areas and core conservation areas.
- Identify open spaces and land for conservation purposes to protect the diversity of native vegetation.
- Oversee the generation of bioregional planning.
- Listed threatened ecosystems that are classified as Critically Biodiversity Areas (CBA's) included in the SDF.
- Create a register for all the national, provincial and local conservation areas.

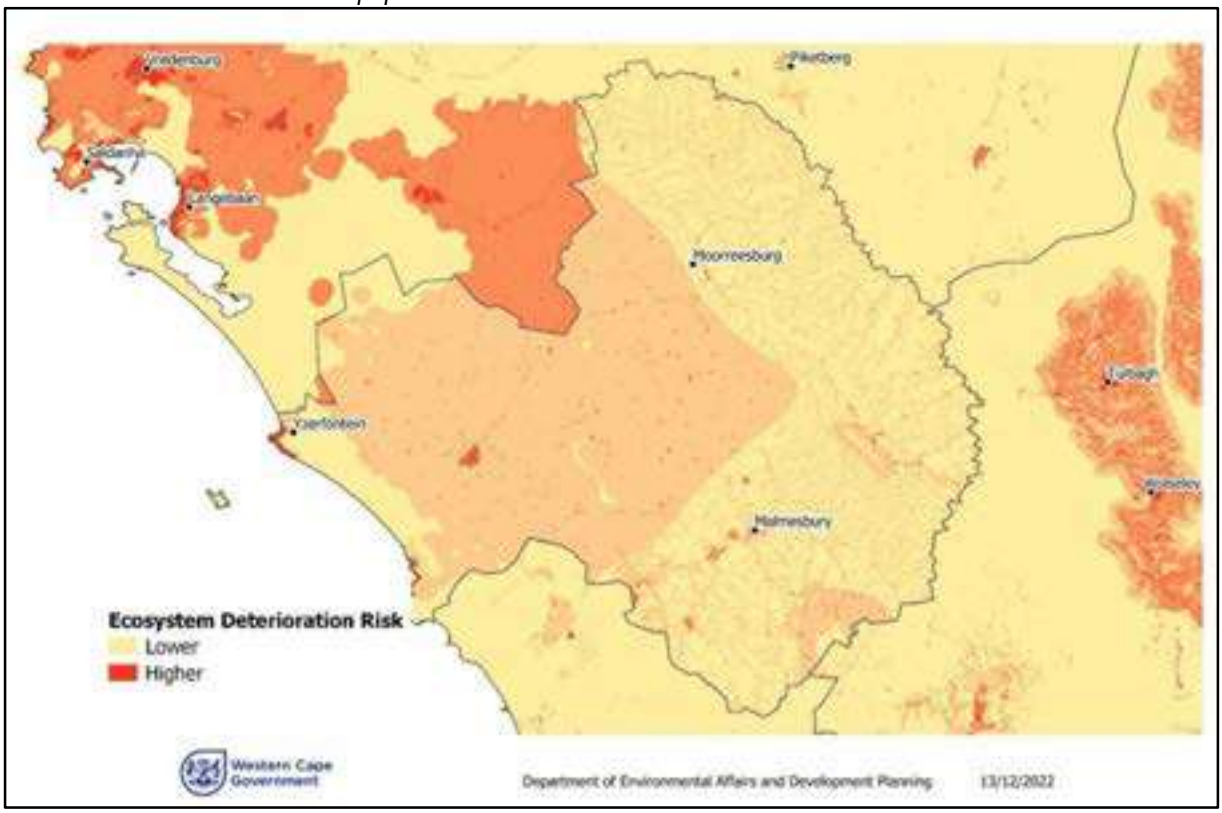
Environmental Impact Management directives for natural environment zone are outlined below:

Management priority	Priority focus areas
Improve and rehabilitate	All management and rehabilitation activities within the biodiversity priority zones, must be set out by the Environmental Management Plans for the identified areas.
Conserve and preserve	Conservation areas designated as biodiversity priority areas as indicated in the Spatial Development Framework, must be retained and preserved. All other impacts on natural veld must be identified and guided by an environmental impact study.
Environmental Impact Assessment Requirements	All proposed impacts that will lead to the clearing of more than 300m² of natural vegetation, where natural vegetation covers more than 75% of the area, must be subjected to an environmental impact assessment and environmental approval must be obtained before the activities may take place. Proposed large scale tourism facilities must be subjected to an environmental assessment and environmental approval must be obtained before the development may take place.
Monitoring and management aspects	All monitoring and management aspects must be set out by a biodiversity environmental management plan, to be drawn up for priority areas.

6.2.4.2 Natural Disaster: Ecosystem Deterioration

Ecosystems Deterioration (Climate change -Theme 1) should be avoided.

Map 15: Ecosystems Deterioration Risk in the Western Cape, highlighting areas where compromised natural features coincide with vulnerable population



6.2.4.3 Opportunities: Tourism and Agri-tourism,

The natural landscape provides a sense of place that reflects the cultural integrity and heritage of the environment. Swartland as a conservation and ecotourism area provide a magnitude of opportunities of which one is an Outdoor Sport and Recreation route. Such a route should encourage outdoor activities (recreational opportunities (hiking and mountain biking in Riebeek Valley, bird watching, wild flower, horse trails in Darling and Yzerfontein and fishing and water sport (e.g., canoeing on Berg River)) and provide for hiking and mountain bike trails on farms, public and private nature reserves. Such a route could include church towns (Riebeek Valley, Koringberg, Darling, Moorreesburg and Malmesbury) and should extent across municipal boundary to e.g., Drakenstein.

The Nature reserves within the municipal areas are divided into 2 categories:

- Formal Conservation areas (long term legally bound);
- Conservation areas and Private Nature Reserves.

The Swartland region is characterised by a variety of unique natural and cultural elements that must be protected in order to ensure continued conservation of these areas. The existing conservation areas are located throughout the region from the coastline in the west to the Berg River in the east.

Formal Nature Reserves

The formal conservation areas include National Parks, Provincial Nature Reserves and Municipal Nature Reserves. The formal nature reserves in Swartland include:

- Riverlands Provincial Nature Reserve;
- Pella Provincial Nature Reserve;
- Kasteelberg Provincial Nature Reserve;
- Paardeberg Municipal Nature Reserve (managed in cooperation with Drakenstein Municipality)
- Yzerfontein Municipal Nature Reserve;
- Groenekloof Municipal Nature Reserve;
- Darling Renosterveld Municipal Nature Reserve;
- Kalbaskraal Municipal Nature Reserve;
- Tienie Versveld Nature Reserve (wild flower reserve managed by SANBI).

Private Nature Reserves

The following Private Nature and Wild Flower reserves were established to ensure the continued conservation of various natural areas within the Swartland:

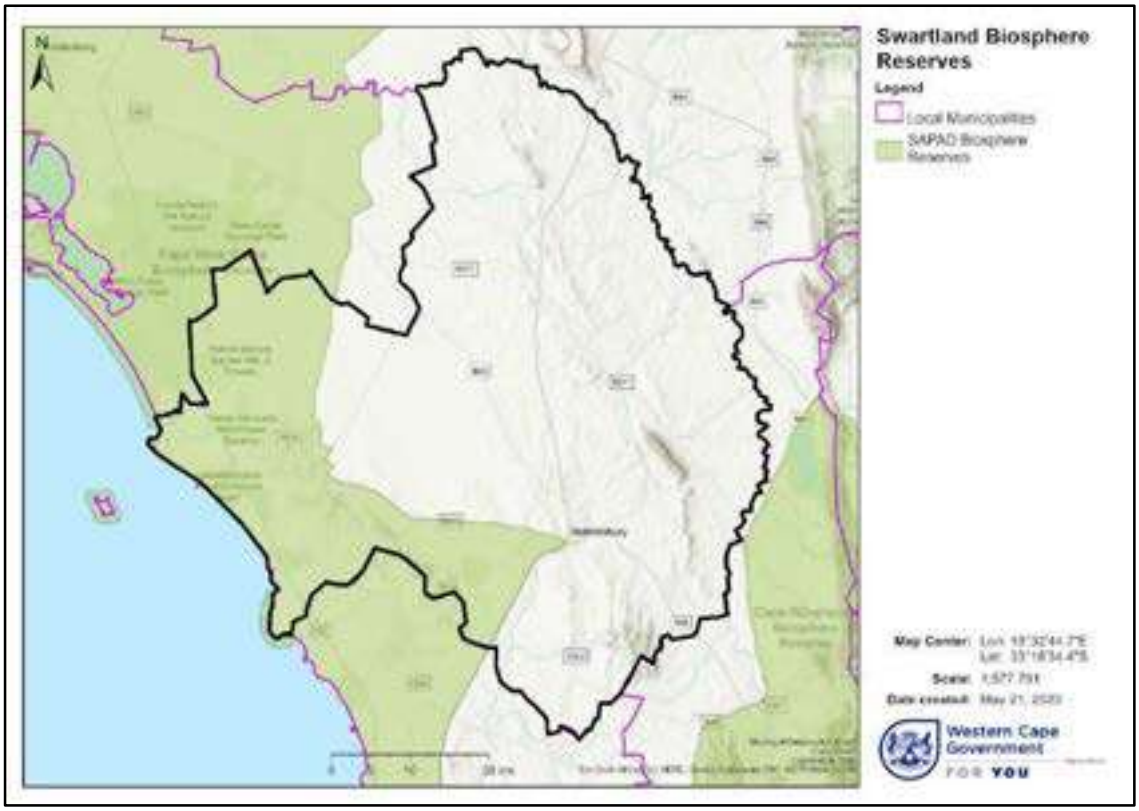
- Oude Post Wild Flower Reserve, Darling;
- Waylands Wild Flower Reserve, Darling;
- Bartholomeus Klip, Private Nature Reserve, Riebeek Valley/Hermon;
- Kalbaskraal Nature Reserve;
- Riebfor Forest Reserve on Kasteelberg.

Many of these areas are located on private land and are under a stewardship program of Cape Nature, with the responsibility of private owners to take responsibility for the sustainable, use, management and conservation of these areas.

- West Coast Biosphere Reserve

The western side of the Swartland Municipal area form part of the Cape West Coast Biosphere Reserve. The Cape West Coast Biosphere Reserve (CWCBR) is an initiative by Cape Nature to facilitate sustainable development along the West Coast through stewardship agreements with private land owners. The CWCBR stretches from Diep River in the Cape Metropolitan Area in the south northwards along the coastline and coastal plains towards the Bergrivier north of Saldanha and Vredenburg..

Map 16: West Coast Biosphere Reserve



Management directives for natural environment and agricultural zones include:

The National Heritage Resources Act, Act 25 of 1999 (NHRA), supports the integration of heritage management and planning functions. Accordingly, and to the provisions of Sections 30 (5) and 31 of this Act, it is the responsibility of the local authority to compile a heritage inventory in its areas of jurisdiction inclusive of heritage resources, landscapes and prominent natural features, which form an important part of the cultural resources and give Swartland its **sense of place of the Swartland** and forms the basis of tourism

Municipalities are responsible for the grading of heritage resources to ensure the effective management and preservation thereof. Grading has to be overseen by the Provincial Heritage Authority. The local authority can, under the Heritage Act, become a heritage authority in the local areas for some of the approved grading. The grading of heritage resources is in three categories: Grade I - heritage resources in the national interest, Grade II – heritage resources in provincial and regional interest, and Grade III – other heritage resources.

Management directives for natural environment zones concerning tourism and Agri-tourism includes:

Conservation and Agri-Tourism
Develop:
Tourism Routes and Destinations:
Develop eco-tourism opportunities and increase awareness.
Promote recreation: Hiking, Cycling/mountain biking, Fishing.
Promote Resorts: Camping, caravan parks, hot springs and game reserves.
Promote Nature reserves (provincial and local) located in the Municipality including:

- Grotto Bay Private Nature; and,
- Jakkalsforntein Private Nature Reserve,
- Rondeberg Private Nature Reserve
- 16 Mile Beach Protected Area
- Buffelsfontein Game Reserve
- Pierre Jean Gertse Nature Reserve
- Sonquasfonteing Wildlife Private Nature Reserve
- Tienie Versveld Wildflower Reserve
- Darling Renosterveld Nature Reserve
- Darling Veldblomme Nature Reserve
- Paardeberg Nature Reserve
- Simon-Simons Nature Reserve
- Bowwood Reserve
- Voldeling Reserve
- Riverlands Nature Reserve
- Burgers Post Nature Reserve
- Kalbaskraal Nature Reserve

Forest Act Protected Area:

- Riebfor Forest Reserve;

Include tourism sites and heritage resources found throughout Swartland as part of proposed routes or festivals:

Promote tourism strategy being revised regularly:

- Promote the link between rural, urban and Agri-tourism opportunities. Map farms offering tourism opportunities and link them as part of wider tourism routes.
- Promote effective management and maintenance of existing tourist attractions such as the Tienie Versfeld Wildflower Reserve and investigate new tourism opportunities.
- Provide for tourism infrastructure (roads and existing services), based on environmental impact assessment considerations.
- Provide opportunities for the local community, especially unemployed and disadvantaged people, to access to economic opportunities (arts and crafts, local guides, and local food).
- Support Agri-tourism opportunities on farms especially along the Berg, Dieprivier, No Go, Swart, Groen, Dwars, Modder, Salt and Brak Rivers and in the surrounding hill and mountains ranges.
- Promote the use of socio-economic resources such as the wildflowers, unique natural vegetation and existing parks, historical and cultural heritage, landscapes and coastline.
- Strengthen and expand tourism routes, festivals (e.g., Grain Route, Wine & Olive route, Outdoor Sport & Recreation Route, Religious Route, Spring flower & Wild flower route, Swartland Meander).

- Support the development of water resources for sport and recreation. Provide specifically for pick nick areas on and in the water.
- Promote infrastructure that will support the local tourism industry in urban and rural areas.
    - Delineate zones and routes related to agriculture and tourism & support farm stays and tourism accommodation in these zones and along these routes.
        - Development of guidelines for resorts along Berg River, other rivers in Swartland and the coastline.
        - Encourage Film industry uses (business tourism).
    - Conserve the pristine coastline and provide formal public access to limit the impact on the environment.
- Grow Swartland as part of the bigger West Coast region and conservation tourism: Birdlife – Dassen Island; Wildflowers – Darling

Agri-Tourism

- Promote development of infrastructure (private and public), facilities and accommodation on farms that support tourism routes and freight networks, including farm stalls (leisure tourism) and Agri-processing (business tourism) informed by environmental impact assessments where required.
- Support tourism accommodation, leisure accommodation and resort development along tourism routes, on farms and along waterways and water sources e.g., Berg River.
- Incorporate heritage resources as part of festivities.
- Strengthen value chain and support tourism development on farms as an additional source of income:
- Capitalise on recreation and sports events as commercial opportunities e.g., Berg River canoe marathon and enhance opportunities for canoeing, fishing and water sports.
- Strengthen tourism routes between Swartland and neighbouring municipalities.

- Provide opportunities where the local community, especially unemployed and disadvantaged people can get access to economic opportunities (arts and crafts, local guides, local food).
- Strengthen and expand tourism routes, festivals and events supported by cross boarder activities between Swartland and neighbouring municipalities.
- Support Agri-tourism opportunities on farms especially along the Berg River and other rivers.
- Support and develop socio-economic resources such as unique natural vegetation and existing parks, historical and cultural heritage, landscapes (vineyards & orchards & horses) and mountains.

Develop:

In rural and urban areas with economic potential, develop opportunities and promote growth in the following:

- Re-orient existing agricultural model to allow for the creation of smaller agricultural units and co-operative farming in rural areas.
- Capitalise on mild climate: Hot dry summers and mild wet winters: mild Mediterranean climate: October – April: Hot dry summers (30°C) May – August: Mild wet winters (20°C).
- Promote development of infrastructure (private and public) and facilities on farms that support freight networks, including Agri-processing and storage.
- Development of guidelines for Berg River resorts.

Adapt economic activities dependent on natural biodiversity i.e., tourism and agriculture. (West Coast Biosphere and informal areas, Yzerfontein as coastal towns and agricultural enterprises in the Swartland):

- Enhance the diversification of economic activities cognisant of the challenges and opportunities related to climate change and facilitate incentives and disincentives for such economic activities.

- Adopt climate compatible economic and tourism activities;
- Protect remnant natural resources, spatial planning and building approvals are to protect the biodiversity elements – take coastal management lines into consideration.

Address vulnerabilities in the local economy (Fishing industry, agricultural and tourism):

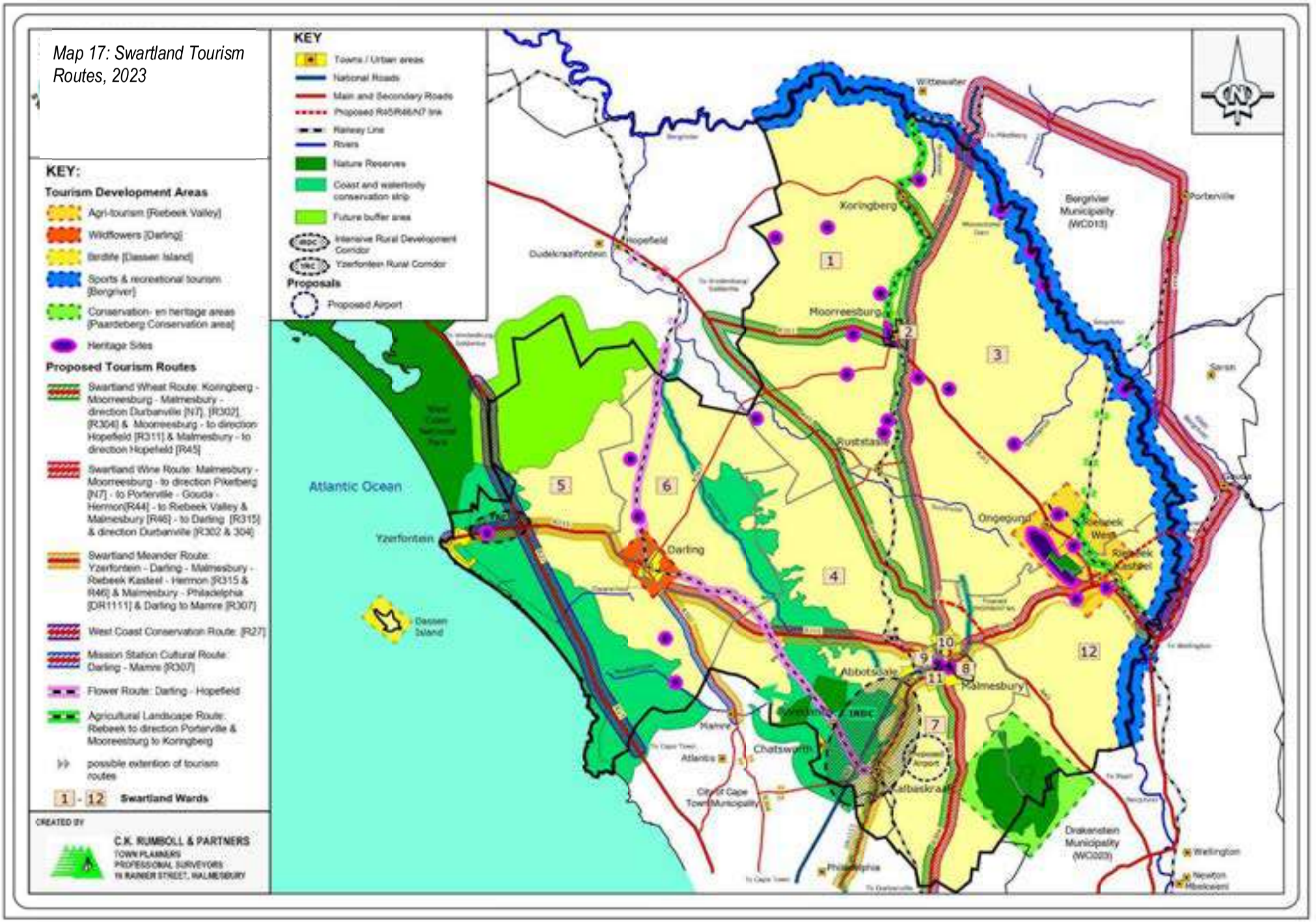
- Diversify of activities,
- Strengthen municipal and communal disaster risk management and preparedness.
- Find & support alternative resources for energy and adopt renewable energy technology.
- Create conditions favourable for entrepreneurs to strengthen the local economic base.

Identify new habitat areas as replacements for existing areas that will become climatically unsuitable and strengthen the natural functioning of ecosystems to maintain the sustainability of the natural resources:

Grain Route	Establish a grain route around and between Koringberg, Moorreesburg, Riebeek Valley, Malmesbury and Darling and surrounding rural areas. Include farms, silos, mills, museums (particularly Moorreesburg Museums, one of three grain production museums), and industries that tell the story of grain production in the Swartland. Restore historical Moorreesburg grain mill. Include lime kilns at Yzerfontein and springs (water) at Koringberg (spring on Brakfontein, used by Khoisan leader, "Harry die Strandloper), in and around Malmesbury (De Bron, spring in Lewis Store and Schoonspruit), in Abbotsdale (still being use for doing washing) and Yzerfontein, Extend grain route across and between municipal boundaries (Drakenstein, Bergrivier& City of Cape Town). Promote different modes of movement including a tourist train route between Paarl (Drakenstein) and Porterville (Bergrivier) via Riebeek Valley (across municipal boundaries)
Wine & olive route	Promote Koringberg, Riebeek Valley, Paardeberg and Malmesbury and Darling as tourist destinations representing classic and Garagiste wineries: Promote Biodiversity and Wine Initiative supported by well-known cellars like Grootte Post, Cloof Wine Estate, Darling Cellars and Alexanderfontein, Allesverloren, Pulpit Rock, Mullineux & Leeu Family Wines, Riebeek Cellars and Kloovenburg and cellars in the Paardeberg. Support and strengthen Riebeek Valley-Yzerfontein, West Coast route along the R 45 and315, as main tourist route in Swartland (east west direction) as it links to the R27 and the Swartland Meander (Old Cape Road), (north south direction). Protect the natural Swartland wine landscape with Kasteelberg, Koringberg, Darling Hills, Boland mountains and Berg River meandering on the western boarder and Paardeberg (as ecotone where three biomes meet) as backdrop to wineries. Establish intensive rural development corridor as a tourist destination with the Swartland Meander (from Malmesbury to Philadelphia on Old Cape Route) as the main tourist route in the corridor.
Outdoor Sport & Recreation Route	Development of a Swartland Outdoor Sport and Recreation route: Encourage outdoor activities (recreational opportunities (hiking and mountain biking, bird watching, wild flower, horse trails and fishing and water sport (e.g. canoeing on Berg River)) and create hiking trails, mountain bike trails on farms, public and private nature reserves: in and around Paardeberg, in Paardeberg Reserve linked to Proseleinberg (Ward 12), Kasteelberg and Tontelberg (Ward 3)), Greater Chatsworth and Riverlands Nature Reserve and Greater Chatsworth area, linked to Pella Reserve.

Religious route (6)	Develop a religious route including church towns and mission stations: Malmesbury (c1743) (oldest church town in Swartland), Moorreesburg (c1898), Darling (c1853), Abbotsdale (c1856), Riebeek West (c1858), Riebeek Kasteel (c1863), (the church museum is in Riebeek Kasteel), Kalbaskraal (c1898) and Koringberg (c1923), Greater Chatsworth's and Darlings connection to Mamre Mission Station (R315 and 307 link)(across boarder) and across municipal boarder to Goedverwacht and Wittewater.
Spring flower & Wild flower route	Strengthen Spring and Wild flower route and include public and private nature reserves and surrounding natural areas: Tienie Versveld Wild Flower Reserve, Darling Renosterveld Reserve and Groenekloof Reserve, Paardeberg. Extend Wild Flower and Nature Reserves and Wild Flower route between Darling and Yzerfontein. Develop scenic route from Malmesbury via the R304 to Philadelphia (Swartland Meander). Include the Riverlands Nature Reserve and surrounding natural areas. Develop the Darling Wildflower Society Centre and Herbarium and educational facility on the Groenekloof Reserve. Harvest wild flowers as activity forming part of spring flower route attraction
Swartland Meander	Develop a Swartland Meander along the Old Cape Road as the eastern edge of the Intensive Rural Development Corridor. Allow for more tourism related facilities to develop around these routes (accommodation, recreation facilities, Agri-processing and selling of products venues, etc.) Promote and strengthen as a prominent Agri-processing related tourism destination in the Swartland.

Map 17: Swartland Tourism Routes, 2023



An Environmental Management Framework for Natural Environment Zones are outlined below:

Management priority	Priority focus areas: Cultural and Recreation Resource Zone
Improve and rehabilitate	Rehabilitate buildings that have culturally historical value.
Conserve and preserve	Manage, rehabilitate and preserve culturally historical landscapes, graves, monuments, etc. as described under the Heritage and Cultural Law.
Environmental Impact Assessment Requirements.	All monitoring and management aspects must be set out by an environmental management plan to be drawn up for biodiverse priority areas. The assessment process will determine what impacts may occur on the cultural-historical aspect.
Monitoring and management aspects	Specialist studies will identify monitoring and management aspects. These must be included in the Environmental Management Plan, which will regulate the management and monitoring of all cultural historical areas.

Management directives for natural environment zones concerning landscapes and settlements includes:

Landscapes

Change:

- Preserve the character of the Swartland, inclusive of the unique landscape of the West Coast and extensive and intensive agriculture.
- Promote information about heritage resources and prohibition of loss of, and impact on cultural & heritage resources.
- Promote improved roadside signage and buildings in sensitive landscapes.
- Promote and protect the landscape (natural and heritage: particularly the wheat fields and vineyards) features of the Swartland as part of the tourism attraction.
- Promote the utilization of heritage resources as assets that need protection and can be utilised as a tourism attraction.
- Promote tourism to develop sensitively and contribute to the protection of the landscape and heritage landscape.
- Map landscape, incorporate in tourism maps and promote the protection of these landscapes.
- Promote the planting of trees by all households settled within Swartland.
- Protect mature trees in settlement and rural areas.
- Promote the:
    - Declaration of special heritage planning areas.
    - Protection of heritage resources and creation of areas with a fresh or new sense of place through urban design and rejuvenation. Support the restoration of historic spatial patterns and the effective and efficient use of existing infrastructure.
    - Issuing development and no-development instructions.

- Submit an inventory of heritage resources and the heritage overlay zones to the relevant provincial heritage authority for formalization. The inventory should include historic buildings and structures, archaeological resources and heritage landscapes.
- Preserve historic buildings, structure, significant historic farms, significant historic spaces, trees (indigenous and alien) and activities or practices and guide public sending.

- Preserve natural (including mature trees), built and cultural resources.

Develop:

- Develop understated, unique gateways/ entry point features to settlements.
- Map heritage areas on farms and in settlements to ensure appropriate development.
- Develop support infrastructure and spaces for festivals, events and celebrations.
- Support the development of integrated settlements and establish precincts with a fresh or new sense of place.
- Limit the impact of development and urban growth on significant landscape features.
- Promote scenic and heritage routes and the development of special management guidelines.
- Develop conservation areas as tourism destinations: Conservation Route (R27); Flower Route: Darling – Hopefield; Conservation & Heritage area: Paardeberg & Kasteelberg Conservation Area
- Support evolving heritage facilities as tourism destinations: Mission Station Cultural Route: Darling Mamre

Settlements and Rural Settlements and Sense of Place

Develop:

- Support farm owners to develop Agri-villages for their workers. These erven will become worker owned. The Agri-villages can either be on farms or on municipal land in townships. Funding is available for either. Enrol farmworkers on housing waiting list.
- Promote urban agriculture: Make land available in urban areas for community gardens.
- Harvest storm water to cultivate community gardens.
- Develop design and development parameters to protect settlement patterns and visual landscape: Conserve historical town centres often determined by the location of drinking water or a church and grid layout pattern.
- Develop interface guidelines (use of colours, landscaping, lighting, massing and form) to manage open space & river frontage and routes.
- Protect unique character of settlement and within settlements.
  - Protect critical biodiversity areas, ecological corridors and ecosystems.
  - Protect unique natural and manmade landscape features and structures.
  - Protect scenic routes and vistas.
  - Protect heritage features and landscapes and create future heritage landscapes.

An Environmental Management Framework for the natural environment is outlined below:

Management priority	Priority focus areas: Conservation & Biodiversity Zone
Improve and rehabilitate	All management and rehabilitation activities within the biodiversity priority zones, must be set out by the Environmental Management Plans for the identified areas.
Conserve and preserve	Conservation areas designated as biodiversity priority areas as indicated in the Spatial Development Framework, must be retained and preserved. All other impacts on natural veld must be identified and guided by an environmental impact study.
Environmental Impact Assessment Requirements	All proposed impacts that will lead to the clearing of more than 300m² of natural vegetation, where natural vegetation covers more than 75% of the area, must be subjected to an environmental impact assessment and environmental approval must be obtained before the activities may take place. Proposed large scale tourism facilities must be subjected to an environmental assessment and environmental approval must be obtained before the development may take place.
Monitoring and management aspects	All monitoring and management aspects must be set out by a biodiversity environmental management plan, to be drawn up for priority areas.

6.2.4.4 Risks: Impact of Agricultural and Mining Production and Technology

Management directives for natural environment zones include:

Netting, tunnels and agricultural industry and public utilities.

Change:

The erection and location of poly tunnels and agricultural shade netting or/ and the establishment of an agricultural industry on a farm of 2000 m² and more in extent should address concerns of adverse impacts on visual, cultural and heritage amenities and the Municipality may require repositioning, screening and any other measures which may address negative adverse impacts whilst taking cognisance of the importance of agriculture and food security

The decommissioning of poly tunnels and agricultural shade netting is required. The conversion of Agri-industrial buildings for a different purpose instead of demolishing of such infrastructure instead of demolishing should address again concerns of adverse impacts on intensity of surrounding use (traffic, movement, noise) character (sense of place) and cultural and heritage amenities.

An adverse impact on surrounding properties, in respect of, but not limited to, noise, traffic congestion, pollution, emissions or the gathering of large numbers of people, or the presence of people hindering

agriculture e.g., during spraying season, nor may the tourist activities have an adverse impact on any *bona fide* agricultural activities on the farm itself or on neighbouring properties.

Municipality shall impose conditions relating to the period of validity, other operational requirements, as well as future rehabilitation of the mine after closure.

Fences comprising of only wire or steel palisade (painted charcoal, black or dark green), not exceeding 2,1m are allowed. No masonry wall exceeding 1 meter and no brick piers shall be permitted in wire or steel palisade fences and only the entrance gate structure maybe of solid brick structures in moderation.

Public Utilities:

- Promote communication corridors and zones, improved communication networks and promote access to information & technology including access to internet prioritizing rural areas
- Support the establishment and sensitive location of communication network facilities/ data centres / telecommunication towers, pylon and high voltage overhead electricity lines, bulk water pipelines and main road networks on farms and in rural areas and protect the Swartland rural landscape.
- Provide for adequate bulk infrastructure and the location thereof according the change directives above,
- Support the provision of improved communication networks to rural areas and farms – to give people living and working on the farms easy access to internet services and access to information (information services) and more job opportunities
- Strengthen communication network – improve access to information in rural areas and support development of information centres on farms
- Strengthen existing tourism facilities & infrastructure in urban area
- Support infrastructure that will support the local tourism industry
- Develop unique tourism information boards for the towns

An Environmental Management Framework for the natural environment is outlined below:

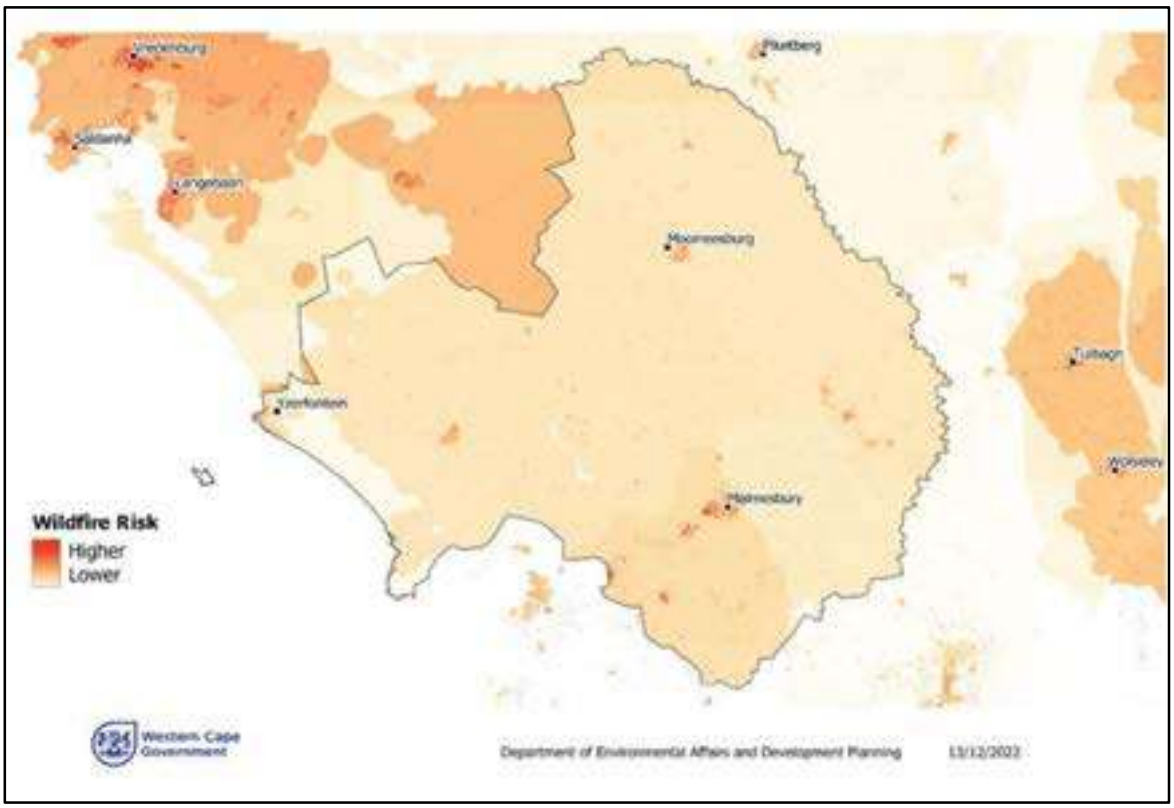
Types of developments, land uses or activities				
Conservation and Critical Biodiversity Areas	**That should not occur**	**That may have significant impact**	**That have no significant impact**	**Related policies and guidelines**
Conservation areas	Developments that are not focused on eco-tourism.	Developments that are not focused on eco-tourism.	Eco-tourism developments.	Environmental Impact Assessment and Guidelines. Provincial Spatial Development Framework for the Western Cape Province. All legislation with an environmental aspect and corresponding regulations, policies and guidelines.
Critical Biodiversity Areas 1	Developments that are not closely focused on eco-tourism.	Developments that are not focused on eco-tourism.	Eco-tourism developments.	
Critical Biodiversity Areas 2 (Rehabitable & irreplaceable areas)	Developments that are not closely focused on eco-tourism.	Any developments that are not focused on eco-tourism.	Eco-tourism developments.	
Critical Ecological Support Areas. **Other Ecological Support Areas**	Developments that are not closely focused on eco-tourism.	Residential Developments, Commercial and Industrial Developments. High intensity agricultural activities.	Services distribution. Limited development after Environmental Impact Assessment has determined the guidelines.	
Other Natural Vegetation Areas	Uncontrolled development.	Residential Developments, Commercial and Industrial Developments. High intensity agricultural activities.	Residential Developments, Commercial and Industrial Developments.	

Cultural & historical areas	Types of developments, land uses or activities			
Environmental Impact management	**That should not occur**	**That may have significant impact**	**That have no significant impact**	**Related policies & guidelines**
Towns	Demolition of historical buildings. Any negative impacts on buildings or sites that have cultural or historical values.	Any development.	Restoration of buildings for offices, guest houses, etc.	Cultural and historical legislation, policies and guidelines.
Landscapes	Uncontrolled, unsightly development.	Uncontrolled, unsightly development.	Limited, low-density development that is not visually apparent and adds value to the environment.	Cultural and historical legislation, policies and guidelines.
Historical areas	Uncontrolled, unsightly development.	Uncontrolled, unsightly development.	Limited, light density development that is not visually apparent and adds value to the environment.	Cultural and historical legislation, policies and guidelines.
Scenic routes	Uncontrolled, unsightly development e.g., wind farms	Uncontrolled, unsightly development.	Limited, light density development that is not visually apparent and adds value to the environment.	Cultural and historical legislation, policies and guidelines.

Public open spaces*:*	**That should not occur**	**That may have significant impact**	**That have no significant impact**	**Related policies and guidelines**
Structured open spaces & networks	Commercial, Industrial or residential developments.	Commercial, industrial or residential developments.	Limited development.	Environmental Impact Assessment and Guidelines. Provincial Spatial Development Framework for the Western Cape Province. All legislation with an environmental aspect and corresponding regulations, policies and guidelines.

6.2.4.5 Proposals

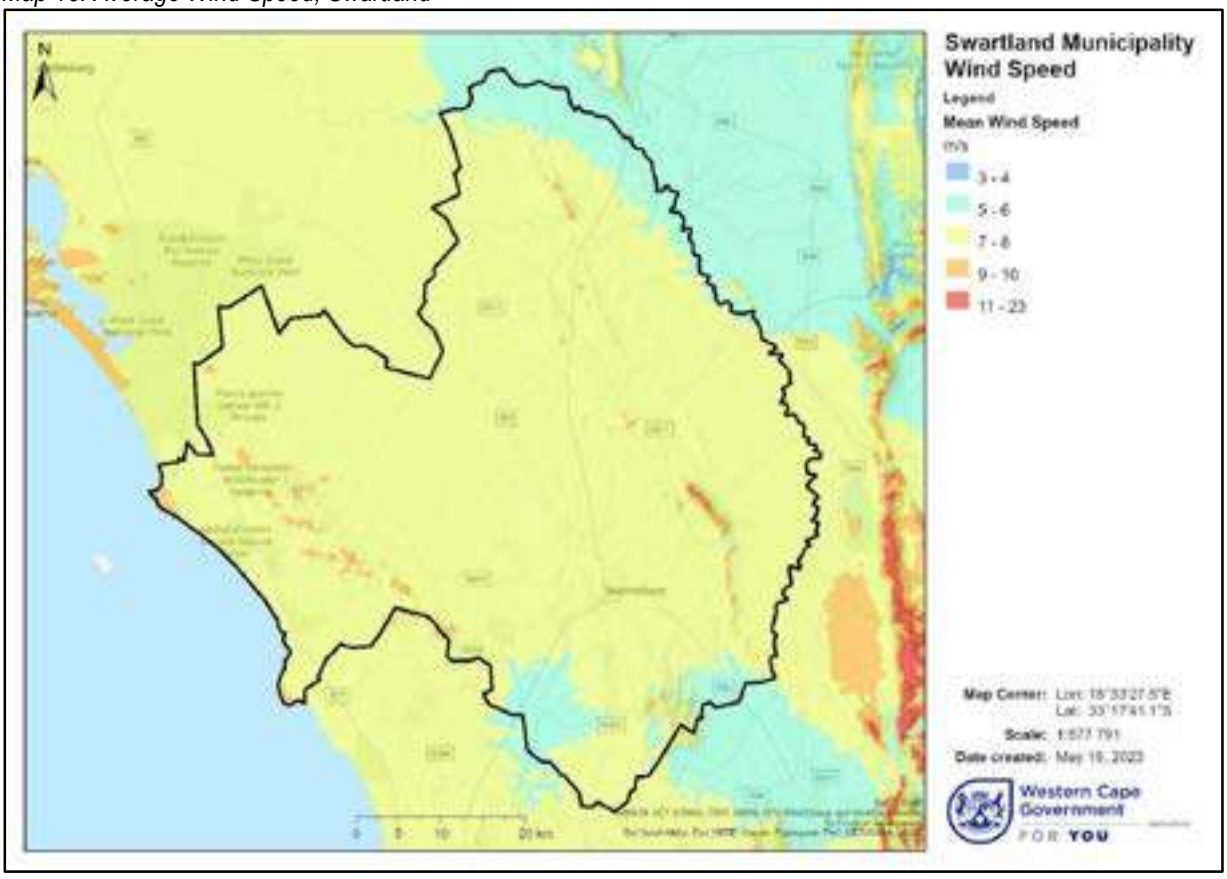
- Expand West Coast Biosphere over entire coastal area and below the R315 and R45 to Paardeberg.
- Promote conservation corridors across municipal boundary and particularly towards the City of Cape Town and Saldanha.



6.2.5 Air & Wind

6.2.5.1 Natural Resource: Air and Wind

Map 18: Average Wind Speed, Swartland



6.2.5.2 Natural Disaster,

Cyclones and Tornados, which is unlikely.

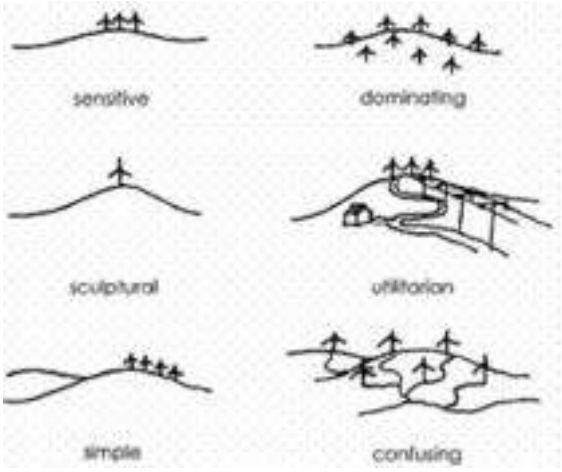
6.2.5.3 Opportunities: Alternative Energy

Alternative energy sources mitigate climate change and air quality contribute to good health.

Management directives for air and wind include:

Alternative energy from wind and solar facilities:

- Promote alternative energy generation facilities in viable zones only.
- Protect Surface & Groundwater: Design of roads and treatment of runoff from roads and disturbed surfaces, to reduce sedimentation and eliminate erosion. Prohibit potential for erosion and soil types influence caused by road construction and re-vegetation.
- Detailed vegetation assessment needed if the proposal is not in an agriculturally disturbed area; Assessment should include location and condition of:
    - Extent of disturbed or alien vegetation.
    - Extent of any natural vegetation.
    - Indigenous and endemic species.
    - Rare and threatened species.
- *Consider the following for terrain suitability:*
    - Slopes by gradient classes.
    - Rocky areas.
    - Soil type and permeability
    - Natural watercourses and areas with high water tables, rainfall data.
    - Vegetation.
- Require highly stable underlying geology for heavy wind turbines and concentrated sun facilities: Investigate existence of bedrock, subterranean voids and possible seismic activity.
- *Consider placement on Slopes given impact on:*
    - Wind Potential – slopes, up to a certain gradient, orientated towards prevailing wind directions, tend to augment average wind speed;
    - Solar radiation – slopes influence placement and various technologies require different placement direction.
    - Visibility – wind and solar farms on slopes have increased visibility;
    - Road layout and design – slopes to be considered in road layout to reduce erosion potential, of road run-off, rock-fall and landslide potential;
    - Tower foundation/ pedestal design – needs to consider falls across the platforms;
    - Soil stabilization – steep road verges and cuts require re-vegetation to reduce erosion from run-off.



Location options for wind turbines

6.2.5.4 Risks: Air Quality

Poor air quality compromises people's health (Climate Change Theme 5) and livelihoods - specifically when exposure to atmospheric pollutants leads to respiratory diseases, which indirectly weakens immune systems and reduces optimal functioning. Poor health, in turn, increases vulnerability to the impacts and effects of

other, unrelated threats brought about by disasters or economic hardship, such as extreme weather conditions or food shortages.

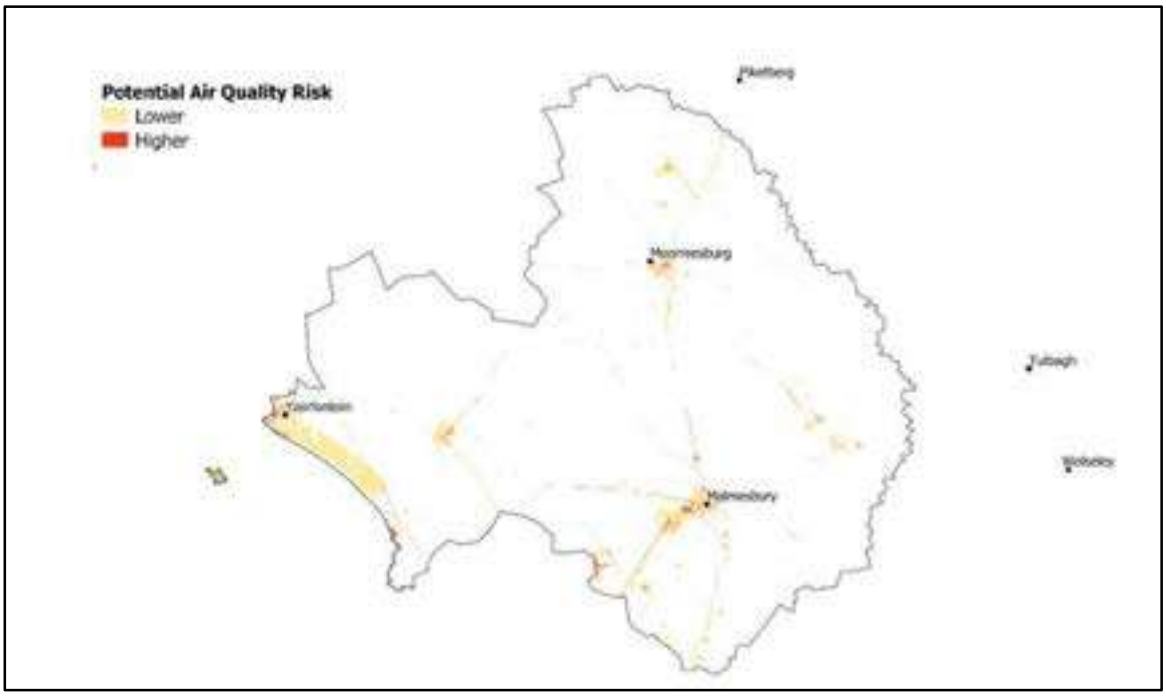
A map of potential risk, i.e., combining air pollution hazard with vulnerability, is generated by multiplying a vulnerability index with the values from potential emissions factors calculations (Figure below). The map shows how the potential hazard (count of potential emissions source types) and vulnerability interact to generate a picture of the relative risk of experiencing impacts from poor air quality.

Susceptibility to respiratory infection, on the other hand, is not mapped directly by authorities, but the CSIR has compiled a health index at census enumerator area scale for the purposes of mapping COVID-19 related risk 7 based on a combination of values for:

- Poverty
- Age
- Child mortality
- HIV
- Life expectancy

This index is used to highlight where communities are most likely to have high sensitivity to poor air quality from a health risk perspective.

Map 19: Relative index of air quality related risk



Management directives for air and wind include:

Air Quality and Wind

Develop:

Where information is available or where emission factors can be applied to quantify emissions, an emissions inventory for air pollution sources has been compiled for the WCDM. Potential air pollution sources in the Swartland have been identified as:

- *Industrial operations* - mainly emissions from small boiler sources and larger industry such as canning factories and lime mining.
- *Agricultural activities* - although not quantified, agricultural activities are considered to be a contributor to ambient particulate concentrations. Agriculture is a dominant land-use within the Swartland.
- *Mining Activities* – Mining activities, yet to a limited extent. Pollution sources are mainly surface activities like waste loading and unloading, resource loading and unloading, exposed screening plants, waste dumps, stock yards, exposed pit surfaces, transport roads and haul roads.
- *Biomass burning (veld fires)* - also not quantified, owing to the irregular and seasonal nature of this source.
- *Domestic fuel burning* - mainly wood and paraffin burning in informal settlements: Silvertown at Chatsworth, Malmesbury and informal farmers at Malmesbury are the largest contributors to domestic fuel burning emissions, mainly due to the predominant use of wood.
- *Vehicle tailpipe emissions* - from petrol and diesel vehicles along major roads but this is not considered to be a significant air pollution source.
- *Waste Treatment and Disposal* – information regarding disposal facilities (landfills and incinerators) has been partially collected.
- *Dust from paved and unpaved roads*.
- *Other fugitive dust sources such as wind erosion of exposed areas*.
- Particulate and gaseous emissions from industrial operations, domestic fuel burning and vehicle tailpipe emissions have been quantified for this assessment (See SANS 1929:2005 - Ambient Air Quality - Limits for common pollutants and National Environmental Management: Air Quality Act 39 of 2004).

Air quality can decrease because of increased temperatures, greenhouse gas emissions and demand for local fuels. Impacts associated with climate change and the failure to implement mitigation measures may result in increased air pollution episodes. Measures to address climate change include increasing the number of monitoring stations in the Western Cape, effective dissemination of air quality information and introducing cleaner fuel programmes for households and transport.

Develop

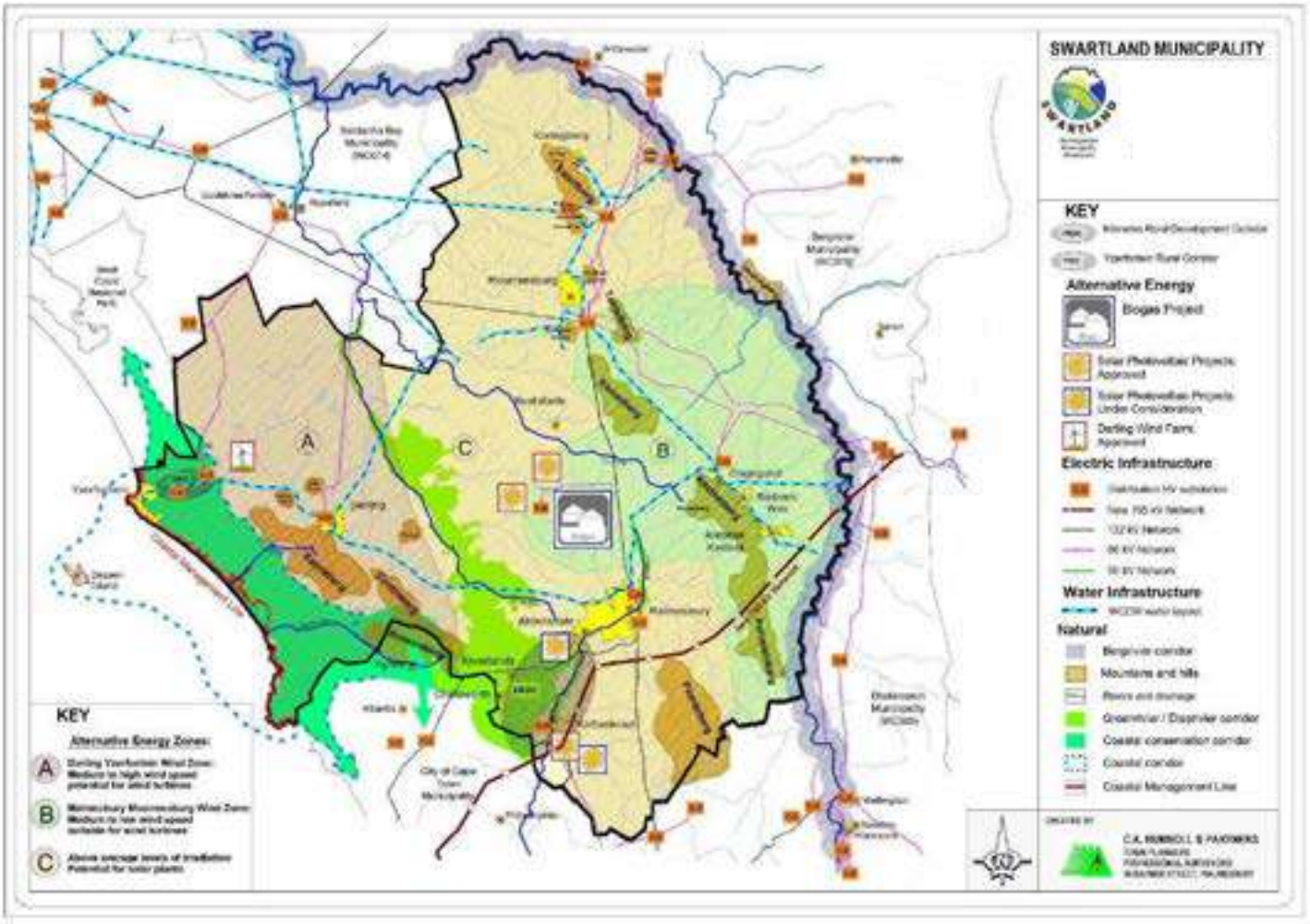
Support Swartland Municipality to:

- Identify priority pollutants (in terms of its by-laws).
- Establish Local air quality standards (more stringent).
- Establish Local emission standards.
- Appoint Local Air Quality Officer.
- Develop an Air Quality Management Plan (AQMP) as part of their IDPs.
- Monitor ambient air quality.
- Prepare an annual report regarding the implementation of the AQMP.

6.2.5.5 Proposals

Promote planting of trees and plants that keeps air clean as part of every development.

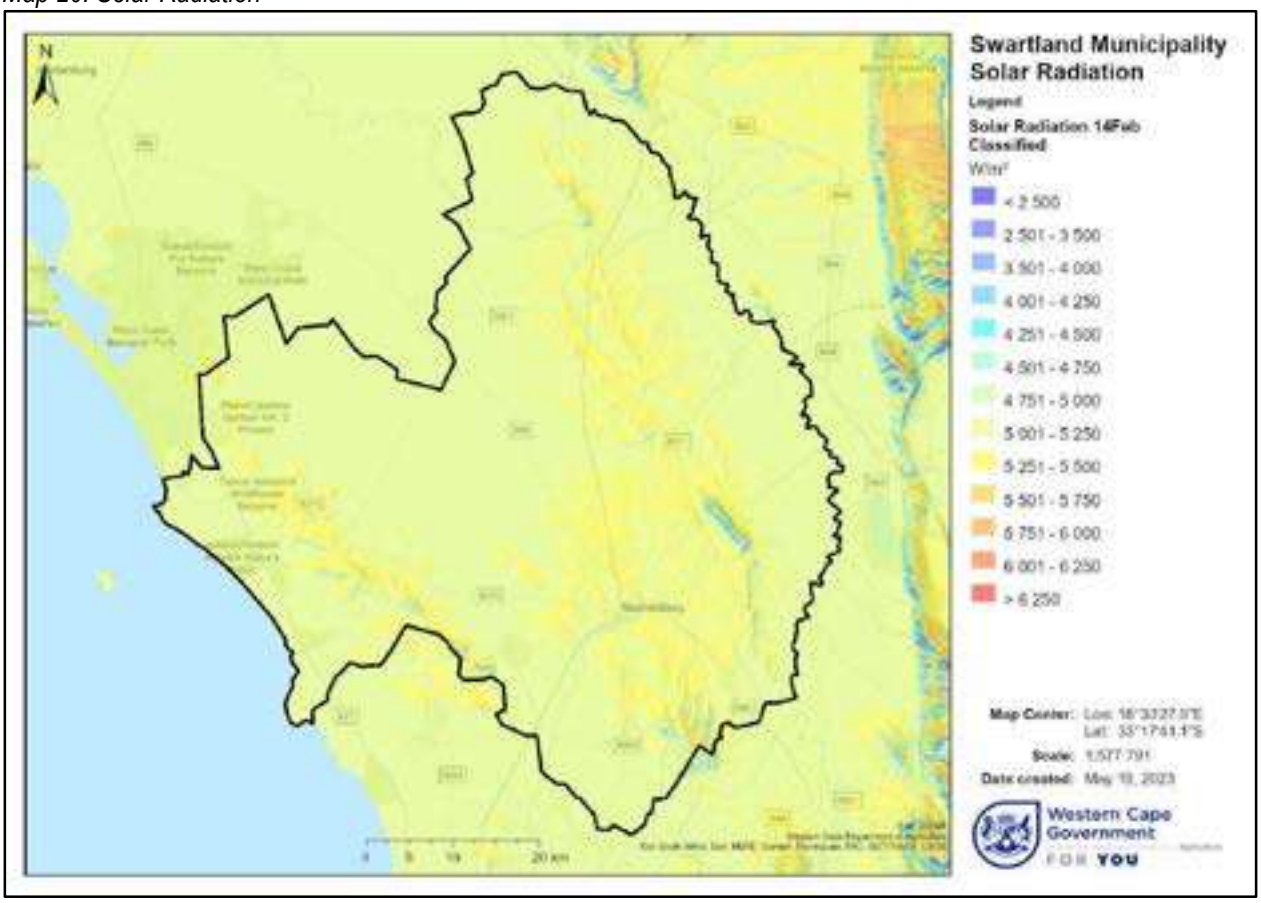
Delineate alternative energy zones



6.2.6 Sun

6.2.6.1 Natural Resource: Solar Radiation

Map 20: Solar Radiation



6.2.6.2 Natural Disaster: Heat wavers

Unlikely.

6.2.6.3 Opportunities: Alternative Energy

Management directives for sun include:

Alternative Solar Energy Facilities
Change:

- See management directive for alternative wind energy facilities.
- Promote renewable and alternative energy generation facilities in viable zones only.
- Provide for solar facilities to cater for future urban expansion. Generate alternative energy: Plan for future urban expansion. Generate alternative energy: Darling to Yzerfontein – wind zone; Malmesbury to Moorreesburg – wind zone and north south solar zone (Kalbaskraal to Koringberg)
- Provide for expansion of transmission infrastructure.
- Generate and use of alternative/renewable energy as per energy zones identified. Including generation and use on small & large farms.

- Encourage generation of alternative energy from refuse on intensive and extensive farms.
- Generation of biogas on intensive feed farms.
- Ensure maintenance of adequate electricity reticulation.

Develop:

- Develop and encourage the use of alternative/renewable energy resources in the identified zones: Zone A, medium to high wind speeds, ideal for wind turbines. Zone B, high wind-speed zone and C, northern section, high irradiation zone: photovoltaic plants photovoltaic plants; Ward 5: home to Darling Wind Farm (four wind turbines). Ward 6: home to solar panels.
- Develop design guidelines for bulk and supportive infrastructure and corridors to protect landscape qualities

6.2.6.4 Risks: Evaporation

Too high or low evaporation.

6.2.6.5 Proposals

- Promote Solar Energy as per alternative energy zones.

6.2.7 Connectors

6.2.7.1 Man-made Resource: Roads and Rail, Social Amenities

The Swartland settlements and destinations are easily accessible and are well connected through the N7 dual carriage way, as the main route to the Northern Cape and Namibia, the R27 along the West Coast, providing access to the Cape Metropolitan area, Saldanha Bay IDZ, and related markets and neighbouring regions and the R45, linking the Boland and West Coast.

N7	Connector between Cape Town and - Windhoek, Namibia. - Gauteng via R45 (and R46) and N1. Dual carriage way increase accessibility & reduce travel time. Connect the Metropole to the West Coast, Northern Cape and Namibia
R311	Link to West Coast, Hopefield via R45, Riebeek Valley and adjoining municipalities including Berg River, Drakenstein and Cape Metropole
R45	Link between Drakenstein and West Coast across Swartland
R45 & 46	Link to Drakenstein, Witzenberg (Ceres) and West Coast
R27	Link Cape Town in the south to Saldanha IDZ in the north west across Swartland Connector between Cape Town and Gauteng via R27 and N14 north (Upington & Gauteng),
R315	Link to Mamre Darling, Mamre and Atlantis benefit and Cape Town. Link between West Coast (R27) and Malmesbury via Darling
R315 & R307	Link from Darling to Mamre and to Moorreesburg.
R304	Link between Malmesbury and northern suburbs, Durbanville, Stellenbosch and N1.
R1111	Old Cape Road from Malmesbury to Philadelphia via Kalbaskraal
Transport Nodes	North or Malmesbury.
Railway	Belville over Malmesbury, Moorreesburg and Koringberg to Bitterfontein. Belville over Kalbaskraal and Darling to Vredenburg.

There is a railway line from Belville to Vredenburg passing through Kalbaskraal and Darling and from Belville to Bitterfontein passing through Moorreesburg and Koringberg and from Belville to Porterville passing through Riebeek Valley. Rail freight has declined significantly, while road freight has increased exponentially with the N7 as a major freight route through the Swartland.

There is a military airstrip south of Darling that has fallen into disuse. Public transport is limited to the local bus and taxi services operating on some public transport routes. The development guidelines and proposals at municipal level are listed below.

6.2.7.2 Disasters: Natural Disasters

Flooding disrupting connection.

6.2.7.3 Opportunities

Mobility, Transport Networks & Economic links	**Protect:** Maintain existing and develop new transport infrastructure sensitively to the agricultural and conservation landscape conservation. **Change:** Rail • Promote use of rail as alternative transport (freight – agriculture and mining) and introduce passenger rail (commuters & tourists) through Winelands (Belville to Oudtshoorn. (inter municipal route). • Promote renewal/ upgrading existing station buildings as well as crop storage facilities along the line. • Promote private rail operators to provide alternative transport between Malmesbury, Koringberg, Kalbaskraal and Darling to support increased economic links & mobility of people. Road • Functionally (easy access) integrate rural and urban areas using connector roads. • Promote maintenance of road network to support economic activities (commercial, industrial and agricultural).
N7	<u>Support the enhancement of freight routes:</u> Optimise links to markets (Cape Town & Windhoek): Dual carriage way between Cape Town and Malmesbury increased accessibility & reduce travel time Support N7 as regional links improving mobility and connections with markets in the Cape Town Metropole. Develop nodes at N7 intersections and where SANRAL criteria allow nodes. - Nodes that blend in with surrounding agricultural landscape - Nodes focus on tourism and agricultural development and support services Optimally utilise internal alternative road network providing new access points to the N7 as a result of the upgrade to the N7. Upgrade of Malmesbury (N7) Hopefield Road (R45) intersection Support and initiate an investigation to the viability of a reliable public transport service along the N7 between Malmesbury and Greater Chatsworth as well as between the Greater Chatsworth areas, Atlantis and Cape Town to increase the mobility of the local community.
R311	Strengthen regional links with West Coast, Hopefield (R311 and R45), Riebeek Valley (R311) and adjoining municipalities including Berg River, Drakenstein and Cape Metropole (to increase mobility in the area) Strengthen the link between N7 & R45
R311	Strengthen link between N7 & R45 Strengthen link with West Coast, Hopefield (R311 and R45), Moorreesburg (R311) and adjoining municipalities including Berg River, Drakenstein and the Cape Metropole
R45	Strengthen link between Drakenstein and West Coast across Swartland and intensify link between Malmesbury and Vredenburg/Saldanha via Hopefield. Maintain road network, although in good condition
R45 & 46	Strengthen link to Drakenstein, Witzenberg and West Coast Complete link road north of Malmesbury: R45 with N7 and R45 to Hopefield/Saldanha IDZ; link to Drakenstein and Ceres (R45 & 46). Maintenance of road network

R27	Optimise link Cape Town in the south to Saldanha IDZ in the north west across Swartland (increased accessibility & reduced travel time): Optimise links to markets (Cape Town & Windhoek) Promote node development at intersection with R315. Consolidate link to West Coast National Park and Blaauberg Nature Reserve
R315	Strengthen R315 & N7 as regional links improving mobility and connections with markets in the Cape Town Metropole: ensure Darling, Mamre and Atlantis benefit. Strengthen link between West Coast (R27) and Malmesbury via Darling is also part of the main tourism route in the Swartland between the Riebeek Valley and the West Coast (Yzerfontein). Continue maintenance of road network.
	Develop pedestrian/bicycle route along the R315 from the intersection with the R27 to Yzerfontein.
R315 & R307	Strengthen R307 link from Darling to Mamre and gravel road to Moorreesburg.
R304	Strengthen Link between Malmesbury and northern suburbs, Durbanville, Stellenbosch and N1. Maintain road network. Strengthen R304 & N7, as a regional link, improve mobility and connections with markets in the Cape Metropole. Develop transport nodes along R304 and N7
R311	Strengthen as regional link with Ward 3 through Riebeek Valley to R45 (West Coast) across N7 at Moorreesburg.
R1111	Capitalise on upgraded Old Cape Road from Malmesbury to Philadelphia via Kalbaskraal, known as the Divisional Road 1111: Develop the Swartland Meander as a scenic route within the agricultural landscape.
Transport Nodes	Formalise and safeguard the intersection between the R27 and the R315 by making it more visible. Promote the development of the intersections as an economic and tourism node. The intersection introduce a tourism corridor along the small holding area.  Promote tourism as secondary use on agricultural land and storage related to agriculture, agricultural processing and Agri-industry. Urban design guidelines should enhance the interaction between the corridor and the R315. Such guidelines could require a street off-set of at least a 120m

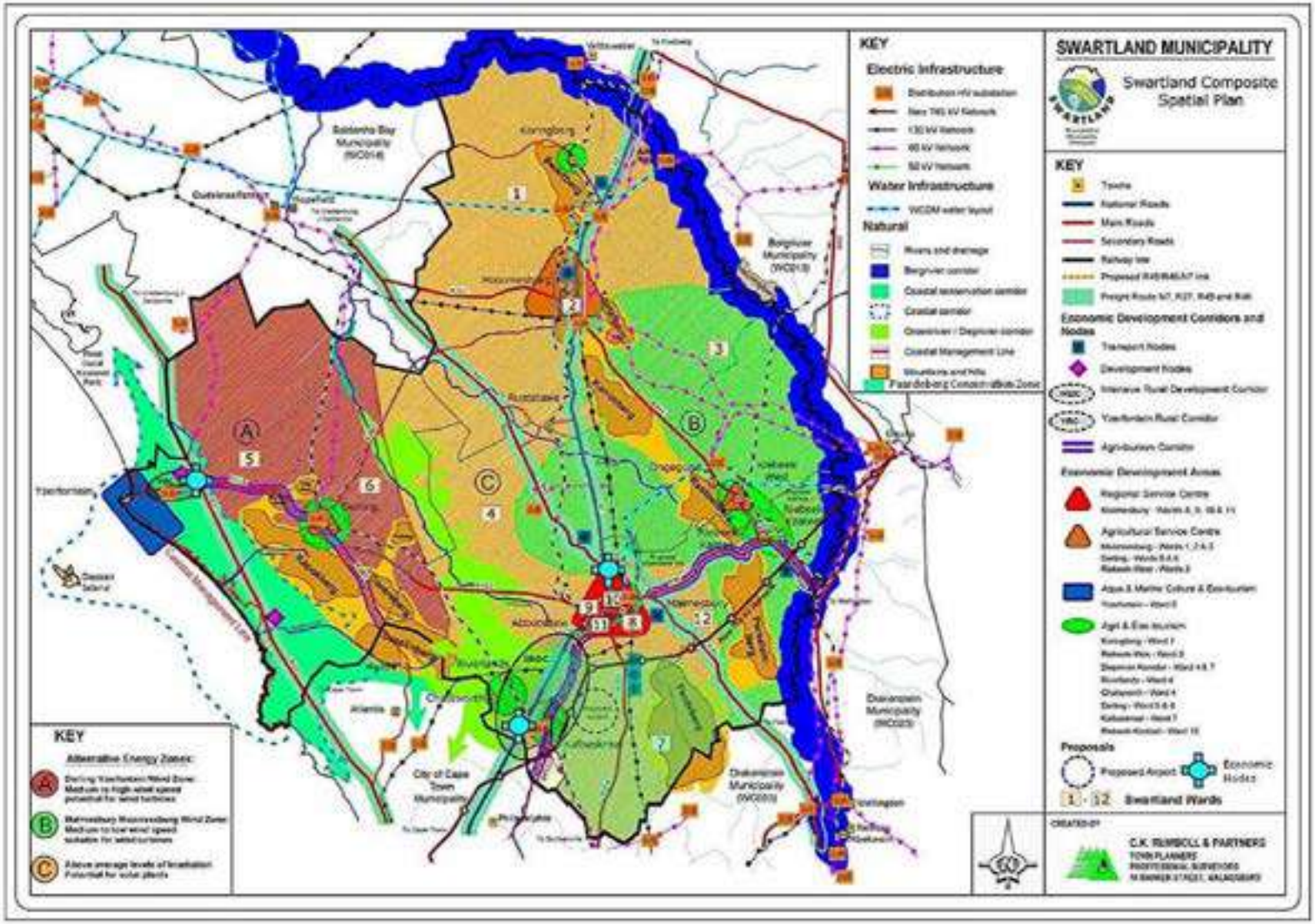
	within which no mass-scale buildings should be located. Building to be West Coast vernacular style and lookalike farm barns and sheds in modern finishes. Economic nodes, of high-intensity land use activities (freight, travelling and business) and located at the intersection with the R27 and at the end of the R315 corridor should be encouraged. Nodes are areas of activity enhancing the flow of goods along transport corridors.
Mobility, Transport Networks & Economic links	**Protect:** Maintain existing and develop new transport infrastructure sensitively to the agricultural and conservation landscape conservation. **Change:** • Functionally (easy access) integrate rural and urban areas using connector roads. • Promote maintenance of road network to support economic activities (commercial, industrial and agricultural). Strengthen transport corridors and modes of transport (airport – ward 7) at regional and district levels supported by the associated infrastructure (i.e., service stations, distribution centres) o transport nodes south of Malmesbury, R45 – close to R46 junction, start of R46 – Hermon, N7 – Moorreesburg, R27 - Vygevlei. Koringberg, R45 – N7 crossing, R45) o development nodes (R27 – R315 crossing, R45 – N7 crossing, N7 – Klein Dassenberg Road). o Agri-tourism routes: R307 (Darling to Mamre), R315 (Darling to R27 crossing), R46 (Hermon to R45 crossing), DR 1111 (Ou Kaapse (weg) Meander) to enhance the benefits of the municipal area as a connector between the Cape Metropole, the West Coast (R27, 45 & 46) and towards the Northern Cape (N7). Strengthen Regional roads: o that provide links between main towns as well as with surrounding areas such as West Coast Region, Berg River region, Boland Region and Cape Metropole – support the development of transport nodes along these routes and improve mobility between rural and urban areas: Dual carriage way: N7; Freight Routes: N7, R27, R45 and R46. Strengthen access to economic links: o maintenance and upgrading of existing road network, municipality to engage proactive manner with provincial road department to ensure adequate links are established: R45/46/N7 link, R45/N7/R311 link, R45/R311 link, N7/R44 link, R311/R44 link, R46/R44 link, R302/R45 link, proposed airport, Upgrading of R315 and R 307. Optimise links as provision of access along Proclaimed Provincial and National Roads has to be provided in accordance with the WCG DTPW Access Management Guidelines (2020) and SANRAL policies.
Railway	Support private operators to provide alternative transport between Malmesbury & Moorreesburg and Darling and Kalbaskraal. Implement and strengthen special train trips: - between Moorreesburg & Koringberg (Grain and Canola fields, rolling hills and railway line to Bitterfontein) - from Cape Town to Darling and Hopefield during the flower season. **Change:** • Promote use of rail as alternative transport (freight – agriculture and mining) and introduce passenger rail (commuters & tourists) through Winelands (Belville to Oudtshoorn. (inter municipal route). • Promote renewal/ upgrading existing station buildings as well as crop storage facilities along the line.

6.3 Composite Proposals

The composite spatial plan[7] illustrates all the rural development proposals. The composite plan also illustrates the well-connected location of the Swartland and the opportunities for spatial integration of the rural development proposals provide.

[7] Composite SDF: SPLUMA Section 12(g)(k)(l)(o), Section 21(b)(n)(o) and Sec21(p)(iii)

Map 21: Swartland Composite Proposal Map



CHAPTER 7: Implementation Plan and Capital Expenditure Framework

The Capital Expenditure Framework reflect the following question?

What proposals envisioned the MSDF? What infrastructure is planned for? Does the proposal and infrastructure align? What is municipal capital expenditure budgeted for the SDF cycle. Which proposals is affordable?

7.1 Implementable SDF Proposals

Implementable SDF proposals were derived from the settlement proposal mainly as the rural proposals are in a conceptual phase.

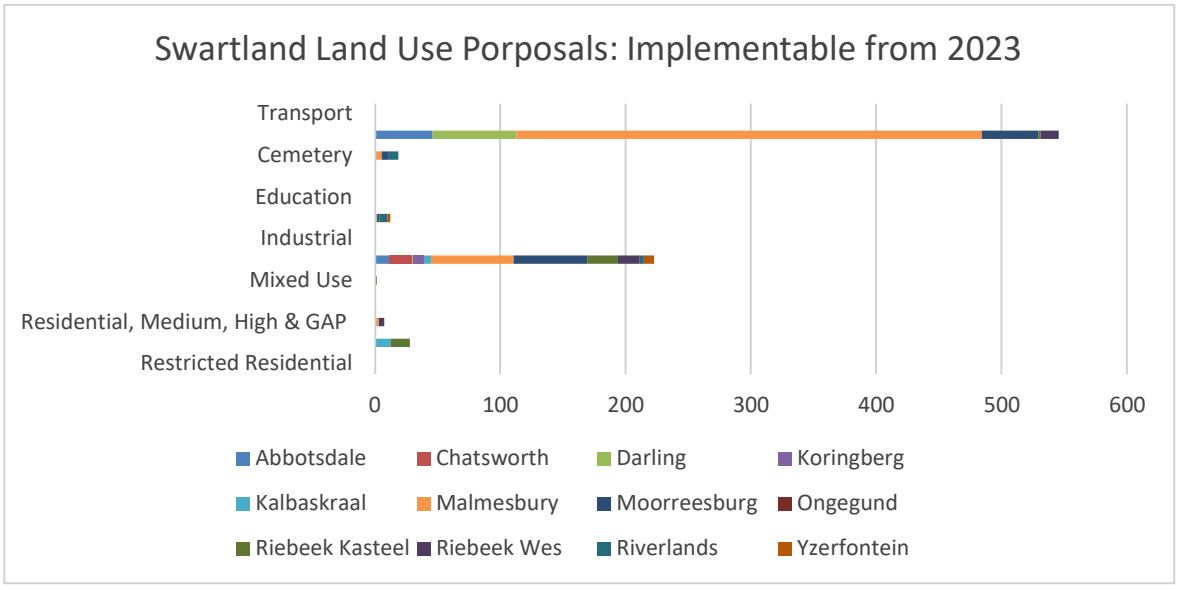
7.1.1 List of proposals for settlements and rural area

A list of SDF proposals and likely timeframes, per settlement are presented as graphs and tables. The proposals per settlement is represented as land use type proposals. Land uses that were not included in the tables and graphs are open space proposals used as buffer in contrast with sports fields within settlements that were included. Small Scale Agriculture was also not included in the tables as it was a standard SDF proposal in all settlement except Ongegund and Yzerfontein.

Proposals immediately implementable

The SDF proposals immediately implementable in the SDF cycle, are either approved developments (planned for in the previous SDF cycles) or intensification proposals.

Figure 8: Swartland Land Use Proposals: Implementable from 2023



Approved developments are residential use in the Riebeek Valley and Darling, whilst in Kalbaskraal industrial development, in Abbotsdale alternative energy and in Malmesbury mixed use were proposed. Kalbaskraal, Riebeek Wes and Riebeek Kasteel have some residential opportunities proposed whilst approved development that are implementable are in Abbotsdale alternative energy, Malmesbury mixed use, Darling residential, Mooreesburg industrial and the Riebeek Valley residential. Central business district densification opportunities are proposed in all the settlements.

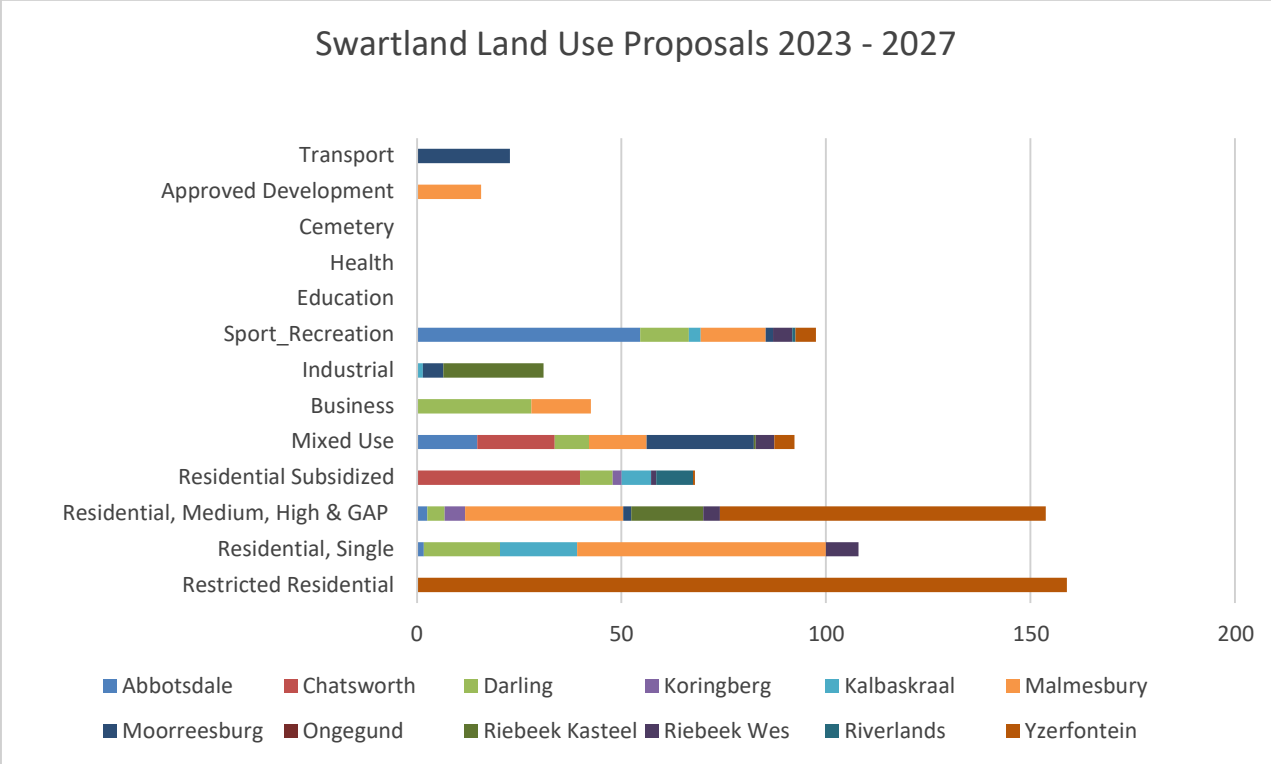
Table 8: Extent of land use proposal per settlement, immediately implementable

2023, immediately Settlement	Restricted Residential	Residential, Single	Residential, Medium, High & GAP	Residential Subsidized	Mixed Use	Business	Industrial	Sport/ Church/ Amenities	Education	Health	Cemetery	Approved Development	Transport	Rehabilitate
Abbotsdale	0	0	0	0	0	11,6	0	0	0	0	0	45,9	0	0
Chatsworth	0	0	0	0	0	18	0	0	0	0	0	0	0	0
Darling	0	0	0	0	0	1,2	0	1,7	0	0	0	67,1	0	0
Koringberg	0	0	0	0	0	8,3	0	0	0	0	0	0	0	0
Kalbaskraal	0	12,7	0	0	0	5,5	0	0	0	0	0	0	0	0
Malmesbury	0	0	3	0	0	66	0	0	0	0	5,4	371,4	0	0
Moorreesburg	0	0	0	0	0	58,8	0	1,8	0	0	5	45	0	0
Ongegund	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Riebeek Kasteel	0	15,2	0	0	1,5	24,6	0	0	0	0	0	1,8	0	0
Riebeek Wes	0	0	4,3	0	0	17,3	0	0,2	0	0	0	14,7	0	0
Riverlands	0	0	0	0	0	3,2	0	6,1	0	0	8,3	0	0,3	0
Yzerfontein	0	0	0	0	0	8,3	0	2,4	0	0	0	0	0	0

Proposals implementable during SDF cycle: 2023 – 2027:

Proposals over the SDF cycle (until 2027) are illustrated in the figure below:

Figure 9: Swartland Land Use Proposals: 2023 - 2027



Implementable proposals over the next 5 years (until 2027) are Residential proposals in all settlement but Riverlands and an approved development in Malmesbury. Mixed use representing some economic activity is proposed in all settlements but in Koringberg, Kalbaskraal, Ongegund and Riverlands. Industrial development is proposed in Kalbaskraal and Riebeek Kasteel.

Table 9: Swartland Land Use Proposals: 2023 - 2027

2023 – 2027 Settlement	Restricted Residential	Residential, Single	Residential, Medium, High & GAP	Residential Subsidized	Mixed Use	Business	Industrial	Sport/ Church/ Amenities	Education	Health	Cemetery	Approved Development	Transport	Rehabilitate
Abbotsdale	0	1,7	2,6	0	14,8	0	0	54,6	0	0	0	0	0	0
Chatsworth	0	0	0	39,9	18,9	0	0	0	0	0	0	0	0	0
Darling	0	18,6	4,2	8	8,4	28	0	11,9	0	0	0	0	0	0
Koringberg	0	0	5	2,2	0	0	0	0	0	0	0	0	0	0
Kalbaskraal	0	18,9	0	7,2	0	0	1,5	2,9	0	0	0	0	0	0
Malmesbury	0	60,8	38,7	0	14,1	14,6	0	15,9	0	0	0	15,7	0	5,5
Moorreesburg	0	0	1,9	0	26,2	0	5	1,8	0	0	0	0	22,8	0
Ongegund	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Riebeek Kasteel	0	0	17,6	0	0,5	0	24,5	0	0	0	0	0	0	0
Riebeek Wes	0	8	4,1	1,2	4,5	0	0	4,7	0	0	0	0	0	0
Riverlands	0	0	0	9	0	0	0	0,8	0	0	0	0	0	0
Yzerfontein	158,9	0	79,7	0,5	4,9	0	0	5	0	0	0	0	0	0

Proposals implementable during SDF long term cycle: 2027 – 2032:

Proposals over the long-term SDF cycle (until 2032) are illustrated in the figure below:

Figure 10: Swartland Land Use Proposals: 2027 - 2032

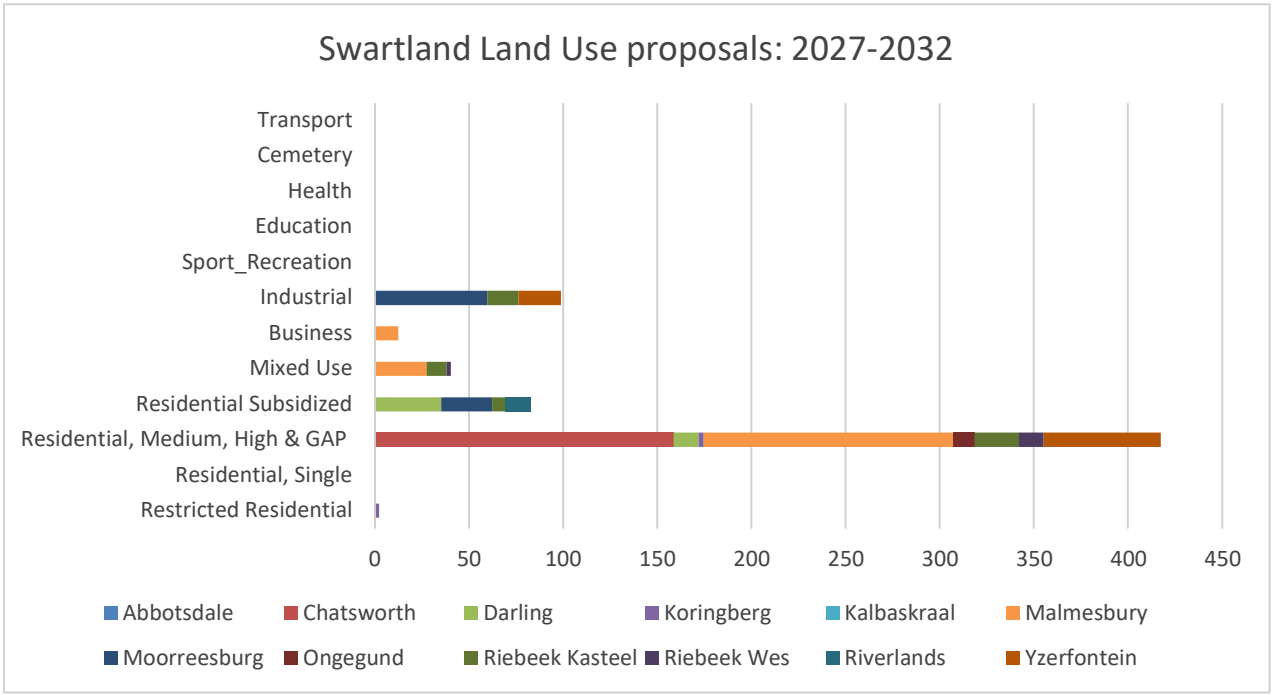


Table 10: Swartland Land Use Proposals: 2027 - 2032

2027 – 2032 Settlement	Restricted Residential	Residential, Single	Residential, Medium, High & GAP	Residential Subsidized	Mixed Use	Business	Industrial	Sport/ Church/ Amenities	Education	Health	Cemetery	Approved Development	Transport
Abbotsdale	0	0	0	0	0	0	0	0	0	0	0	0	0
Chatsworth	0	0	158,7	0	0	0	0	0	0	0	0	0	0
Darling	0	0	13,2	35,3	0	0	0	0	0	0	0	0	0
Koringberg	2,2	0	2,8	0	0	0	0	0	0	0	0	0	0
Kalbaskraal	0	0	0	0	0	0	0	0	0	0	0	0	0
Malmesbury	0	0	132,4	0	27,4	12,4	0	0	0	0	0	10	0
Moorreesburg	0	0	0	27	0	0	59,7	0	0	0	0	0	0
Ongegund	0	0	11,4	0	0	0	0	0	0	0	0	0	0
Riebeek Kasteel	0	0	23,7	6,9	10,7	0	16,6	0	0	0	0	0	0
Riebeek Wes	0	0	13	0	2,3	0		0	0	0	0	0	0
Riverlands	0	0	0	13,5	0	0	0	0	0	0	0	0	0
Yzerfontein	0	0	62,3	0	0	0	22,5	0	0	0	0	0	0

Implementable proposals from 2027 to 2032 are residential projects in all settlements but Abbotsdale and Kalbaskraal, whilst Malmesbury has an approved development that likely will be implemented after the SDF cycle. Subsidized housing is proposed Darling, Mooreesburg, Riebeek Kasteel and Riverlands. Mixed use that include economic activities are proposed in Malmesbury and Riebeek Valley. Industrial development is proposed in Moorreesburg, Riebeek Kasteel and Yzerfontein.

Proposals implementable during SDF long term cycle: 2032+

Proposals over the long-term SDF cycle (until 2032) are illustrated in the figure below:

Figure 11: Swartland Land Use Proposals: 2032+

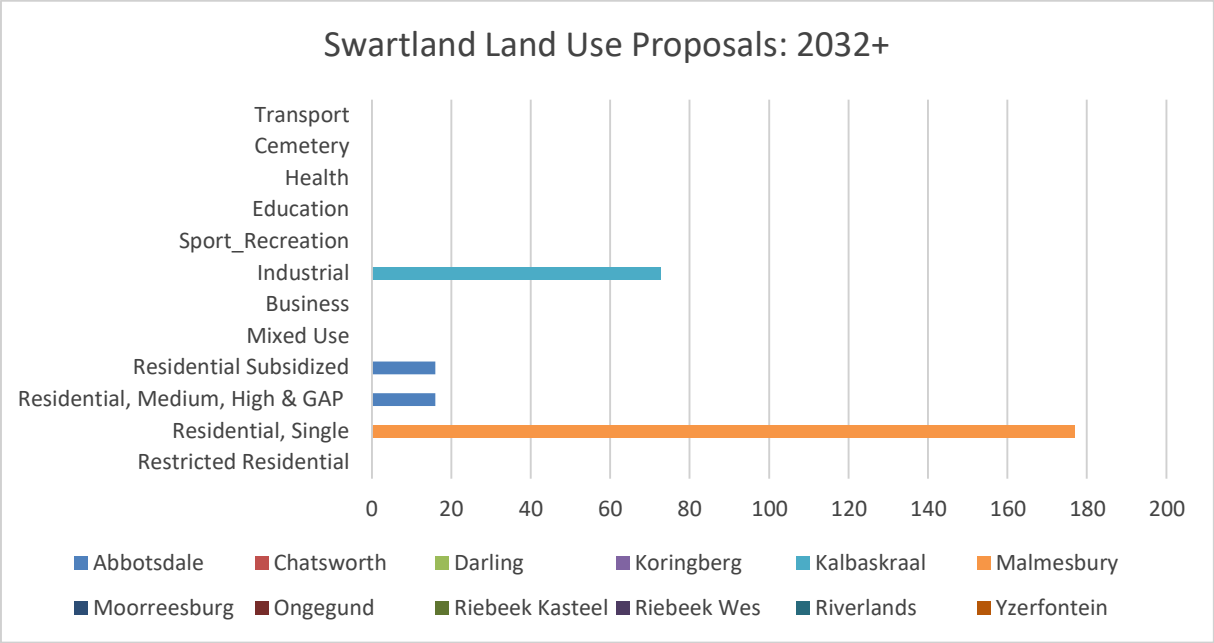


Table 11: Swartland Land Use Proposals: 2032+

2032+ Settlement	Restricted Residential	Residential, Sindle	Residential, Medium, High & GAP	Residential Subsidized	Mixed Use	Business	Industrial	Sport/ Church/ Amenities	Education	Health	Cemetery	Approved Development	Transport
Abbotsdale	0	0	15,95	15,95	0	0	0	0	0	0	0	0	0
Kalbaskraal	0	0	0	0	0	0	72,7	0	0	0	0	0	0
Malmesbury	0	177	0	0	0	0	0	0	0	0	0	0	0

The proposals implementable from 2031 onwards, include residential development of various densities in Malmesbury and Abbotsdale, subsidized housing in Abbotsdale and Industrial development in Kalbaskraal.

Settlement Priorities:

The preliminary settlement development priority proposals are located in:

First level priorities: Malmesbury and Abbotsdale

Second level priorities: Yzerfontein, Kalbaskraal, Riverlands and Chatsworth

Third level priorities: Riebeek Valley and Moorreesburg and Koringberg

Rural Priorities

The rural proposal and the implication for infrastructure is listed below:

No	Rural Proposals	Infrastructure Implications
1.	Promotion of the N7 intensive rural corridor south and north of Malmesbury	Develop an area plan to determine the required infrastructure.
2.	Promotion of transport, tourism and economic node development on N7 (R45 and Klein Dassenberg) and R27 (R315)	Develop an area plans for each of the two nodes to determine the required infrastructure.
3.	Enhance the formalization of the Paardeberg as a world wine and conservation destination (cross border activity).	Develop an area plan to determine the required infrastructure.
4.	Promote Darling and Yzerfontein as a world biodiversity and film destinations.	Included in settlement provision and area plans.
5.	Promote the coastal conservation park as an extension of the West Coast Park.	Jointly with Cape Nature develop a project plan to establish the need for infrastructure.
6.	Promote the Diep River as a historic link between Swartland and City of Cape Town (cross border activity).	Jointly with CoCT develop a project plan to establish the need for infrastructure.
7.	Finalization of declaration of Critical Biodiversity Areas (including Renosterbos remnants around Malmesbury and in Swartland).	None
8.	Enter into further negotiations with the national Department of Agriculture to exempt land earmarked for urban development.	None
9.	Implement economic mobility proposals according to ward needs.	None
10.	Enhance partnerships through the establishment of a development forum.	None

7.1.2 List of infrastructure requirements

The infrastructure needed and cost thereof, where available, are listed as master plan summaries. These summaries served as infrastructure requirements as the alignment of the SDF proposals and the masterplan maps concluded healthy alignment as outlined in section 7.2 to follow.

Tables of infrastructure needed including in previous years (2021 and 2022) and cost thereof, where available, follows:

Electricity

Malmesbury is earmarked for two new projects that are catalytic projects to supply approved development and to be implemented at the start of the SDF timeframe. The De Hoop Schoonspruit 132kV line and 132/11kV substation is currently in its planning phase. Upgrades were proposed for Moorreesburg and the completion of a project for Malmesbury. The table below list the electricity infrastructure projects.

Table 12: Master Plan Electricity Infrastructure Projects

Ref	Pu blished	Amount	Settlement)	New/ Upgrade	Infrastructure Description	Time Frame (Y)	
E1	2022		Malmesbury		Closing of Mount Royal and Gen Lilly Rings		2022+
E2	2022		Malmesbury	New	Construction of De Hoop Swicthing Substation	<1	2023
E3	2022		Malmesbury	New	De Hoop/ Schoonspruit: Construction of 132kV Line and 132/11kV Eskom Substation	<5	2027
E4	2019		Moorreesburg	Upgrade	Cable ring between Denneboom/ Kiaat Str MS and Sibanye Square MS	<3	2021
E5	2019		Moorreesburg	Upgrade	Cable ring through proposed industrial development	>3	2022+
E6	2019		Moorreesburg	Upgrade	Single line Hare from Eskom's 66/11kV SS into Hoof SS with second 12MVA rated line	>3	2022+
E7	2019		Moorreesburg	Upgrade	Replacement of 16mm² cable and overhead section with 50mm² conductor cable	>3	2021
E8	2019		Moorreesburg	Upgrade	Replace older oil insulated RMU with outdoor extensible switchgear units	>3	2022+
	2017		Yzerfontein		*Note: EMP acknowledged, no proposals (new or upgrading)		
	2022		Darling		*Note: EMP acknowledged, no proposals (new or upgrading)		

Sewerage

Sewer upgrades were planned for Riebeek Kasteel and Darling. New sewerage management projects were planned for Malmesbury, Darling and Chatsworth. For the SDF time frame sewer upgrades are planned for Chatsworth, Kalbaskraal, Riebeek Valley and Riverlands. Verification of capacities is also proposed for Abbotsdale, Malmesbury, Mooreesburg and Riebeek Kasteel. The table below list the sewer infrastructure Projects.

Table 13: Master Plan Sewerage Infrastructure Projects

Ref	Pu -blished	Amount	Settlement	New/ Upgrade	Infrastructure Description	Time Frame
S1	2020	R23 630 000,00	Riebeek Kasteel	Upgrade	Network reinforcements in Riebeek Kasteel	2021
S2	2020	R221 000,00	Darling	Upgrade	Network reinforcements in Darling	2021
S3	2020	R9 016 000,00	Malmesbury	New	Provide sewer infrastructure for Winelands Pork Abattoir	2021
S4	2020	R6 257 000,00	Darling	New	Relocate Darling PS and construct new outfall to WWTW	2021
S5	2020	R3 017 000,00	Chatsworth	New	Development related infrastructure in Chatsworth	2021
S6	2020	R53 285 000,00	Chatsworth	Upgrade	Increase treatment capacity of Chatsworth WWTW (NF)	2022-2023
S7	2020	R192 000,00	Riebeek Valley	Upgrade	Investigate duty flows and operation of Riebeek Valley pump stations	2022
S8	2020	R24 000,00	Riverlands	Upgrade	Investigate duty flow of pump station in Riverlands	2022
S9	2020	R24 000,00	Kalbaskraal	Upgrade	Investigate duty flow of pump station in Kalbaskraal	2022
S10	2020		Abbotsdale		Verify sanitation system infrastructure for developed erven in Abbotsdale	2023
S11	2020		Malmesbury		verify sanitation system infrastructure for developed erven in Malmesbury	2023
S12	2020		Moorreesburg		Verify sanitation system infrastructure for developed erven in Moorreesburg	2023
S13	2020		Riebeek Kasteel		Verify sanitation system infrastructure for developed erven in Riebeek Kasteel	2023

Bulk Water

For bulk water, a new supply line from Atlantis to Chatsworth is planned. Bulk upgrade is also planned for Yzerfontein, Malmesbury, Riebeek Valley and Moorreesburg. The table below list the bulk water infrastructure projects.

Table 14: Master Plan Bulk Water Infrastructure Projects

Ref	Published	Amount	Settlement	New/ Upgrade	Infrastructure Description	Time Frame (Y)
BW1	2021	R10 397 000,00	Swartland	Upgrade	Malmesbury: Upgrade supply from Panorama res to West Bank draw-off - Phase 1	2022
BW2	2021	R748 000,00	Swartland	Upgrade	Riebeeks: Upgrade 100m Ø feeder main to Riebeek Kasteel reservoirs	2022
BW3	2021	See W15 of water projects	Swartland	Upgrade	Upgrade bulk supply to Panorama reservoir	2022
BW4	2021	See W10 of water projects	Swartland	New	New bulk supply from Atlantis to Chatsworth	2023
BW5	2021	R2 683 000,00	Swartland	Upgrade	Yzerfontein: Additional balancing capacity at Wildschutsvlei balancing tank	2023
BW6	2021	R7 013 000,00	Swartland	Upgrade	Malmesbury: Upgrade supply from Panorama res to West Bank draw-off - Phase 2	2024
BW7	2021	See W17 of water projects	Swartland	Upgrade	Upgrade bulk supply pipe from WCDM meter I1/4 to Wesbank reservoirs	2024
BW8	2021	See W18 of water projects	Swartland	Upgrade	Riebeeks: Upgrade 100mm Ø feeder main from Kasteelberg reservoir to Ongegund PS	2024
BW9	2021	R4 248 000,00	Swartland	Upgrade	Moorreesburg: Upgrade 100mm Ø feeder main (F line) to Moorreesburg reservoir	2025
BW10	2021	R22 197 000,00	Swartland	Upgrade	Riebeeks: Upgrade supply from Kasteelberg reservoirs to Riebeek Kasteel	2025
BW11	2021	R40 960 000,00	Swartland	Upgrade	Swartland: Swartland WTP to Kasteelberg reservoir rising main upgrade	2025

Water

Two new water projects were proposed for Kalbaskraal and Malmesbury. Water Upgrades were proposed for Riebeek Wes, Riebeek Kasteel, Malmesbury, Abbotsdale, Chatsworth and Yzerfontein. For the SDF time frame new water projects is proposed for the Riebeek Valley and Kalbaskraal. Water upgrades for the same period is proposed for Ongegund whilst an upgrade for Malmesbury is proposed within the 20-year SDF time frame. The table below list the water infrastructure projects.

Table 15: Master Plan Water Infrastructure Projects

Ref	Published	Amount	Settlement	New/ Upgrade	Water Infrastructure	Time Frame
W1	2020	R11 618 000,00	Malmesbury	New	New bulk water infrastructure: Wesbank to Kalbaskraal supply	2021
W2	2020	R1 412 000,00	Riebeek West	Upgrade	Implement Riebeek West LL PRV zone	2021
W3	2020	R367 000,00	Yzerfontein	Upgrade	Implement Yzerfontein PRV zone	2021
W4	2020	R3 666 000,00	Malmesbury	Upgrade	Wesbank booster PS zone upgrades	2021
W5	2020	R404 000,00	Abbotsdale	Upgrade	Abottsdale bulk PS upgrade	2021
W6	2020	R726 000,00	Riebeek West	Upgrade	Riebeek West network reinforcements: Phase 1	2021
W7	2020	R505 000,00	Riebeek Kasteel	Upgrade	Network reinforcements: Riebeek Kasteel Upper reservior zone	2021
W8	2020	R5 280 000,00	Malmesbury	New	De Hoop main supply infrastructure (De Hoop housing)	2022
W9	2020	R1 110 000,00	Malmesbury	Upgrade	Network reinforcements: Wesbank reservior zone	2022
W10	2020	R15 320 000,00	Chatsworth	New	New bulk supply from Atlantis to Chatsworth	2022
W11	2020	R110 000,00	Malmesbury	Upgrade	Panorama reservior PRV 1 zone pressure management	2022
W12	2020	R693 000,00	Abbotsdale	Upgrade	Network reinforcements: Abbotsdale	2022
W13	2020	R1 106 000,00	Riebeek West	New	Augmentation of bulk supply from meter D2 (WCDM bulk system) to Riebeek West LL reservoir	2023
W14	2020	R127 000,00	Malmesbury	Upgrade	Incorporate old bulk system to Abbotsdale as part of the Kleindam reservoir network	2023
W15	2020	R613 000,00	Malmesbury	Upgrade	Upgrade main pipeline to and from Panorama reservoir	2023
W16	2020	R20 046 000,00	Kalbaskraal	New	Construct new Kalbaskraal reservoir & supporting infrastructure	2023
W17	2020	R12 507 000,00	Malmesbury	Upgrade	Upgrade bulk supply pipe from WCDM meter I1/4 to Wesbank reservoirs	2040
W18	2020	R845 000,00	Ongegund	Upgrade	Dedicated bulk supply to Ongegund Lower reservoir	2025

Roads

Road upgrades are all in and around Malmesbury to connect catalytic development projects to regional and national roads. The table below list the roads infrastructure projects.

Table 16: Master Plan Roads Infrastructure Projects

Ref	Pu-blished	Amount	Settlement	New/ Upgrade	Roads Infrastructure	Time Frame (Y)	
Rd1	2020	R64 348 330,00	Malmesbury	Upgrade	Schoonspruit Road Extension	<15	2035
Rd2	2020	R61 365 457,00	Malmesbury	Upgrade	Western Ring Road	<15	2035
Rd3	2020	R20 196 000,00	Malmesbury	Upgrade	Upgrade Voortrekker Rd/ Bokomo Str intersection incl bridge over Diep River	<15	2035
Rd4	2020	R20 200 000,00	Malmesbury	New	Roundabout at Voortrekker/ N7 Eastern Terminal		2035
Rd5	2020	R4 000 000,00	Malmesbury	New	Klipfontein Link Road	<15	2035
Rd6	2020	R3 618 811,00	Malmesbury	Upgrade	Dualling of Darling Road	<15	2035

7.2 Priorities

Priorities were informed by analysis illustrated by the figures below that represent the population distribution across the Swartland settlements, the distribution of income and the employment rate (based on the 2011 Census) combined with opportunity generators such as the N7 dualling and the R27 as connector between Cape Town and Saldanha IDZ.

Figure 12 Population distribution per Swartland Settlement

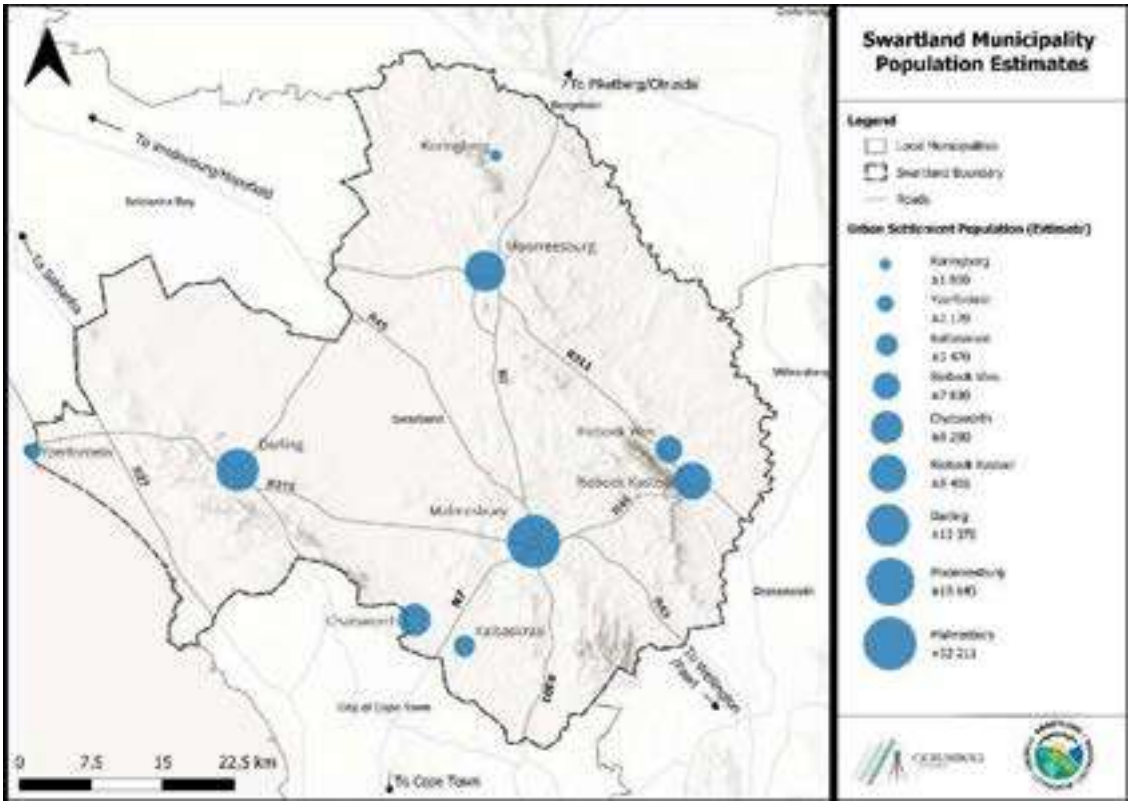


Figure 13 Swartland Average Income

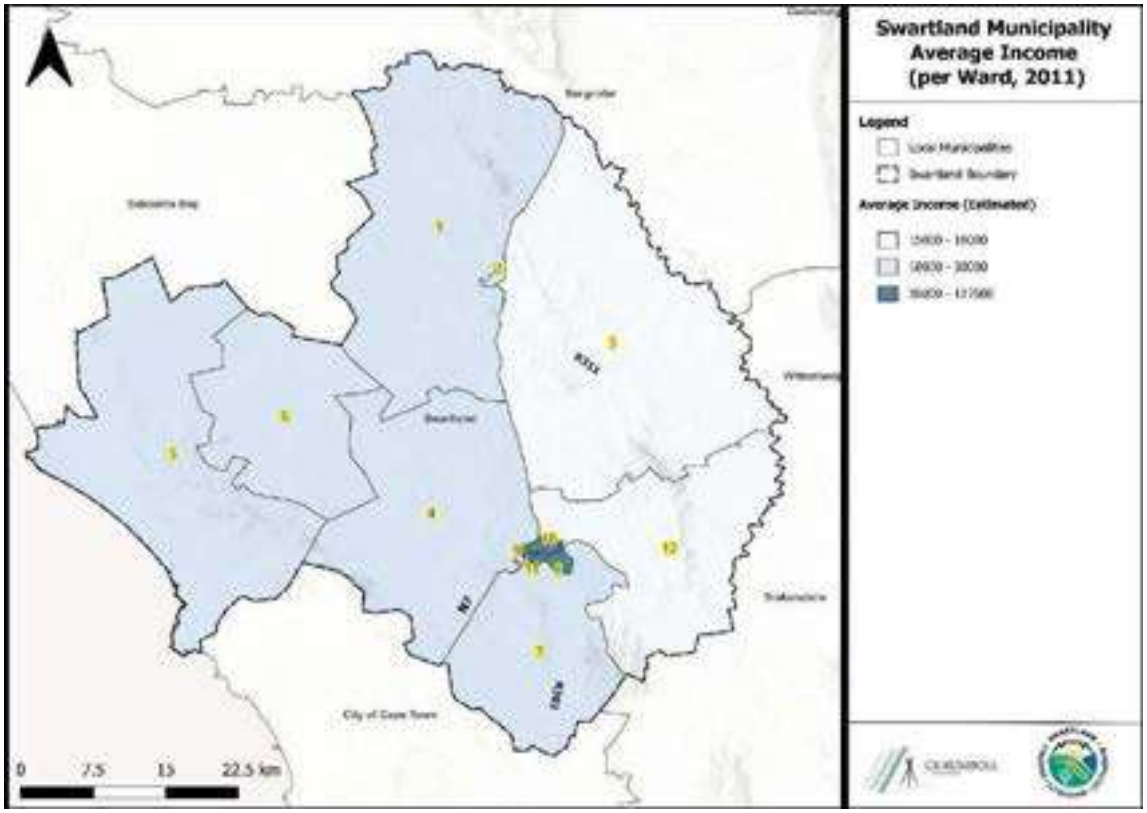
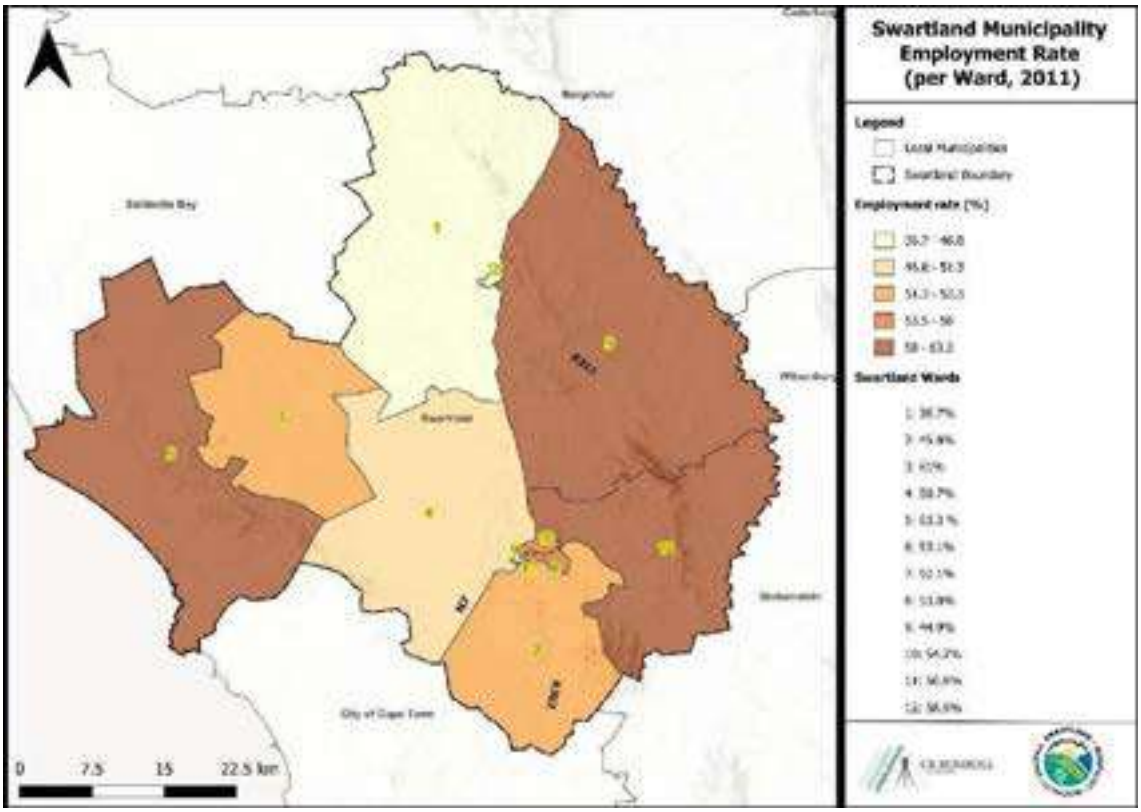


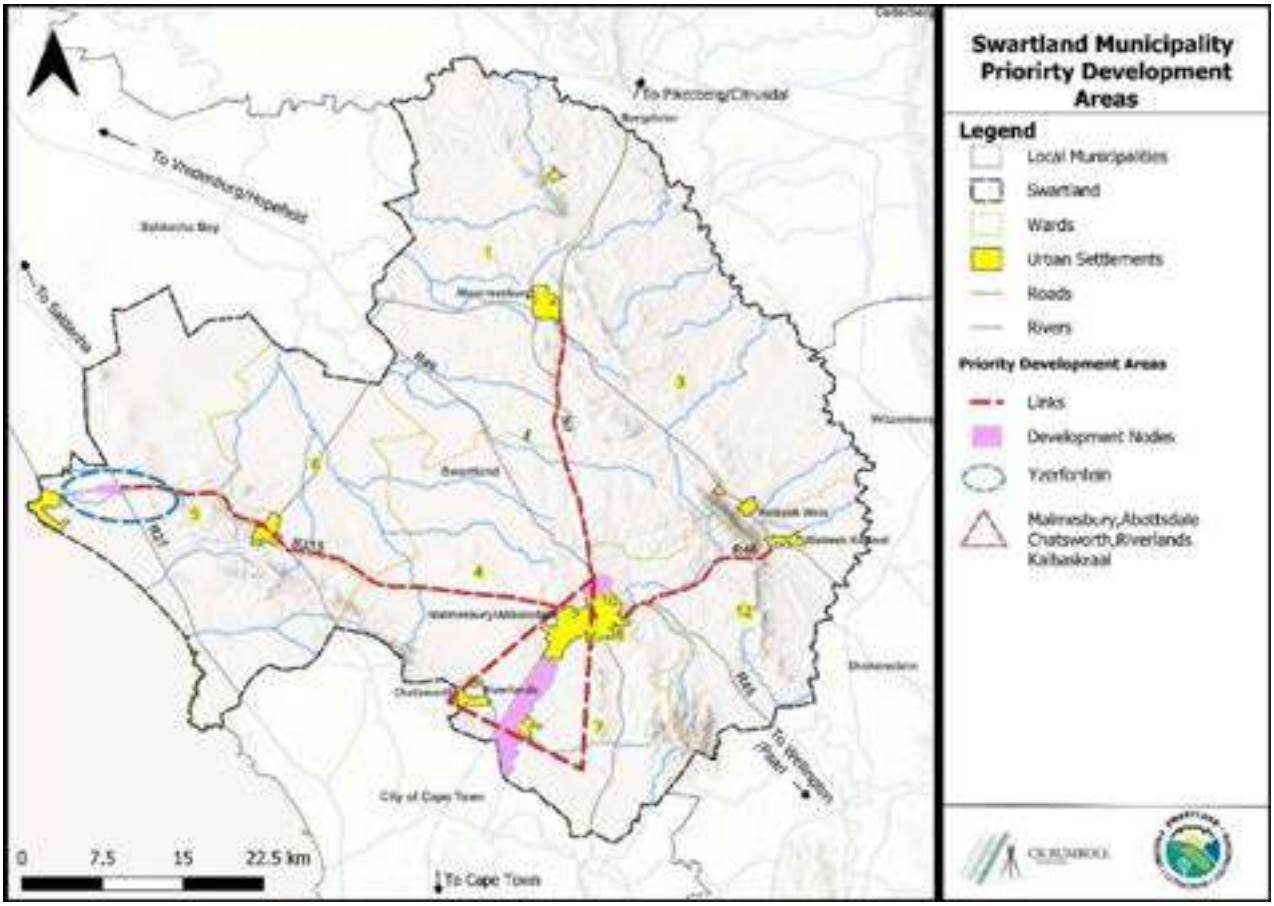
Figure 14 Swartland Employment Rate



The following priority areas were identified as illustrated in the map below:

- The triangle between Malmesbury, Kalbaskraal and Greater Chatworth (Chatsworth and Riverlands);
- The corridor from the R27 to Yzerfontein.

Figure 15 Swartland Priority Development Areas



Priorities were determined by matching what infrastructure was planned for in the Master Plans vs what development proposal included in the SDF over 5-year intervals as per section 7.1.1. (See figures below). The proposals that were immediately implementable together with proposal for 2023 – 2027 were combined and proposal for after the 5-year cycle were also combined.

Figure 16: Swartland Settlement Proposals, 2023 – 2027 and immediately implementable

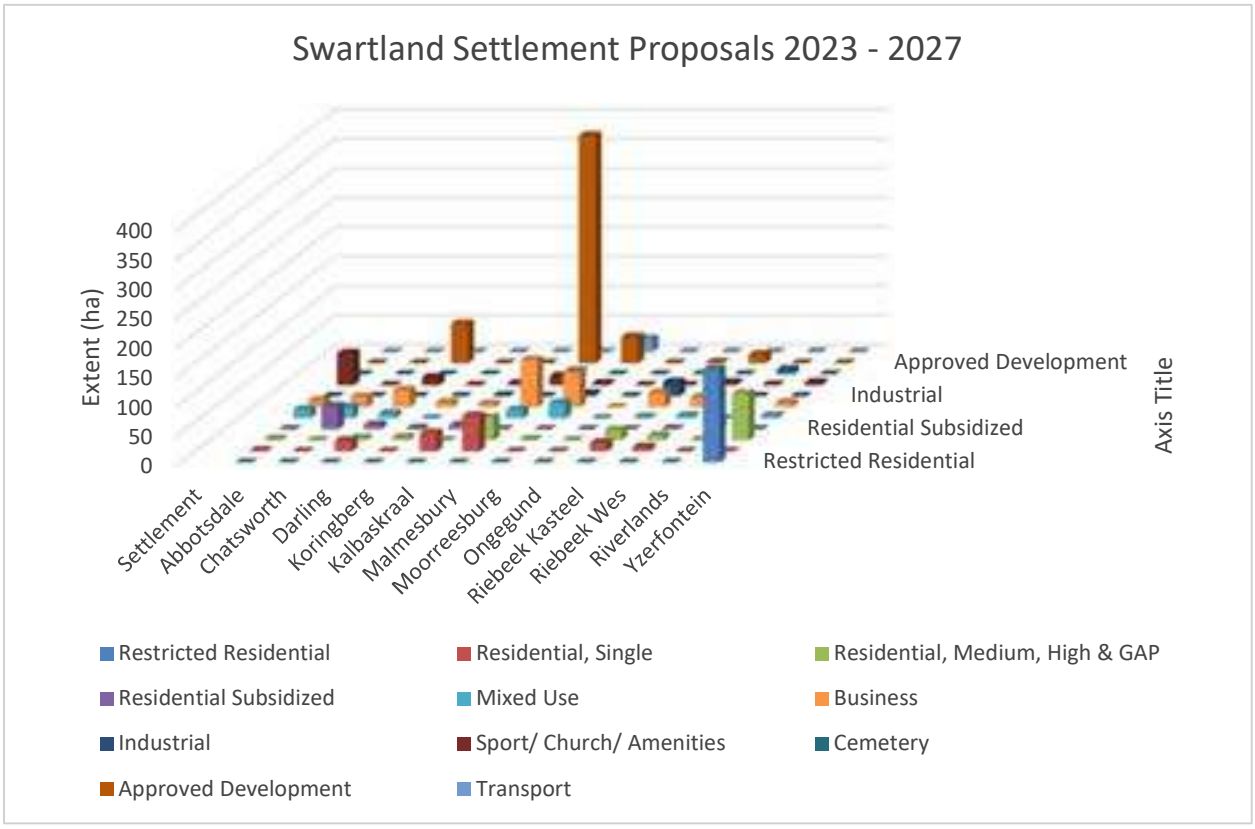
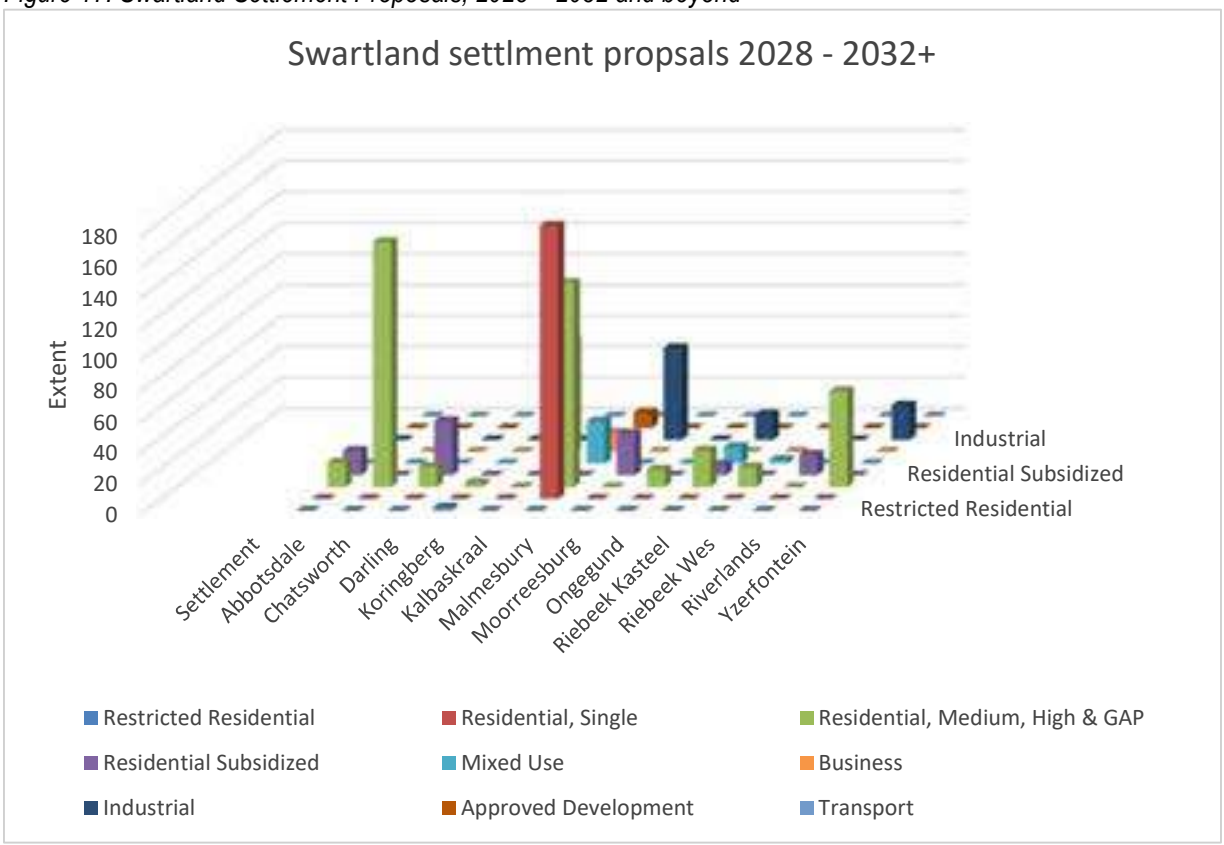


Figure 17: Swartland Settlement Proposals, 2028 – 2032 and beyond



The civil services masterplans were compiled in the previous SDF cycle and electrical masterplans two SDF cycles ago. The alignment of the SDF proposals and the masterplan maps concluded the following:
The master plans for Water and Sewer is aligned with SDF proposals for 2023- 2027 as follows:

- Kalbaskraal, Moorreesburg and Yzerfontein.

There is near alignment between the Master Plans and the SDF proposals for 2023 – 2027 within the following settlement and the differences can likely be absorbed by the existing service capacity:

- Koringberg, Darling, Riverlands, Ongegund & Riebeek West (of which the Ongegund's proposal decreased and can make up for the development in Riebeek West, Abbotsdale & Malmesbury and Riebeek Kasteel

There is non-alignment between the Master Plans and the SDF Cycle 2023 – 2027 at Chatsworth, though the Master Plans note the need for infrastructure.

There is non-alignment between the Master Plans and the SDF long term proposals for the settlements following, though there is some spare capacity for all settlement except for Chatsworth.

- Abbotsdale & Malmesbury, Chatsworth and Riebeek Kasteel.

The Electricity Master Plan acknowledged the need for electricity capacity and particularly for Darling, Moorreesburg and Yzerfontein.

The table below summarize the alignment of the Master Plans and the SDF proposals.

Figure 18: Master Plan projects vs SDF proposals

Master Plans (Water & Sewer)	SDF 5-year cycle			SDF long term cycle
Settlement	Alignment	Near	Under	Under
Abbotsdale		X		X
Chatsworth			X	X
Darling		X		
Koringberg		X		
Kalbaskraal	X			
Malmesbury		X		X
Moorreesburg	X			
Ongegund		X		
Riebeek Kasteel		x		X
Riebeek Wes		X		
Riverlands		X		
Yzerfontein	X			

7.2.1 Budget

The costs of the infrastructure required as per Master Plans represent the medium- and long- term budget. The master plan costs per service per settlement for the SDF cycle and beyond is tabulated below:

Table 17: Master Plan Budget allocation per settlement per SDF cycle

Master Plan	Ending 2022			2023 -2027			2028+		
Settlement	Water	Bulk Water	Sewer	Water	Bulk Water	Sewer	Water	Bulk Water	Sewer
Abbotsdale	1097000								
Chatsworth	15320000		56302000						
Darling			6478000						
Koringberg									
Kalbaskraal			24000	20046000					
Malmesbury	21784000	10397000	90160000	740000	7013000		12507000		129176141
Moorreesburg					4248000				
Ongegund				845000					
Riebeek Kasteel	505000	748000	23822000		63157000				
Riebeek Wes	2138000			1106000					
Riverlands			24000						
Yzerfontein	36700				2683000				

The graphs to follow illustrate the master plan budget for the previous and current SDF cycles as well as beyond.

Figure 19: Master Plan Budget till 2022

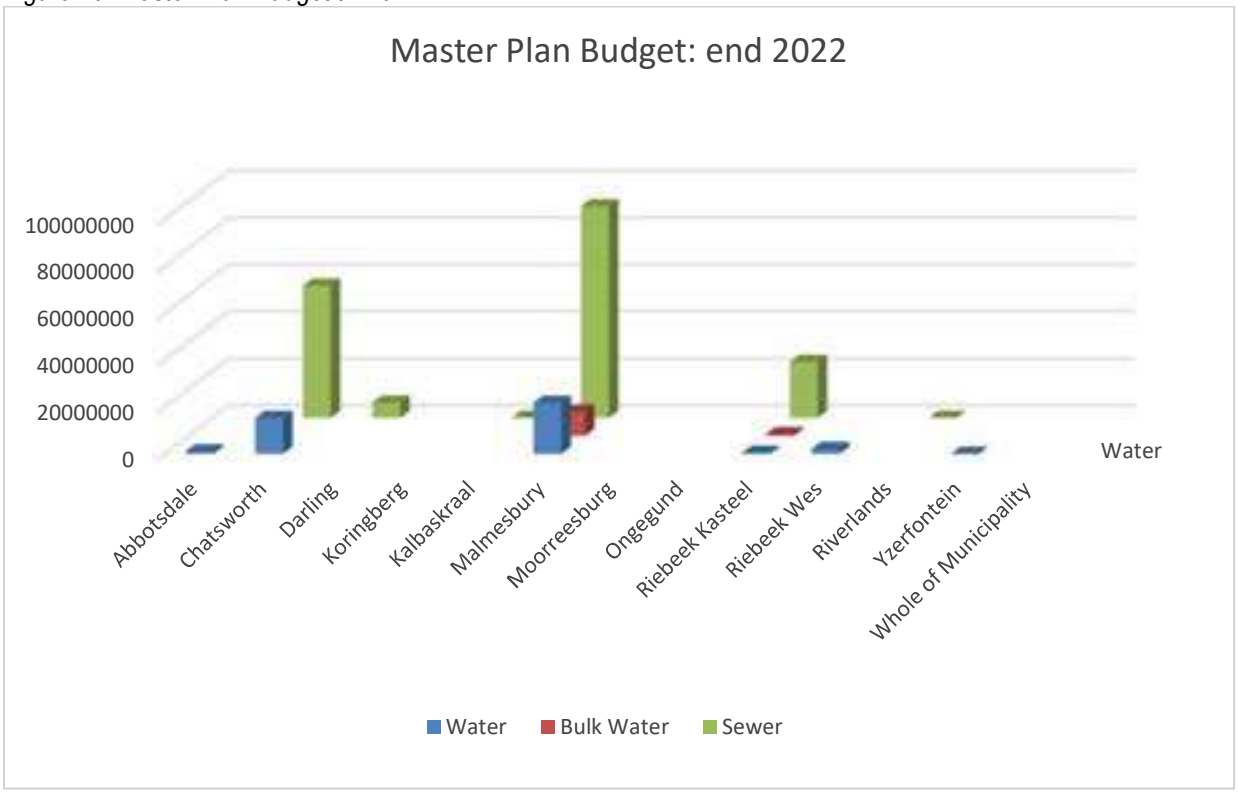


Figure 20: Master Plan Budget 2023 onwards

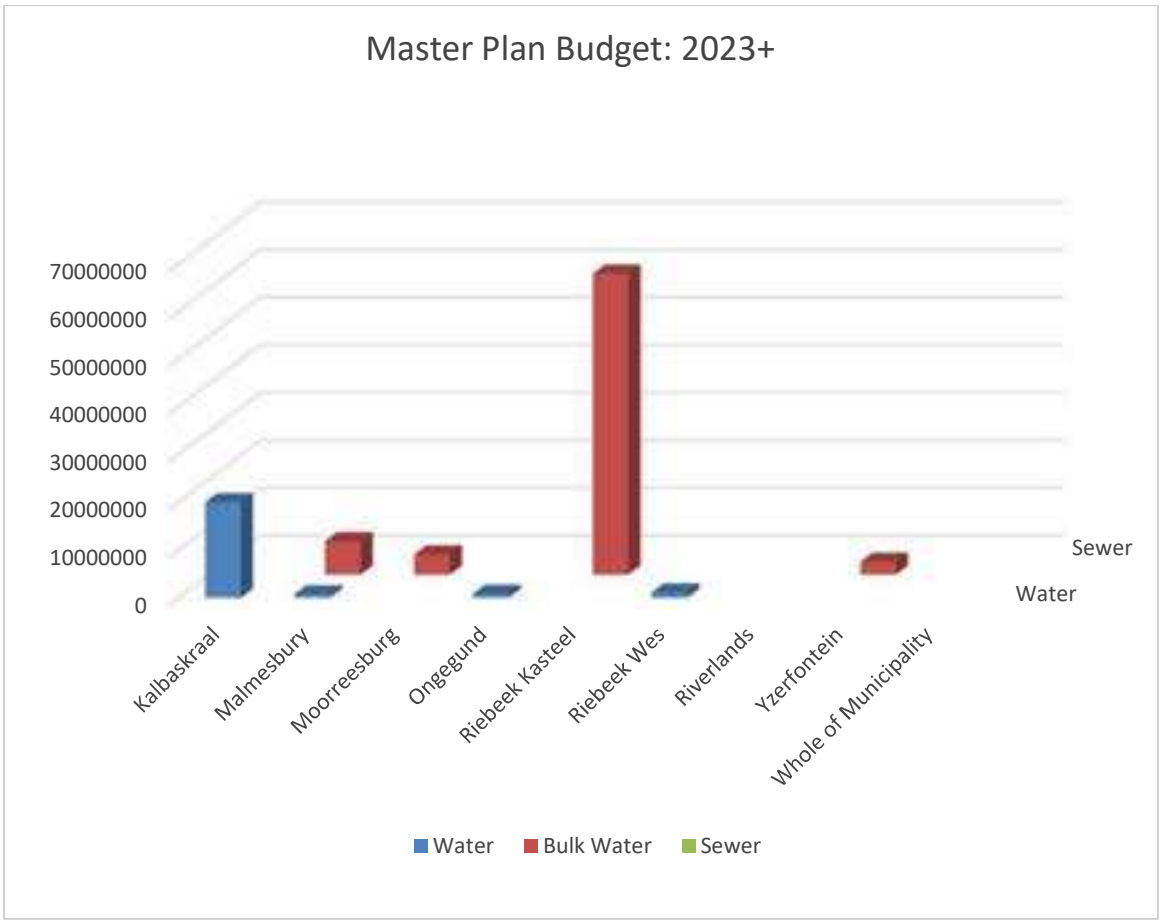
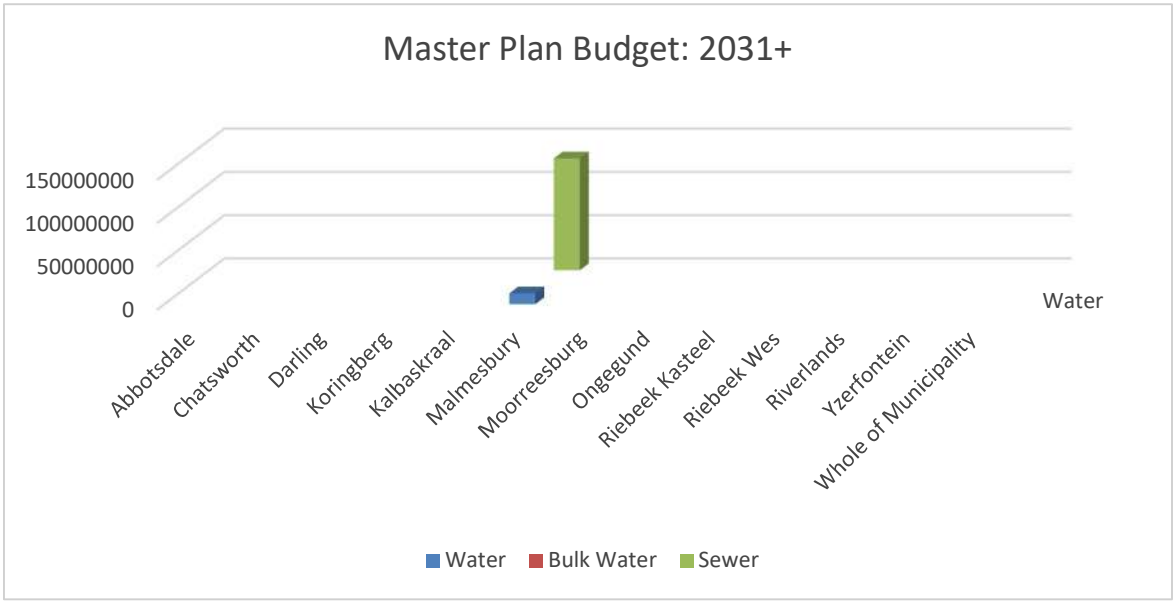


Figure 21: Master Plan budget 2031+



Approved Swatland Capital Expenditure Budget

The 5-year Capital Expenditure Budget per settlement is tabulated below:

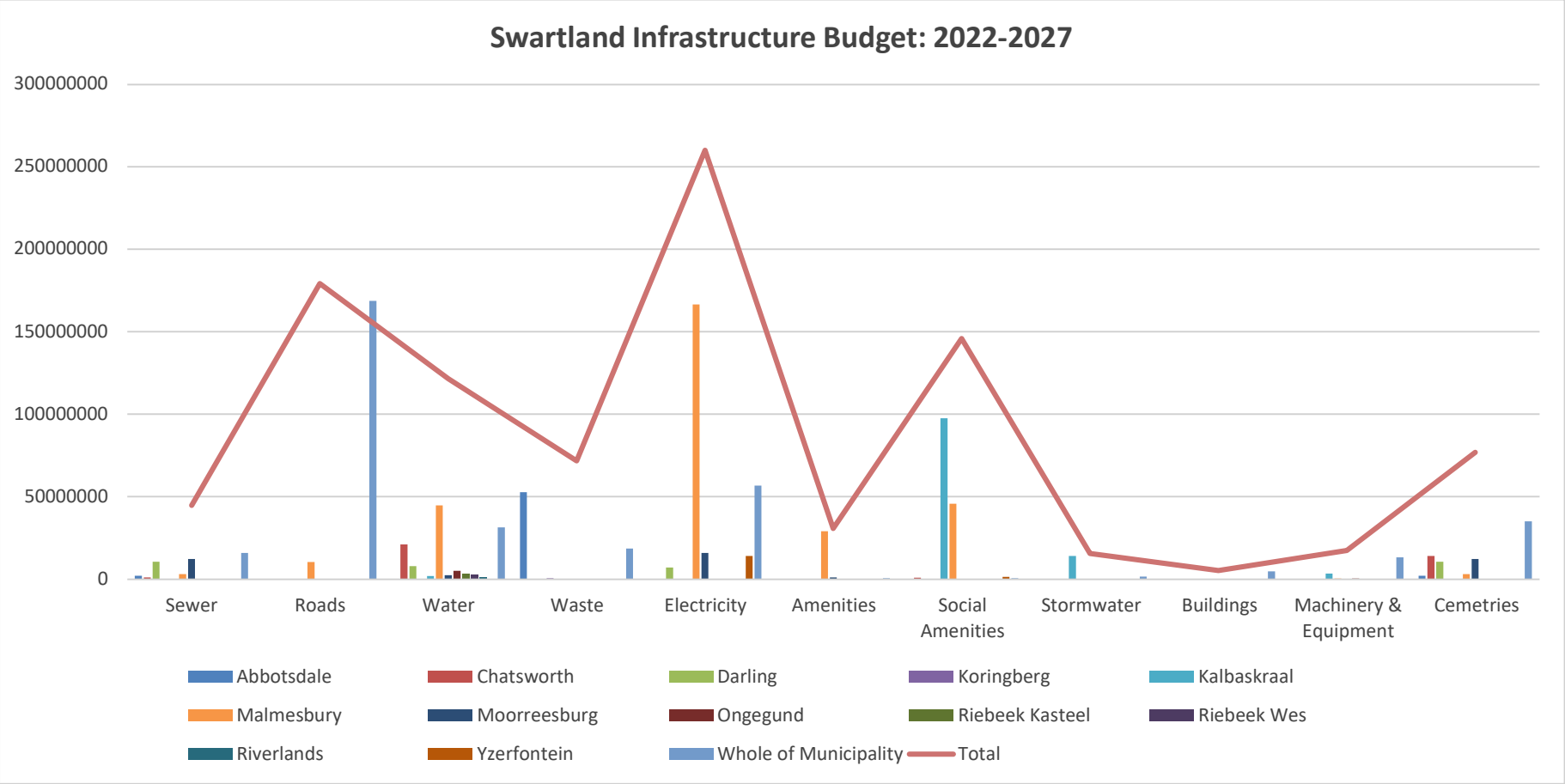
Table 18: Swartland 2022 – 2023 Capital Expenditure Budget

	Sewer	Roads	Water	Waste	Electricity	Amenities	Social Amenities	Stormwater	Buildings	Machinery & Equipment	Cemeteries
Abbotsdale	2007596	0	0	52670000	0	0	0	0	0	0	2007596
Chatsworth	1100000	0	21099335	0	0	0	850000	0	200000	0	14000000
Darling	10565743	0	7855286	0	7000000	0	0	0	0	0	10565743
Koringberg	0	0	0	500000	0	0	0	0	220671	0	0
Kalbaskraal	0	0	1948956	0	0	0	97460000	14000000	0	3375000	0
Malmesbury	3050720	10381500	44617858	0	166500000	29100000	45700000	0	0	450000	3050720
Moorreesburg	12151865	0	2362451	0	15900000	966000	0	0	0	0	12151865
Ongegund	0	0	5000000	0	0	0	0	0	0	300000	0
Riebeek Kasteel	0	0	3438000	0	0	0	0	0	0	0	0
Riebeek Wes	0	0	2500000	0	0	0	0	0	0	0	0
Riverlands	0	0	1338488	0	0	0	0	0	0	0	0
Yzerfontein	0	0		0	14000000	0	1316265	0	100000	0	0
Whole of Municipality	15874278	168735539	31383848	18475135	56724536	587500	488113	1584690	4728573	13258595	35102404
Total	44750202	179117039	121544222	71645135	260124536	30653500	145814378	15584690	5249244	17383595	76878328

Budget Implications:

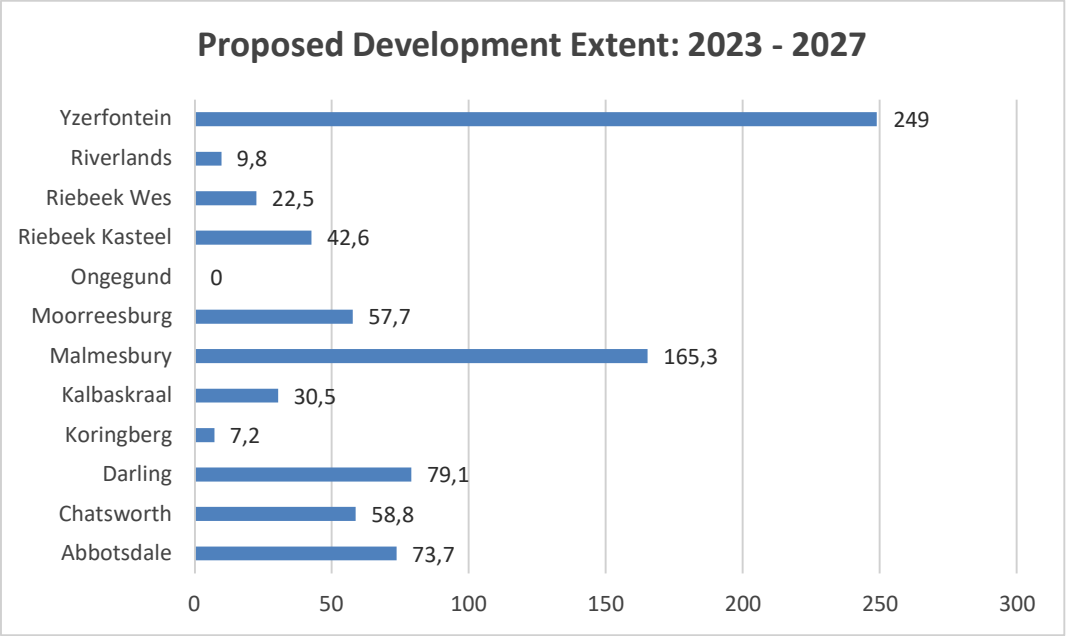
The figure below illustrate the total budget as well as allocation per infrastructure type per settlement. Form the figure roads, electricity and social amenities have the highest allocation.

Figure 22: Swartland Infrastructure budget, 2022 - 2027



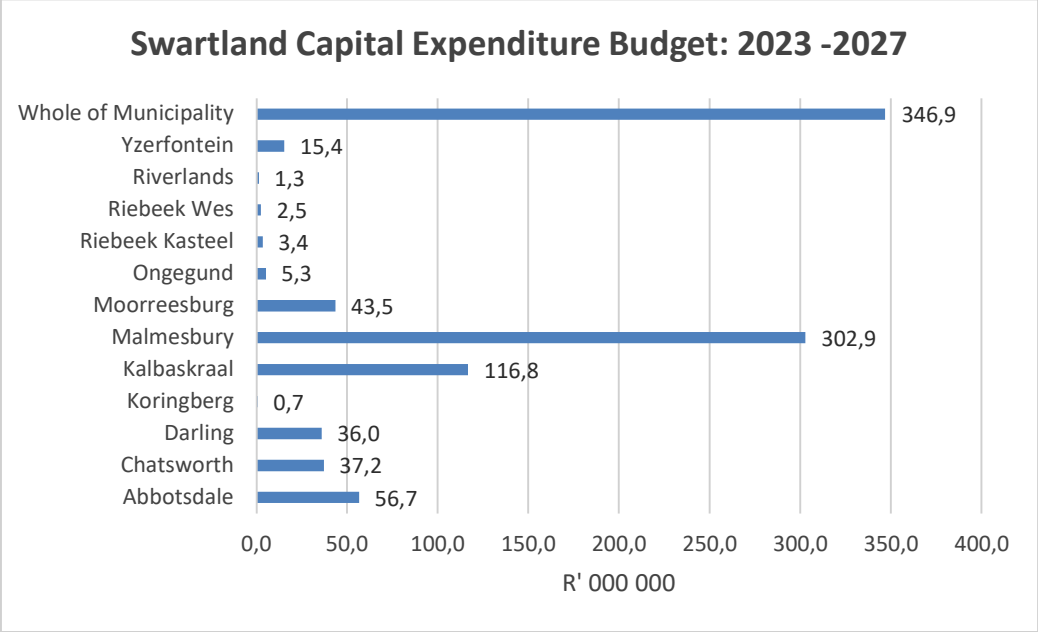
In summary, the proposed SDF development is well aligned with the Master Plan budget and the 5-year Capital Expenditure budget.

Figure 23: Proposed Development Extent: 2023 - 2027



A summary per settlement reflects the priority areas in the Swartland as per figure below.

Figure 24: Swartland Capital Budget: 2023 - 2027



For the five years ahead, Malmesbury & Abbotsdale and Kalbaskraal benefits the most. Darling Chatsworth and Moorreesburg follows, with Yzerfontein and the Riebeek Valley benefitting the least over the SDF cycle.

A comparison between the Master Plan budget and the 2023 – 2027 approved Capital Expenditure budget. The conclusion is that for Water there is alignment and additional projects whilst for electricity and sewer there is alignment.

Bulk Water Capacity: Sufficient Bulk Water Capacity , one reservoir (Kamp) need extra capacity.

Water Infrastructure: The master plans provide for a bulk supply to Chatsworth and Kalbaskraal in 2022 and a new reservoir at Kalbaskraal in 2023 . In Riebeek Valley upgrading the network & implementing a PRV zone and in Riebeek West upgrading the network was planned for 2022. New projects for 2023 include bulk supply to Ongegund and new argumentation of bulk supply to Riebeek West.

At Yzerfontein, PRV Zone implementation is planned and at Malmesbury, upgrades benefiting Wesbank and De Hoop housing (Malmsebury Western Extension) was planned for 2021. Upgrades for 2023 include Panorama (Malmesbury Northern Extension) and Abbotsdale. Long term planning (2040) plans to upgrade bulk supply to Wesbank reservoirs.

In the 2023-2027 budget water projects budgeted for includes Chatsworth, Darling, Kalbaskraal, Malmesbury, Moorreesburg, Ongegund, Riebeek Kasteel, Riebeek Wes and Riverlands.

Electricity Infrastructure: Electricity upgraded in Moorreesburg and Malmesbury, and needed in Darling and Yzerfontein.

In the 2023-2027 budget electricity upgrades is budgeted for Darling, Malmesbury, Moorreesburg and Yzerfontein.

Sewer Infrastructure: Sewer no new infrastructure, but verification of infrastructure in Malmesbury, Riebeek Kasteel, Abbotsdale and Moorreesburg. New Sewerage works is planned for Malmesbury Abbatoir and outfall for Darling and related infrastructure for Chatsworth.

In the 2023-2027 budget Abbotsdale, Chatsworth, Darling, Malmesbury, Moorreesburg have budgets allocated.

From the comparison of the Capital Budget allocation and the alignment with the Master Plan, the settlement development priorities should be adjusted.

1. First level: Malmesbury & Abbotsdlae and Kalbaskraal
2. Second level: Darling, Chatsworth (including Riverlands), Moorreesbug and Riebeek Valley
3. Third level: Yzerfontein

Whilst the Riebeek Valley benefitting the least from the capital budget over the SDF cycle the development proposals for the SDF cycle can be absorbed and hence the Valley moved from third to second level priority.

7.2.3 Funding

The municipal funding sources are listed below:

Municipal Own Funding (CRR)	99 949 294	101 665 452	70 374 545	99 643 329	111 596 939
External Loans	-	-	33 000 000	17 000 000	-
Donations	11 203 025	1 224 943			
Dept. Human Settlements	3 945 000	55 314 000	64 890 000	30 000 000	
Dept. Cultural Affairs and Sport	50 000	1 016 000			
Dept. Community Safety	137 485	40 000	40 000		
Dept. Local Government	10 945 000	926 000			
Municipal Infrastructure Grant (MIG)	33 810 000	24 708 000	25 664 000	26 660 000	10 432 656
RSEP	1 200 000	500 000			
Integrated National Electrification Programme (INEP)	17 600 000	23 658 000	25 000 000	35 000 000	
	178 839 804	209 052 395	218 968 545	208 303 329	122 029 595

7.3 Proposed priorities/ Affordability

The alignment of the SDF priorities with the Capital Budget Allocations reflect what proposals can become implementable according to what the municipality can afford.

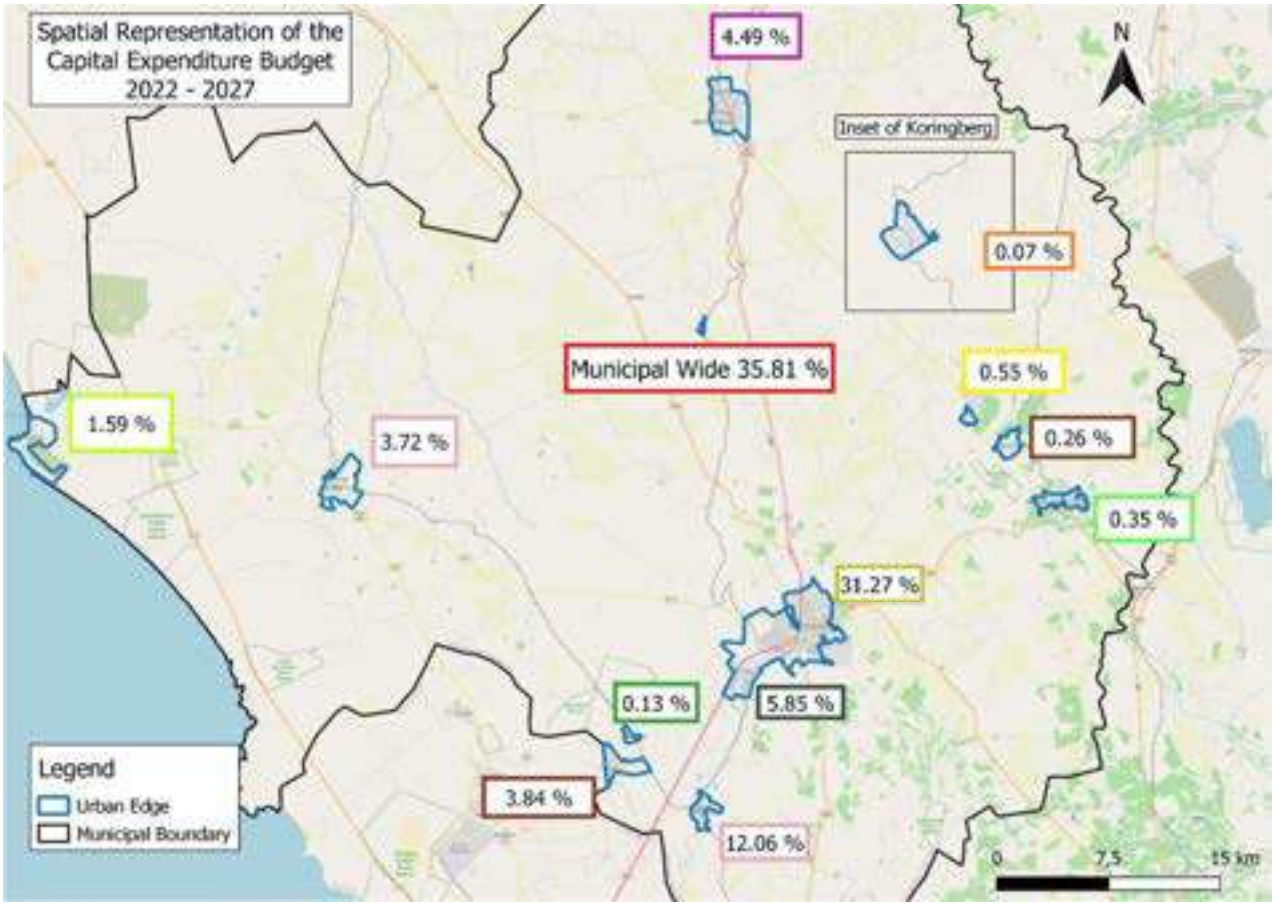
	SDF Proposals	Capital Budget Allocations
First level	Malmesbury and Abbotsdale	Malmesbury
Second level	Chatsworth (including Riverlands), Kalbasraal, Yzerfontein	Abbotsdale, Darling, Chatsworth, Kalbaskraal, Moorreesbug, Yzerfontein
Third level	Darling, Koringberg, Moorreesburg, Riebeek Valley,	Koringberg, Riebeek Valley, Riverlands

7.3.1 Spatial Priority Areas

Spatial priority areas were determined by ranking settlement according to percentage budget allocation:

First Level:>10%	Malmesbury
Second Level: 1% - 10%	Abbotsdale, Chatsworth, Darling, Moorreesburg, Yzerfontein
Third Level: <1%	Koringberg, Kalbaskraal, Ongegund, Riebeek Kasteel, Riebeek Wes

Figure 25 Spatial Representation of the Capital Expenditure Framework



7.3.2 Precinct Plans

Greenfields urban settlement proposals usually go hand in hand with urban design frameworks and services plans. However precinct or development plans plan are required for the following rural proposals.

No	Rural Proposals	Infrastructure Implications
1.	Promotion of the N7 intensive rural corridor south and north of Malmesbury	Develop an area plan to determine the required infrastructure.
2.	Promotion of transport, tourism and economic node development on N7 (R45 and Klein Dassenberg) and R27 (R315)	Develop an area plans for each of the two nodes to determine the required infrastructure..
3.	Enhance the formalization of the Paardeberg as a world wine and conservation destination (cross border activity).	Develop an area plan to determine the required infrastructure.
4.	Promote Darling and Yzerfontein as a world biodiversity and film destinations	Included in settlement provision and area plans.

7.3.3 Comprehensive List of projects

Capital projects for a 10-year period are listed in section x

7.4 Implementation Requirements

To implement the SDF proposals, Swartland municipality required partnerships with the private and government sector. A municipal committee was established to monitor the alignment between budgets, proposal, priorities and expenditure.

a) Institutional Structure

A municipal committee was set up as part of the provincial Capital Expenditure Pilot Project. Representatives from Municipal Finance, Civil and Electrical Services and Community Development (Both Spatial and IDP) serve on the committee.

b) Private Sector Participation

Investors prefer to develop in Malmesbury, Yzerfontein, Riebeek Kasteel, Darling and Moorreesburg . Such development will contribute capital resources that should secure the development of infrastructure in these settlements.

c) Review and Monitoring of the SDF

The Capital Expenditure Committee should review and monitor the implementation of the SDF aligned with the IDP review (annually).

d) Amendment of SDF

SDF amendments within the 5-year cycle is unlikely. Exceptions are derived from the annual IDP review resulting in:

- Aims and objectives of the IDP are changed;
- IDP changes that require sector plan changes
- Budget realignment requirements (as Expenditure is not aligned)
- Circumstances out of control of the Municipality

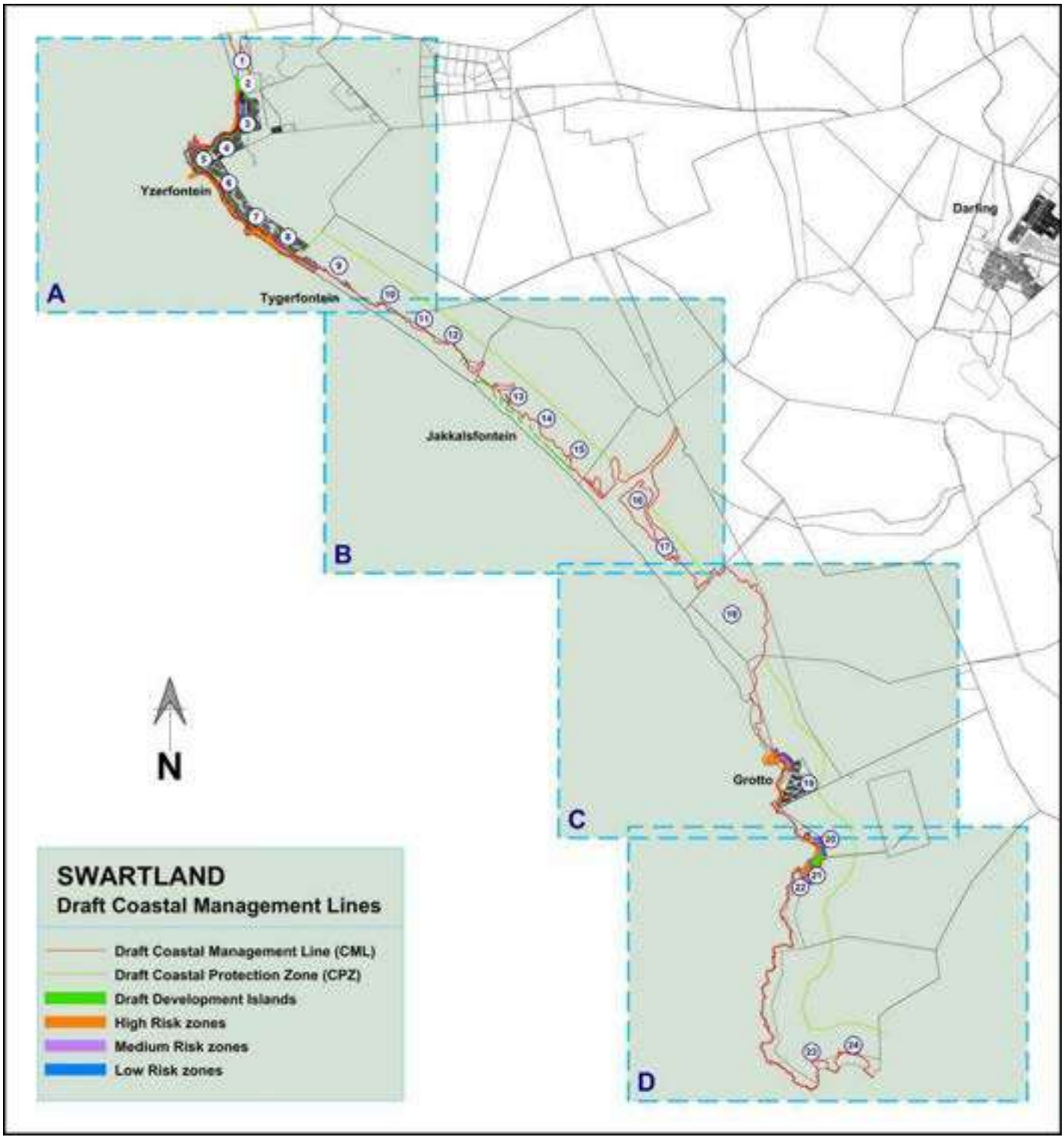
If no such exceptions demand an amendment, the SDF will be rewritten at the end of the 5-year cycle.

Swartland SDF Annexures

Annexure 1 Draft Coastal Management Lines for the Swartland

(Compiled from the document "*Coastal Management/Set-back lines for the West Coast District, June 2014"* prepared by Royal Haskoning DHV for the Western Cape Department of Environmental Affairs and Development Planning.)

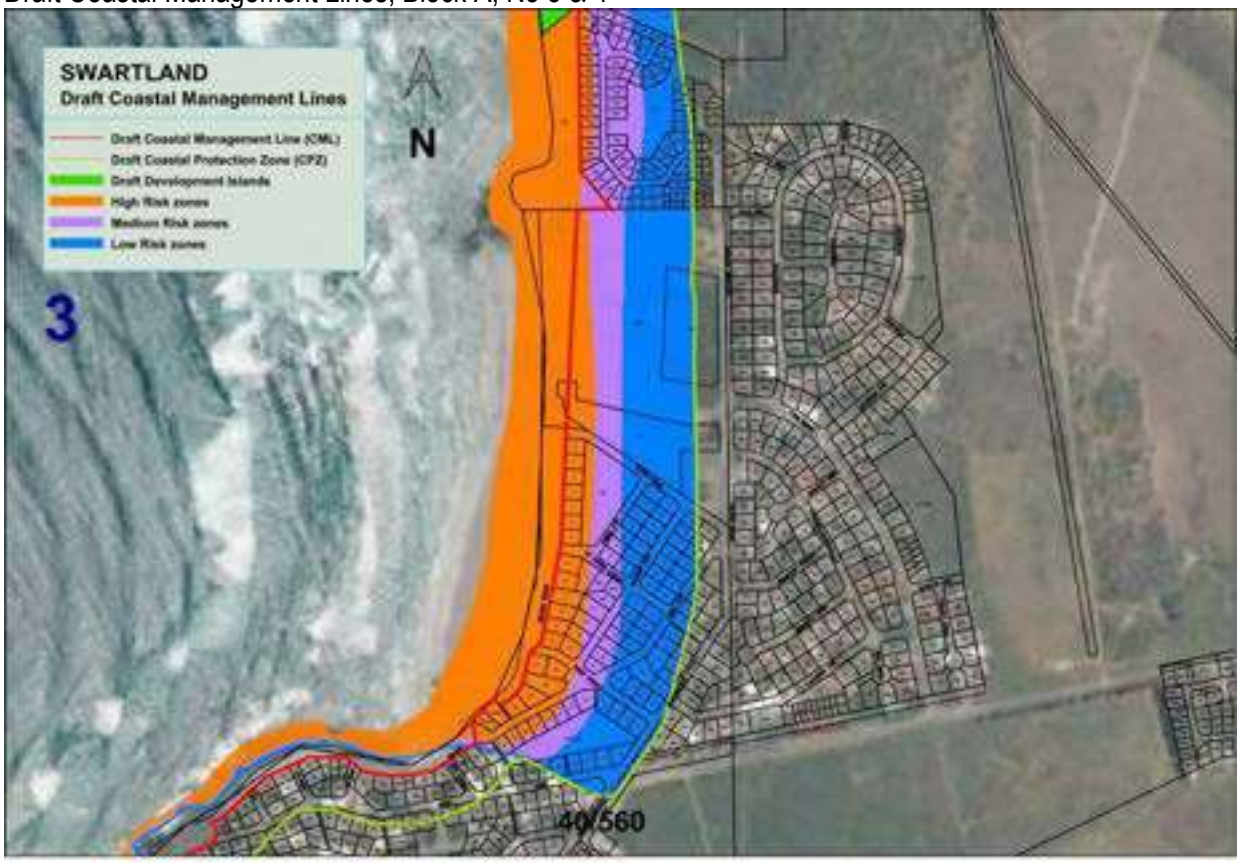
Draft Coastal Management Lines, Blocks A – D (overall)



Draft Coastal Management Lines, Block A, No 1 - 10

Draft Coastal Management Lines, Block A, No 1 & 2

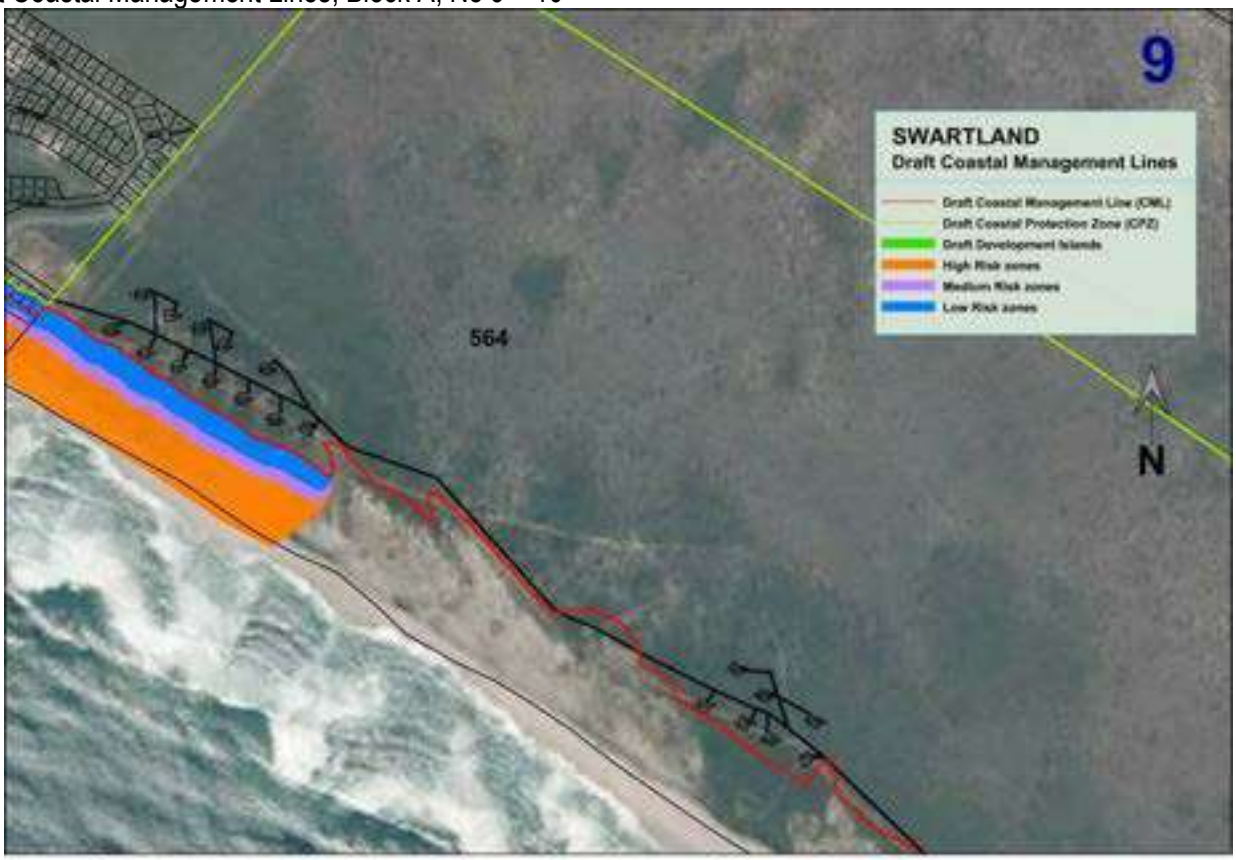
Draft Coastal Management Lines, Block A, No 3 & 4



Draft Coastal Management Lines, Block A, No 5 & 6

8 Draft Coastal Management Lines, Block A, No 7 –8

Draft Coastal Management Lines, Block A, No 9 – 10



Draft Coastal Management Lines, Block B, No 11 – 17

Draft Coastal Management Lines, Block B, No 11 – 12

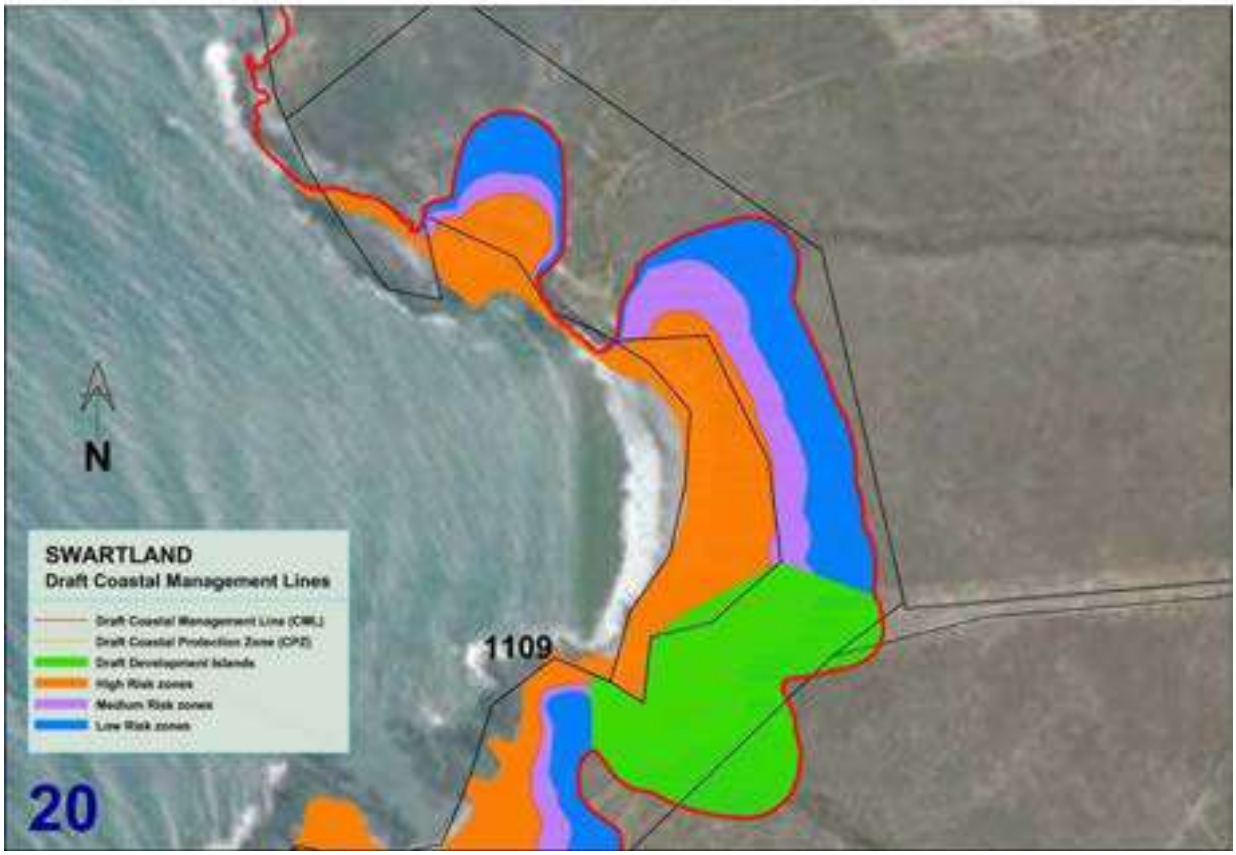
Draft Coastal Management Lines, Block B, No 13 – 14

Draft Coastal Management Lines, Block B, No 15 – 16

Draft Coastal Management Lines, Block C, No 18 – 19

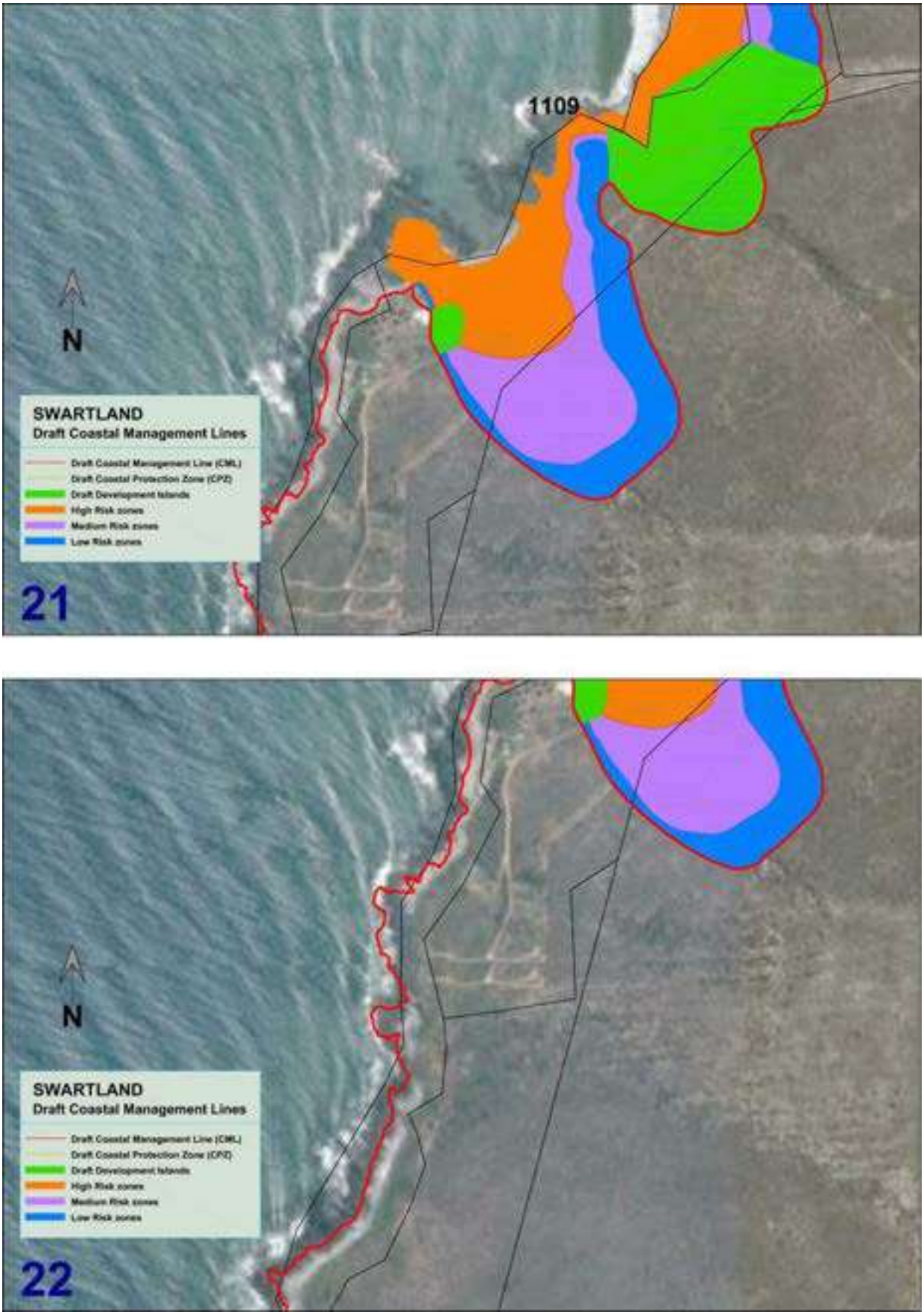
Draft Coastal Management Lines, Block C, No 17& 18

Draft Coastal Management Lines, Block C, No 19 -20



Draft Coastal Management Lines, Block D, No 21 – 24

Draft Coastal Management Lines, Block D, No 21 – 22



Draft Coastal Management Lines, Block D, No 23 – 24

Annexure 2 Spatial Analysis, Legislative & Sectoral Plan Directives

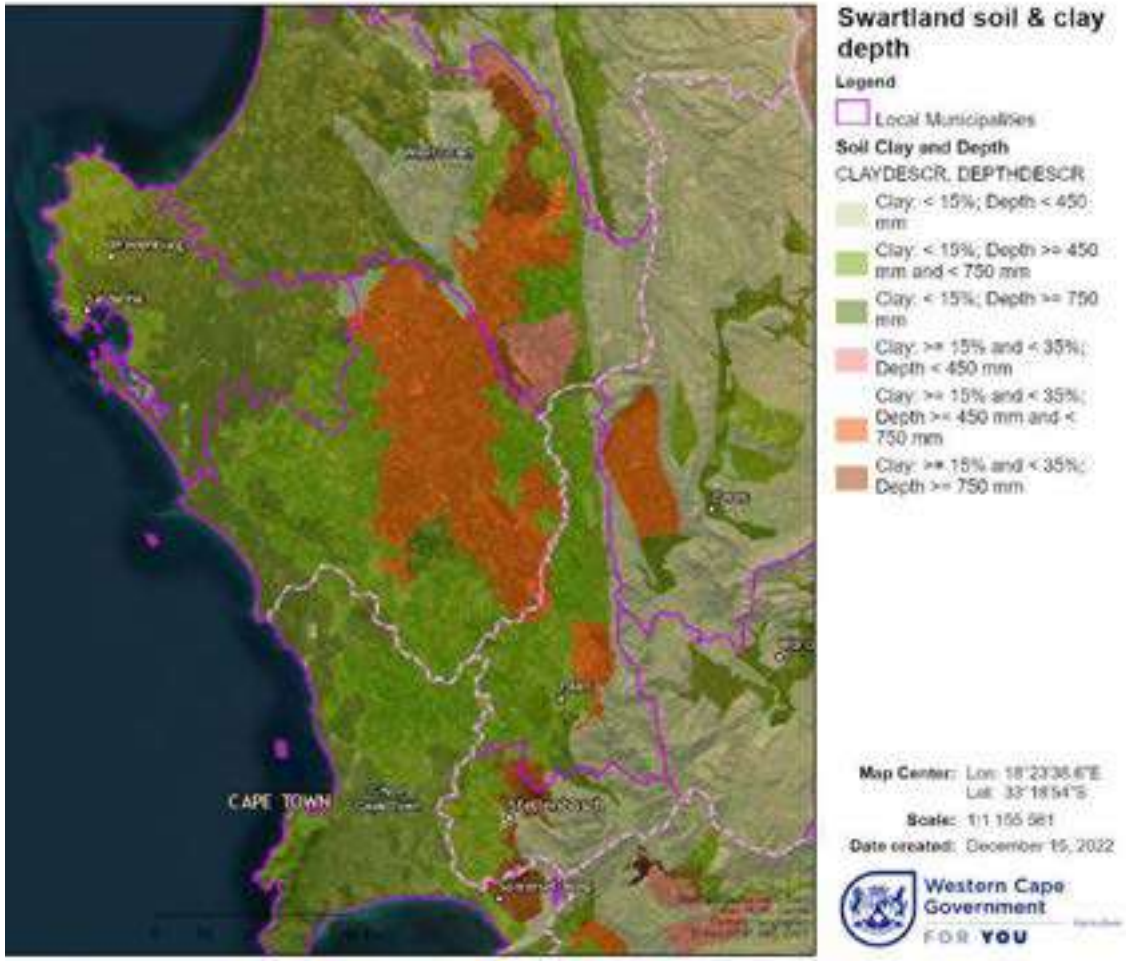
3.1.1 Biophysical Environment

3.1.1.1 Geology and Soils

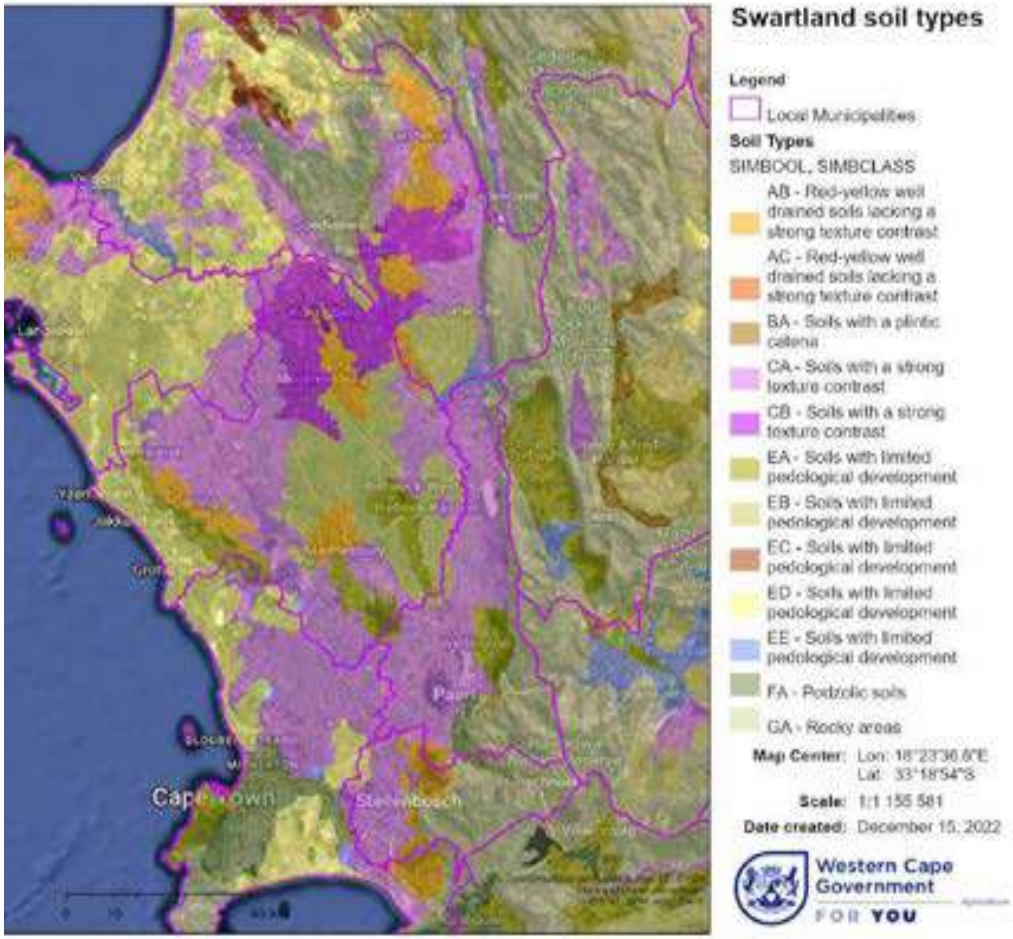
Elements	**Directives**	Applicable Legislation
The geological formations in the Swartland, consisting of various igneous, sedimentary, metamorphic rocks, are: Malmesbury Formation, Cape Granite Suite, Klipheuwel Formation, Cape Super group (SACS, 1980), Bredasdorp (T-Qb), Alluvium, sand, calcrete (Q). Malmesbury formation can be divided into three separate areas: (d) The south-western domain: In the south-western domain contain the Tygerberg Formation, situated between the Atlantic Coast and major faulting, is the result of turbidity currents, possibly on a trench plane with some volcanism. (e) The Central domain: The Franschhoek Formation and the Malmesbury deformational patterns are similar in that they have both been infolded with the granites. The higher degree of deformation of the Franschhoek Formation indicates that it is older than the post Malmesbury Klipheuwel Formation. The Klipheuwel Formation, as a separate formation on its own, not part of the Malmesbury Group, is a molasses-type deposit that is attributed to prograding fluvial deposition on a basement of high relief. In places the formation lies unconformable on granites of the Cape Granite Suite. The Table Mountain Group further overlies it, discordantly. (f) The North-eastern domain: This domain is supposed a predominantly marine sedimentation with a geosynclinals setting for the Piketberg Formation. The reason forth is that the lithological types and extensive developments of graded bedding are similar to ancient mariner fans. In lithology the rocks of the Piketberg Formation closely resemble those of the Franschoek formation. (Morkel, 1998)	Though limited mining activity exists, likely mining areas should be indicatively delineated. The following different Geological Rock Formations are found: - *Granite:* On the crest of Paardeberg and Darling Hills and surrounding landscapes, degraded by erosion. - *Granodiorite:* On the crest of Darling hills – found at the contact zone between granite and Malmesbury formations. Characterized by its high mica content. - *Diorite*: In two isolated areas direct south west and north west of Malmesbury as well as in Yzerfontein. These rock formations are older than the granites and have the same composition of dolerite but have coarser crystals due to the slow cooling process. - *Dolerite:* Limited to areas within the hills to the east of Moorreesburg. - *Shale:* Very limited occurrence. - *Greywacke:* Occur widespread west of Malmesbury and Moorreesburg. - *Sandstone:* Only occur in Kasteelberg at Riebeek-Kasteel and Riebeek West. - *Limestone:* A ridge between De Hoek (Piketberg) and Riebeek-Kasteel.	

The Various Coastal Deposits cover mostly the coastal areas; consist of sand, dune and beach sand, mudstone, clay, lignite, limestone, calcarenite, calcrudite, sandstone, conglomerates, and calcareous sand.	- *Conglomerate:* In the Piketberg formation as well as the Klipheuwel formations at Porterville. - *Dolomite:* Very old Calcium and Magnesium deposits and limited to some areas where greenstones are found. - *Slate:* East of the Berg River in the direction of Porterville. - *Quartzite:* at the base of Kasteelberg. - *Green Stone:* In the Bridgetown formation.	
Soils in Swartland vary greatly over short distances, making this area vulnerable to varying erosion rates. Coastal deposits are particularly prone to erosion if the natural vegetation is disturbed, for example by cultivation.	Soil type determines Agricultural cultivation or activities and natural vegetation. Demarcate SPC for Agricultural and natural areas to be preserved and rural areas that can be developed as agricultural support areas.	**CARA, 1998:** Protect natural resources (a) uncultivated agricultural land (b) slope > 20% (c) vegetation within a vlei, wetland, marsh or within flood areas.
Soil depth in the Swartland varies generally between 450cm – 750cm over most of the Swartland with the exception of soils immediately north of Malmesbury and along the coast where soils are deeper than 750cm. The majority of the Swartland area has a soil clay percentage of less than 15%. The western side of Swartland, above Malmesbury and the R45 has a clay percentage of between 15% and 35%. The Malmesbury Group formation covers the mountain area from Cape Town to Piketberg and includes materials such as greywacke and phyllite with beds and lenses of quartz schist, limestone and grit. This formation occur in pockets as foothills and lower laying undulating hills around Malmesbury, Riebeek mountain, Moorreesburg and Piketberg. The origin of the Malmesbury group is overwhelmingly marine. This substrate provides the Province's best soils for wheat, deciduous fruit and vineyards (Morkel, 1998).	Soil depth determines crop type and natural vegetation (flora). Provide for Agricultural and natural areas to be preserved, Landscapes to be preserved, Scenic Routes and rural areas that can be developed as agricultural support areas. High clay content around the settlement of Robertson and Ashton require detailed geo-technical studies prior to development.	**CARA, 1998:** Support production potential of agricultural land (prevent erosion –wind & water and degradation of water resources) & Effectively manage invasive plants.

Map 23: Swartland Soil & Clay Depth



Map 22: Swartland Soil Types



3.1.1.2 Climate

Elements	Directives	Applicable Legislation
Swartland is known for its mild Mediterranean climate with warm very dry summers and mild wet winters. The locality of the region between the Atlantic Ocean in the west and the Berg River and Witzenberg and Great Winterhoek Mountains to the east forms a topographical area with various micro climates that vary between the coastal areas and the inland areas. Coastal temperatures are very mild with average summer temperatures during the day of around 28°C and mild average winter day temperatures in the low 20's. In inland areas have higher average day temperatures in the summer months in the middle to high 30's.	Day night and (summer and winter) temperature contrast determine Agricultural cultivation or activities, natural vegetation types and built environment development types. Building design and agricultural technology have to consider insulation, orientation, materials (environmentally sensitive design, & thermal characteristics), and help to reduce water demand and to mitigate climate change. Risk zones should be identified and delineated.	**DMP** Strategically addresses risks. Fire; Drought; Floods; Road accidents; Wind; HIV/Aids; TB (risk reduction & preparedness). Coastal zones.
Swartland is located within the winter rainfall region with 80% of the rainfall that occur from April to September. The average annual rail for the following areas in Swartland are: Koringberg Rooikaroo area average 250mm, the lowest with a very short rainfall season. Middle Swartland Piketberg and Porterville average 300mm increasing from the lower lying areas in the west towards the higher lying areas in the east. Koeberg, Kortreiberg, Malmesbury and Voorberg average between 400 and 500 mm. Durbanville, Mamreweg, Paardeberg and Riebeek average between 500 and 600 mm with deposits of more than 700 mm occurring in the higher lying areas of the Riebeek mountains.	Rainfall and rain season (winter) determine agricultural crops and natural veld and vegetation type (floristic region). Delineate SPC for agricultural and natural areas to be preserved and for Scenic Routes. Provide for seasonal tourism season and seasonal tourist attractions.	**NWA, 1998** Regulate use, development, management of water resources & protect it. **NFEPA project** aims to: Identify Freshwater Ecosystem Priority Areas to meet national biodiversity goals for freshwater ecosystems.

The average wind speed for the following areas in the Swartland are: Koringberg Rooikaroo around 20km/hour in summer and higher during winter and January. Mild winds are experienced during July to August enhancing the pollination of winter grains. Middle Swartland Piketberg and Porterville known for mild winds that rarely have speeds of more than 20km/h. The most winds occur during June to September. Koeberg, Kortreiberg, Malmesbury and Voorberg known for wind speeds of less than 20km/h. Most winds occur during the month of July. Durbanville, Mamreweg, Paardeberg and Riebeek known for mild winds that rarely have speeds of more than 20km/h. Stronger winds occur mostly during the month of July. Horizontal Global Irradiance for the entire Swartland is between 1901 – 2000 kWh/m2/annum.	Spatially delineate likely locations for alternative energy facilities according to irradiation and wind speed and consistency: Consider dominant wind direction (South East to West North West) in settlement and building design.	NEM: AQA, 2004 Ensure national air quality is not harmful to health and well-being (ambient air quality standards, local emission standards; and air quality monitoring and reporting). White Paper for Sustainable Energy Use in the Western Cape, 2010 Zoning Scheme Regulations.
There are generally high levels of evaporation (from 18mm to 20mm) during the summer months due to higher temperatures and lower evaporation levels during the winter months being the rain and growth season in the Swartland. Thus evaporation does not have a negative impact on production of winter crops, yet it does have an impact on dry land and irrigated vineyards. The high levels of evaporation during December to March support the ripening of the grain and grapes.		

3.1.1.3 Climate Change & Vulnerable Systems

Elements	Directives	Applicable Legislation
Four vulnerable systems have to be consider given the impacts of climate change: ○ **Natural systems** – water, biodiversity, and coastal and marine systems and resources; the local economy and social structure, biophysical environment (natural), and governance systems ○ **Economic sectors** – agriculture, tourism and fisheries. ○ **Built environment**, livelihoods and disasters – social systems, extreme events (floods, fires). ○ **Economic resources and infrastructure** – energy, transport, health and air quality;	Measuring the vulnerability of possible socio-economic risk areas and likely key sectors that will be affected should guide development that are hanging in the balance: Measuring consider the following scale: - *Exposure* (spatial extent of the impacts), - *Sensitivity* (the extent of the social groups that will be impacted on with regards to their livelihoods, economic activity, health and household resources) and the - *Adaptive capacity* (availability of alternative and capacity to implement)	"Climate Change and Hazard Risk Areas Study", 2014 has three broad categories: • Economic Areas • Natural resources based regions and • Service provision
Swartland is experiencing climate change alike the trends anticipated in the Western Cape Climate Change Strategy (2008) for the period 2030 – 2045: • Increased annual average temperature of at least 1 °C by 2050 (Intergovernmental Panel on Climate Change (IPCC) Fourth Assessment Report (2017) expected an increase of between 3 and 5 °C by 2100); • Increased frequency and intensity of extreme events; • Increased conditions conducive to wildfires (higher temperatures and increased wind velocity); • Reduced rainfall in the western parts of the Western Cape; • Decreased water resources;	The landscapes that provide resilience to climate change need to be identified and protected, these are; - Georges, which provide important connectivity and temperature and moisture refuges; - South facing slopes, which, similar to gorges, provide refuge habitats; - Topographically diverse areas, which contain important altitude and climatic gradients, important for climate change	SmartAgri, 2016 sets out to: • Provide a time-specific strategic roadmap to a climate-resilient agricultural sector • Provide spatially explicit, commodity-specific and scale-sensitive implementation pathways that are practical and effective for specific climate risks • Promote opportunities for the sector through climate change adaptation and mitigation • Inspire farmers and agri-business to optimise decision-making for a resilient and sustainable future in the face of complex and uncertain changes • Strengthen the enabling environment for autonomous (farmer-led) and planned (government-led) responses • Facilitate a more integrated, co-ordinated and co-operative response through strong multi-stakeholder partnerships, networks, and knowledge sharing\

• Reduced soil moisture from an increase in temperature coupled with a decrease in average precipitation; and, • Temperature changes impacting on crop cultivation and causing crop burn, drought, pests and microbes resulting in yield reductions, and loss of rural livelihoods and use of shade netting.	adaption as well as ensuring a range of micro-climates - Riverine corridors, which provide important connectivity	• Mobilize and direct new investments in agriculture in support of adaptation and mitigation
Natural Systems: Climate Change Impacts on **water** resources, coastal dynamics and habitats most likely will manifest as changes to the biophysical conditions in the Swartland. In the west towards Darling, rainfall of up to 90mm per month is the norm during the winter months, whereas 10mm or less is common in summer months. Extreme rainfalls of over 200mm per month can occur, with the most recent event having taken place during 2006. (Climate change and hazard risk areas study for Swartland by Royal Haskonig DHV, 2014).	Possible actions to be implemented by the municipality to reduce the vulnerabilities of water sources includes: - artificial groundwater recharge and strict ground water management systems; - desalination of groundwater; - local water resource management and monitoring; - grey water recycling; and, - Tariff structures to reduce water consumption - Waste water to be factored in when planning for growth, e.g. major industrial development - Proximity of landfill sites to water sources - Implement rainwater harvesting throughout the municipality - grey water recycling; and, Tariff structures to reduce water consumption Waste water to be factored in when planning for growth, e.g. major industrial development - Proximity of landfill sites to water sources - Educate residents about water saving measures and waste reduction. Sourcing of water where water sources are currently replenished by topography-linked precipitation or wetlands & water security for domestic, industrial and agricultural use - Water conservation strategies - Long term water resource planning with provision for future demand and ecological requirements - Water re-use and recycling - Disinvestment in water-intensive activities	

	- Demand side management - Identify alternative resource supply sources, funding schemes and technologies - Creating or facilitating incentives and disincentives for particular economic activities	
Natural systems: Indirect impacts on rural livelihoods includes a loss of **biodiversity** and resultant loss of ecosystem services (a 30% loss in species is projected in worst case scenario) and increased veld fires due to increased temperature, likely spread of alien vegetation and loss of biodiversity and floods (rainfall events is likely to be fewer, with more dry days in between but more intense, impacting on crops, livestock, natural flora (wild flowers) and settlements. Biodiversity (i.e. remaining sensitive habitats) and sensitivities related to ridge areas (microclimates and water resources) are inherently limited to face the impacts of climatic change. Unless adequate migration corridors as well as suitable alternative spaces are available, the ecological aspects will not be in a position to adapt. Finally, in terms of *Adaptive Capacity*, only two natural features stand out as clearly without adaptation options or the means to implement adaptation: • Biodiversity • Mountains & ridges *The* local economy and social structure, biophysical environment (natural), and governance systems *is <u>one of the four vulnerable systems</u> that will have to coupe with disasters and extreme events*	Delineate Climate Change Corridors providing buffers for ridge areas. Protect and maintain biodiversity and eradicate alien vegetation. Crop type determines landscape and settlement character. Project the changes of cultivation and cultivation practices based on threatened resources and its impact on the landscape and on tourism. Establish adequate migration corridors as well as make available suitable alternative spaces to enable ecological processes and aspects to be in a position to adapt. Biodiversity (i.e. remaining sensitive habitats) and sensitivities related to ridge areas (microclimates and water resources) are inherently limited to face the impacts of climatic change. Addressing the vulnerabilities in the local economy and • Diversification of economic activities that take cognisance of the challenges / opportunities related to climate change • Finding alternative sources of resources such as water and energy • Strengthening disaster risk management • Adopting of renewable energy technology • Decoupling economic activity from the rising cost of grid-supplied energy • Identifying alternative resource supply sources, funding schemes and technologies • Creating or facilitating incentives and disincentives for particular economic activities • Involving disaster risk management • Creating conditions favourable for entrepreneurship • Early adoption of climate compatible activities • Actions to climate proof remnant natural resources	NWMS, 2011 Implement a waste management hierarchy during lifecycle of waste: - avoid and reduce waste, - re-use and recycle, - recover, - treat and dispose

	• Spatial planning and building approvals are to protect biodiversity elements	
Economic Sectors: Agriculture and tourism is a noticeable contributor to the economic base of Swartland. Climate change most likely will impact agricultural cultivation, the landscape and produce and impact tourism indirectly as it will result in raised temperature, variability in precipitation, changes in precipitation patterns, changes in the growing season, changes in rainfall pattern, and changes in the availability of water, for both natural and irrigated agricultural production for example the wild flowers season. Livestock farming will also be adversely affected because of dryer periods throughout the year. Given cultivation's dependency on water, climate change most likely will result in decreased food security because of decreased water resources and increased competition for water resources and storage facilities and increased summer as well as winter temperatures resulting in crop damage.	Preserve intensive (vineyards, orchards and pastures) and Extensive Agricultural cultivation. • Regulate water demand especially for agricultural purposes; • Develop more effective water management strategies; • Improved technologies to be explored; • Protection of ecological water reserves should be a priority; Protect and maintain biodiversity and: - eradicate alien vegetation - Crop type as it determines landscape and settlement character (Anticipate changes of cultivation and cultivation practices based on threatened resources and its impact on the landscape and on tourism). Identify new habitat areas as replacements for existing areas that become climatically unsuitable to economically important biodiversity, and bolstering the natural functioning of ecosystems in order to maintain the sustainability of natural resources • Conservation strategies at landscape level (e.g. biosphere) • Fine scale biodiversity planning that creates the necessary ecological nodes and migration corridors • Lobbying conservation authorities for fine scale biodiversity planning • Application of biodiversity planning in spatial and development planning	

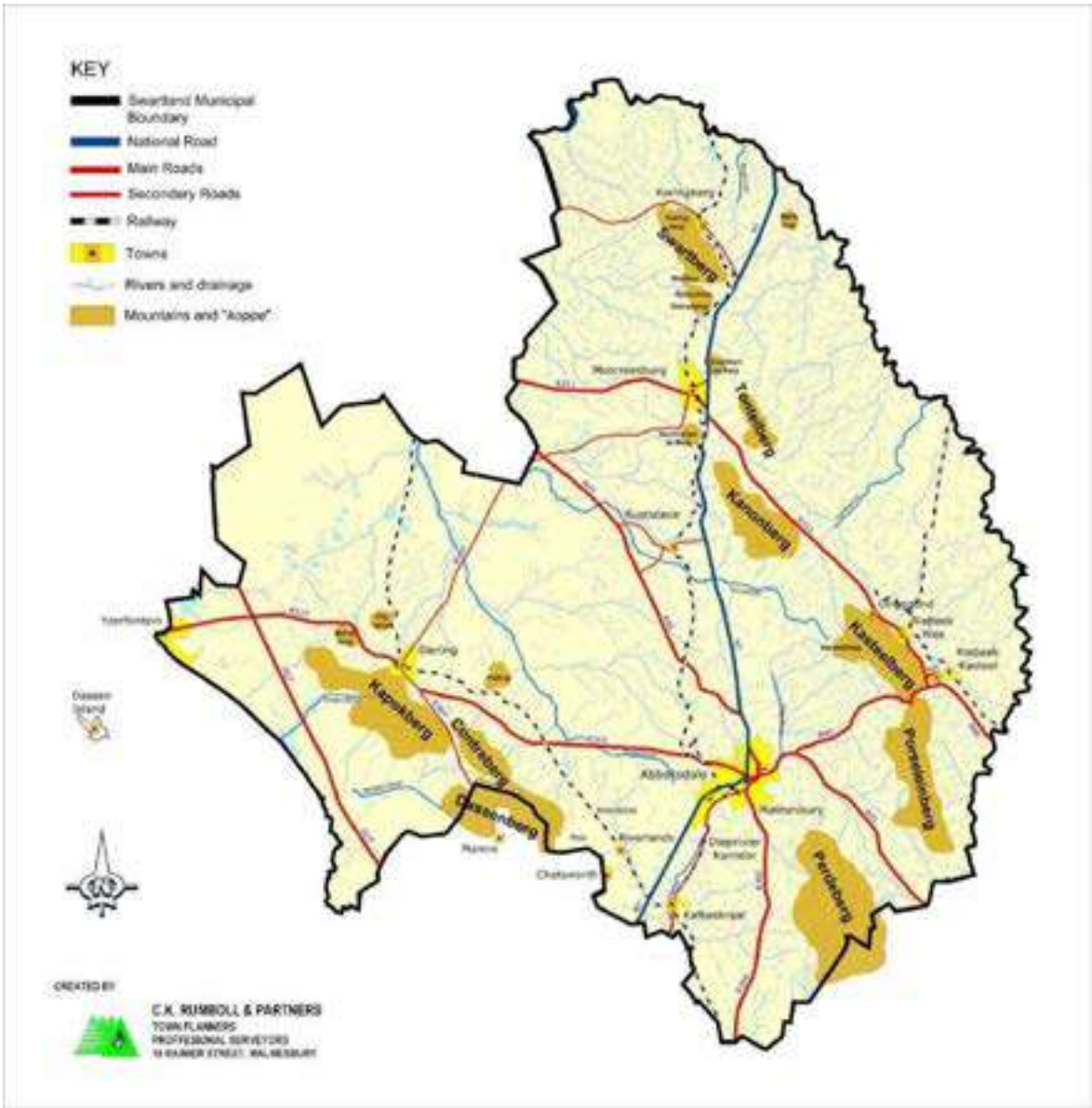
Economic Resources and Infrastructure: The Climate Change Strategy aims to, with specific reference to **energy**, to reduce the Provincial carbon footprint by regulating **air quality**; encourage alternative domestic energy use; use of refined (cleaner) fuels for **transport;** energy efficiency and renewable energy overall. The White Paper for Sustainable Energy Use in the Western Cape (2010) sets targets in respect of sustainable energy use for the province. It stipulates that 15% of electricity consumed in the WC is to be sourced from renewable energy sources by 2014 measured against the 2006 Provincial consumption. Swartland has to contribute to the efforts to reduce the emission of greenhouse gasses and thereby delay the impact of climate change. One of the four vulnerable systems is: • Economic resources and infrastructure – energy, transport, health and air quality; *[Infrastructure and economic resource including energy, transport, air quality and health is one of the four vulnerable systems that will have to coupe with disasters and extreme events].*	Improving access to basic services, and improving the reliability of supply • Innovative solutions to the dilemma of rural service delivery • Distributed systems (e.g. micro effluent treatment plants) • Strengthening disaster risk management • Identify alternative resource supply sources, funding schemes and technologies • Involvement in disaster risk management	NWMS, 2011 Implement a waste management hierarchy during lifecycle of waste: - avoid and reduce waste, - re-use and recycle, - recover, - treat and dispose
One of the four vulnerable systems is: • The **built environment**, livelihoods and disasters – social systems, extreme events (floods, fires). *The built environment and livelihoods is one of the four vulnerable systems that will have to coupe with disasters and extreme events.* The areas less affected by climate change include specific commercial sectors, urban areas, and the provision of health, sanitation and water services. Urban areas aid diversity of- and access to resources that reduce sensitivity climate change. Disasters anticipated involve fires, floods and droughts	Building orientations, architecture and materials used must be sensitive to aspects (i.e. north facing, south facing, etc.) in order to reduce unnecessary energy consumption. Appropriate thermal treatment of buildings need to be applied to ensure they maximise the use of natural energy and minimise the use of electricity. Appropriate treatment could for example include: • Insulating outer walls, ceilings and windows to prevent heat/cool air loss; • Constructing buildings with lighter coloured reflective roofs to reduce heat absorption in summer which will reduce reliance on air-conditioning; • Insulating geysers with thermal blankets; and, • Installing energy efficient lighting and appliances. • Implement rainwater harvesting • Educate residents on water saving measures and waste reduction. • No structures are allowed within 1:50 flood line or in dry stream zones. • All structure has to have a firebreak clearance between built up area and natural vegetation and around structures.	

3.1.1.4 Topography

Elements	Directives	Applicable Legislation
The landscape is characterized by undulating hills that flattens towards the coastline, with four prominent smaller detached mountains within the area known as *Kasteelberg, Porseleinberg, Paardeberg* and *Darling Hills*. Different landscape character types, based on elevation, are identifiable (Norberg-Schulz's (1980): • Cosmic: does not contain individual places, but forms a continuous neutral ground. • Classic: clearly defined mountains and hills, imaginable spaces such as valleys and basins. • Romantic: indefinite multitude of different places. The dominant Swartland landscape character is cosmic with some classic areas where settlements are located at the foot of mountains or along water sources.	Topography determines agricultural cultivation & flora, hence landscapes to preserve & Scenic Routes Provide for minimal and mitigated urban development along scenic corridors and routes. Ensure land use changes maintain integrity, authenticity and accessibility of significant cultural landscapes (WCPSDF, 2009). Intensify land use within urban areas to combat urban sprawl and reduce negative visual impact on the natural and cultural landscape.	WCDM IDP, 2022 – 2027: Protect CBA's: agricultural activities and urban development where impact on biodiversity is lowest.
Mountains and mountain ranges in Swartland include: Paardeberg, Kasteelberg, Kanonberg, Swartberg, Dassenberg, Contreberg, Kapokberg, Klipberg, Porseleinberg, Neulfontein Hill and Koringberg are all prominent hills. *Kasteelberg* in Swartland east, is not only and well known beacon in the surrounding area but also provide for a picturesque backdrop for the towns of Riebeek Kasteel, Riebeek West and Ongegund. *Porseleinberg, slightly lower* as Kasteelberg, is located directly towards the south of Kasteelberg. *Paardeberg* is located to the south east of Malmesbury and Swartland and is an important beacon with the higher lying areas of the mountain that is covered in unique and rare natural vegetation and also contains a municipal dam. *Darling Hills* is located on the western side of Swartland providing for a separation between Darling and the coastline. There are various other smaller hills scattered within Swartland that does not form important beacons but have local significance such as Neulfontein hill	Topography determines: Water flow & rivers and natural vegetation to preserve How to deal with storm water development parameters for development on slopes and buffers too rivers Positioning of conventional and subsidized housing: on north facing slopes to benefit from most exposure to sunlight. Protect these smaller mountains and hills by determining development edges to allow for the protection of the natural vegetation on these mountains as an important visual component in the Swartland. • In case of cautious development, proceed with nodal development with fire trails as part of development footprint • Connects lower lying fynbos along mountain seams.	

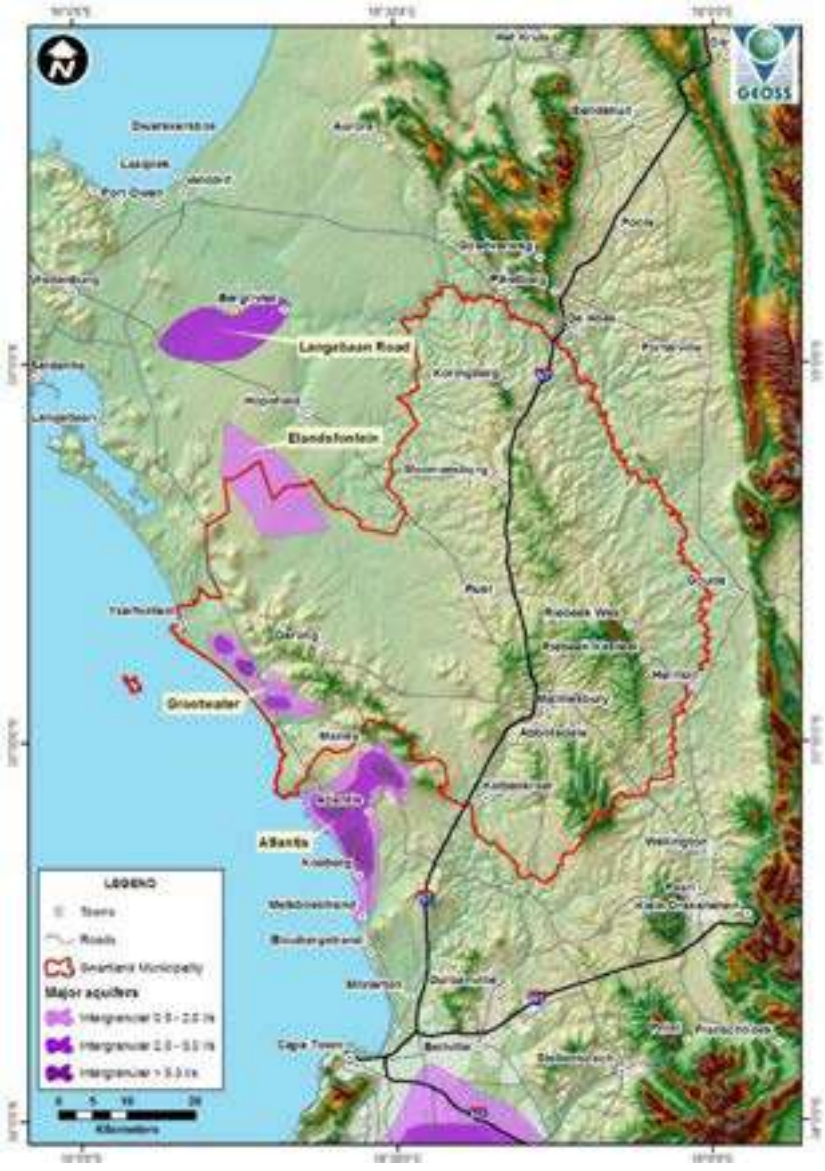
south of Moorreesburg, Koringberg forming the western backdrop of Koringberg settlement, *Swartberg* south of Koringberg, Dassenberg hills west of Chatsworth and a smaller series of hills from Moorreesburg (north) towards Kasteelberg (south) including Heuningberg.	• Prevent development that fragments ecological corridors • Prohibit location of telecommunication masts, 4x4 routes or intrusive infrastructure on exposed mountain tops. • Hiking trails should be developed and maintained in such a way as to prevent erosion.	
Slopes of more than 25% (greater than 1:4) are present at West of Riebeek Valley; South East of Darling and in rural areas. Mountains & ridges provide important habitat for animals and fauna life cycles (sensitive habitat), are prominent landmarks, create a microclimate, offers e*xpansive views, are sources for hiking trails and overnight accommodation and* for resorts and recreational use	Settlement opportunities to avoid: slopes steeper than 1:4, relocate on levelled areas (high building costs); and mountain ridges, to mitigate visual impact; Enhance & increase the importance of mountain ridges as refugia for biodiversity & hydrological processes	
Beaches and Dunes: West Coast beaches including Grotto Bay, Ganzekraal, Jakkalsfontein, Tygerfontein, Yzerfontein, and Dassen Island. Conservation of dunes and ocean life is paramount. Climate change: Coastal Lines are subject to development pressure, exposed to the onset of sea level rise and coastal erosion, facilitate aqua and marine culture and related facilities and home to degraded fisheries. Increased extent of storms	• Development setback lines must be strictly enforced to protect developments against coastal processes such as: o The impact of successive storms; o Coastal movement and erosion; o Global rise in sea level; o Fluctuation of natural coastal processes. • Development setback lines considers biodiversity and ecosystems (buffers potential change in ecological balance); • Removal and fragmentation of indigenous vegetation of dune areas must be prevented; • Precautionary principles must be strictly enforced with the installation of infrastructure below the high water mark; • Ban of vehicles from dunes and beaches areas • Encourage urban densification, restrict development and delineate coastal retreat lines where erosion is anticipated.	
Settlement areas or areas suitable for settlement have been delineated as per the proposal maps to follow.	• Ensure biodiversity and botanical studies are informing open spaces in future developments.	

Map 24: Mountain areas within the Swartland



Map 25: Catchments and Subterranean Government Water Control Areas, Swartland

Map 26: Location of major Aquifers in Swartland region and potential yield



3.1.1.5 Hydrology

Elements	Directives	Applicable Legislation
Water management Areas or rather the Water Control Areas in the Swartland Municipal area are as follows: • The **Yzerfontein Subterranean Government Water Control Area** was declared during February 1990, located within Tertiary/Quaternary drainage region G20. This area is excluded from any General Authorization for groundwater abstraction. • The lower part of the **Lower Berg River Valley Subterranean Government Water Control Area** was declared during September 1976 within the Tertiary/Quaternary drainage region G10 and G30. The topography of the Swartland is characterized by an elevated eastern edge formed by the existing mountains, which slope down across the inland plains and valley systems towards the coastal plain and Atlantic Coastline. The general drainage direction in Swartland is therefore in an east-to-west direction. The primary hydrological systems in Swartland are the Berg River and Diep River System. Smaller rivers and streams feed into these rivers and drain towards the ocean within this primary hydrological systems. There are a number of man-made dams located within the river networks through the Swartland municipal area, which are used for bulk water reticulation purposes for domestic use and agricultural irrigation. The most prominent of these dams in the Swartland is the Misverstand Dam, in the Bergrivier.	Hydrology determine agricultural cultivation, natural vegetation, Landscape Character and Scenic Routes Intensive agricultural areas (irrigation) require manmade production support (netting) Hydrology/ Water create development parameters regarding development and buffers. Dams to preserve water Implement Water Saving Strategies Landscaping with water wise plants To protect water flow (quantity) and quality, delineate rivers and buffers to preserve rivers and river systems. Formulate guidelines to deal with storm water Improve the status of the rivers Implement WCSDF 2019–2024 Environment & Water: • Link Swartland area to a larger network of natural areas, reserves and conservation areas. • Maintain productive agricultural land. • Consider environmental impact and provisions of NEMA; • Mitigate climate change • Protect key biodiversity and agricultural assets.	NWA, 1998: Ensure equal access to water provision, Effective sustainable and beneficial use of water (Growing demand for water) Protect aquatic and associated ecosystems Regulate use, development, management of water resources & protect it. MCAA 1970: Conserve, manage & use land in mountain catchment areas to ensure healthy water systems. NWA, 1998 NFEPA, 2011 (enable protection of FEPAs including free-flowing rivers) The NFEPA project aims to: Identify Freshwater Ecosystem Priority Areas to meet national biodiversity goals for freshwater ecosystems
Rivers and River systems SANBI (SANBI, 2007) defines rivers based on whether their natural conditions have been modified and their ability to contribute to the river ecosystem. Rivers that are classified Unmodified, Natural or Largely Natural with Few	Formulate guidelines to prevent impacts of urban and agricultural development on rivers and manage stream banks throughout the Swartland as part of the management of the catchment area.	NWA, 1998: Ensure equal access to water provision,

Modifications are considered intact and able to contribute towards river ecosystems. SANBI: National Freshwater Ecosystem Priority Areas (2007), class the River as Moderately Modified. Seriously Modified tributaries are the Rivers. The Berg River and Dieprivier are the two main river systems in the Swartland, with the Berg River the most prominent river which also form the eastern and northern borders of the Swartland jurisdiction. The NO Go River that flows through Moorreesburg towards the Misverstand Dam in the Berg River. The Diep River flow through Malmesbury in a southerly direction and enters the sea at Milnerton, with the Swart and Groen Rivers two prominent branches. Other Rivers are: Dwars, Modder, Salt, and Brak that are all prominent river systems in the Swartland. All these Rivers with all their tributaries and floodplains provide for vulnerable aquatic biodiversity. Rivers bank habitats are central to human wellbeing and economic development as it provide: • Food and medicinal plants; • Water for agricultural use, industries and domestic use; • Tourism, recreation and cultural uses; • Increased property value. Climate Change: Water resources, are critical resources, highly variable and Highly sensitive ecological features	▪ Allow for adequate buffer areas along rivers and drainage lines to protect sensitive habitats, water flow (quantity) and quality and river systems. ▪ Spatially indicate existing and historical linkages between wetlands, drainage lines and rivers including groundwater information where relevant. Linkages should be maintained and recovered where possible to buffer sensitive habitat ▪ Continuous river corridors facilitate movement of animals and vegetation distribution across inland and coastal gradients ▪ Keep flood risk areas along rivers clear and establish development parameters ▪ Provide for cultivation by irrigation (use of water) and recreational uses and resorts whilst protecting the water sources ▪ Protect rivers and tributaries that form the continuous open space network spine within towns which connects to the surrounding rural areas. ▪ Design and develop so that limited resources should guide increased demand generated. Increased evaporation and evapotranspiration cause decrease/ depleted sources as climatic changes are uncertain. ▪ Formulate guidelines to deal with storm water and improve the status of the rivers. ▪ Provide for intensive agricultural areas (irrigation) require manmade production support (netting) due to climate change and global competition. ▪ Implement rehabilitation programmes within Statutory Water Management areas to mitigate the impact of sediment on river flow generated by irrigation run off.	Effective sustainable and beneficial use of water (Growing demand for water) Protect aquatic and associated ecosystems Regulate use, development, management of water resources & protect it. MCAA, 1970: Conserve, manage & use land in mountain catchment areas to ensure healthy water systems. NWA, 1998: NFEPA, 2011 (enable protection of FEPAs including free-flowing rivers). The NFEPA project aims to: Identify Freshwater Ecosystem Priority Areas to meet national biodiversity goals for freshwater ecosystems

Wetlands (Freshwater ecosystems) within Swartland include Burgerspan, Saltpan, Dwars, Rooipansfontein, Koekiepan and Radyn are relevant wetland areas. A range of different wetland types occur within the Swartland, including those formed where the Grootwater aquifer (which extends from Yzerfontein to Modder River) reaches the surface and forms pans, vleie or perennial springs. The Yzerfontein and Darling pans, and the wetlands (Vlei) behind the primary dunes on the northern boundary of Yzerfontein are all important coastal wetlands. Wetland and their surrounding buffers containing natural vegetation provide for various valuable ecological function: • Improve water quality (filtering & purification, retention of sediment, conservation of coastlines & management of erosion). • Improve water quantity (reduce peak floods & storage of flood waters, support river flow during dryer months, release and recycling of groundwater). • Provide wildlife habitat (provide habitat for reptiles, birds, fish & mammals).	• Wetland areas should be demarcated before specific planning for development commences and development around these areas should be restricted. • Demarcation should be done during the wet season • Allow for adequate buffers along rivers and drainage lines and maintain setback lines. • Link smaller wetlands with open space corridors • Soft surface open space areas should be used as buffers around wetlands in development areas • *Allow land uses and developments that allows for the filtering function around wetlands* • Discretely serve as sources for resort and recreational use	
Aquifers and Groundwater: Groundwater plays a crucial role in the area from a socio-economic and ecological perspective and it therefore needs to be managed and protected in an appropriate manner by informed decisions making. There are different types of aquifers that occur within the Swartland and confirm their sensitivity: **Intergranular aquifers**: Groundwater occurs in a porous medium e.g. alluvial deposits; **Intergranular and fractured aquifers**: groundwater contained in medium to coarse grained granite, and in jointed and occasionally fractured bedrock. **Fractured aquifers**: ground water in fissured and fractured bedrock resulting from decompression and/or tectonic action The major aquifers in and around the Swartland are mapped and include: Grootwater Aquifer at Yzerfontein along the West Coast with the Elandsfontein Aquifer in Swartland's north western corner and shared with Saldanha Municipality.	Protect the sensitivity of aquifers from urban development and apply some buffer areas or sterilization areas. Protect the general ground water quality and sensitivity and regulated external impacts from agricultural uses. The different types of aquifers that occur within the Swartland region and their yield in terms of water, measured in litres per second, is depicted in the map below.	

Aquifers with high yields of around 5 litres per second. This occurs in sections of the identified Grootwater aquifer south of Yzerfontein. The groundwater within the Swartland is generally classified as ideal to poor. Ideal water quality within the Swartland occur in smaller selected areas and include areas directly to the west of the N7 between Malmesbury and the southern boundary of the Swartland municipal area, underlying the Tierfontein and Groenrivier smallholding areas, areas around Kasteelberg and Paardeberg. The groundwater quality in the northern part of the Swartland varies from good to more marginal.		
Water for Livestock Water for livestock on the farms are mainly obtained from bore holes, with some of the boreholes in the Swartland providing brackish water that is not suitable for domestic use. *Water for Irrigation* Water for irrigation in the Swartland is obtained from the Berg River, mountain streams and storage dams as well as boreholes. Berg River The Berg River that form the eastern and part of the northern boundary of the Swartland, is the only noteworthy water resource for irrigation purposes. The River has its origin in the Franschoek Mountains and is a perennial river through the dryer summer months. Water from the Berg River is awarded to a total of 42 farms along the banks of the river with a total of 1000ha under irrigation. Water also need to be pumped from the river at relatively high costs. In the Paardeberg-Riebeek production areas there are two schemes where excess water from the Berg River are pumped to various farms in this area's during the winter months. These farms have their own storage dams in which the water that is pumped from the Berg River is stored. Although the water from the Berg River contain many diluted salts during the winter months due to leaching, the quality of eh water is still adequate for irrigation purposes. During the summer months the flow	Conservation of boreholes and groundwater quality. Attempt to prevent/reduce the salts in the river systems that are a result of leaching. Prevent the release of sewerage into the river systems.	

of the river are kept at a constant level by the release of good quality water from the Wemmershoek and Voëlvlei Dams into the river system. In general the water quality of the Berg River water can be defined as good quality. The Berg River catchment area covers an area of 9000km² which is the largest catchment area in the Western Cape. Geological and topographical features divide the catchment area into three distinct areas, including the higher mountain areas around Franschoek and Paarl, the area east of Koringberg to the south of Paarl and the flat extended western area to the west of Moorreesburg and Koringberg. The largest part of the catchment area is relatively flat with an average gradient of less than 1 between Paarl and the mouth of the river at Laaiplek in the Bergrivier Municipal area. *Mountain Streams* Water from the mountain streams and smaller rivers are generally of good quality. Further away from the mountains the water tends to become more saline due to leaching of salts from the shale soils. The water from the mountain streams decreases substantially during the dryer summer months, which necessitate the creation of storage dams to increase catchment opportunities during the winter months.		

3.1.1.6 Biodiversity

Elements	Directives	Applicable Legislation
Biodiversity is the variety of and interaction between plant and animal life in a particular habitat and the interaction between plants and animals (called ecological process and biodiversity patterns). The Swartland is located within one of the richest biodiversity areas of South Africa and forms part of the Cape Floral Region and one of 34 globally identified biodiversity hotspots. The land is covered with Coastal Renosterveld (or West Coast Renosterveld), Coastal Fynbos (or Salt Plain fynbos), Mountain Fynbos, Strandveld vegetation (or Strandveld succulent Karoo Fynbos) and Dune Thicket. On the whole these natural veld areas provide a limited contribution to the gross value agricultural production in the region. The veld types do however play an important part to support the local ecosystems. Although the clearing and cultivation of fynbos areas within the lower lying areas for agricultural use have an economic value the value of fynbos within the mountain areas lie more within its aesthetic and recreational value as well as an freshwater catchment system (Kemper 1999, Jarman 1986, Maitre 1997). The mountain Fynbos provide mainly six primary ecosystem functions to the Western Cape communities which include, water production, harvest of wild flowers, hiking routes, eco-tourism, the conservation value of the endemics and the value of the genetic resources of the plant material (Higging, 1997). Fynbos have a very low biomass, which result in higher water yield. Relative to other plants fynbos reduce crusting and thereby increase	An environmental statement guides the strategies above and places more emphasis on rural areas which form an integral part of what the municipality wants to achieve within its entire area of jurisdiction: *The Swartland seeks to ensure sustainable development of its rural areas, conservation of its biological diversity to retain its environmental integrity, functionality of ecosystems and safeguarding of the rural heritage, cultural and visual aesthetics* Provide for Tourism destinations Include ecologically sensitive areas within and immediately around the urban areas in the open space networks of settlements. Delineation of urban edges has to delineate sensitive areas, using fine scale planning maps but will need ground trothing for decision making. Development applications which include area-sensitive vegetation habitats within urban areas, should be required to rezone such spaces to Open Space III and be included in Cape Nature's Stewardship programmes to ensure expansion of conservation areas. Protect the visual landscape through the protection of natural areas within urban areas adding to habitat value and aesthetical value within the urban context.	NBSAP, 2015: A people-centred approach to biodiversity, recognising that the well-being of South Africa's people is dependent on the well-being of the environment. Sustainable use of biodiversity promotes social development and economic growth. NEMA, 1998: Responsible use of non-renewable resources Ecosystems disturbance (avoid, minimize, rectify) NBSAP, 2015**:** Biodiversity contributes to sustainable development WCDM IDP, 2022 –2027: Integrated Regional Plans: Transport, Economics, Disaster, Environmental, Community, Waste & Water.

groundwater levels and soil fertility. The Fynbos plants also stabilize and anchor river banks, prevent erosion and increase water flow. (Kemper, 1999). The estimated hydrological, management and economic value of fynbos in a 4km² ecosystem can be as much as R19 to R300 million (Higgins, 1997).The increase in tourism in the Western Cape, with around 1 745 300 foreign visitors to the region during 2014, also increase the economic potential of the ecosystems.		
The following different biomes are present: Forest biome There is only one natural forest area within the Swartland that occurs in the Kasteelberg Reserve (*Waterval*). Fynbos Biome The Fynbos Biome consists of areas with natural veld as well as nature and wild flower reserves. Parker, 2006, predicted that by 2050 losses of 51% to 61% of the fynbos biome can be expected. The degradation of this biome is already visible in the existing natural populations in the Western Cape (Midgley, 2002). The CWCBR is located within the Cape Floral Region, which contains habitats and vegetation of global significance with conservation worthy status. It is also the intention of the CWCBR to ensure that privately owned areas within the West Coast region with high biodiversity value, receive conservation status and are linked to a network of other conservation areas in the area. The dominant land uses in the biosphere reserve include agriculture and natural vegetation, with natural vegetation covering the majority of the CWCBR area. In	Preservation of Biomes (natural vegetation) • Protect and manage biomes resources to ensure survival and longevity. • Protect areas identified as Endangered. • No urban development permitted in CBAs or Protected Areas Landscapes to be preserved, Spatial Planning Categories, Scenic Routes Climate change corridors to establish links with existing conservation areas	NBSAP, 2015: Mainstreaming of awareness of the value and importance of biodiversity across society. The biodiversity sector contributes to the transformation of South Africa to a more equitable society

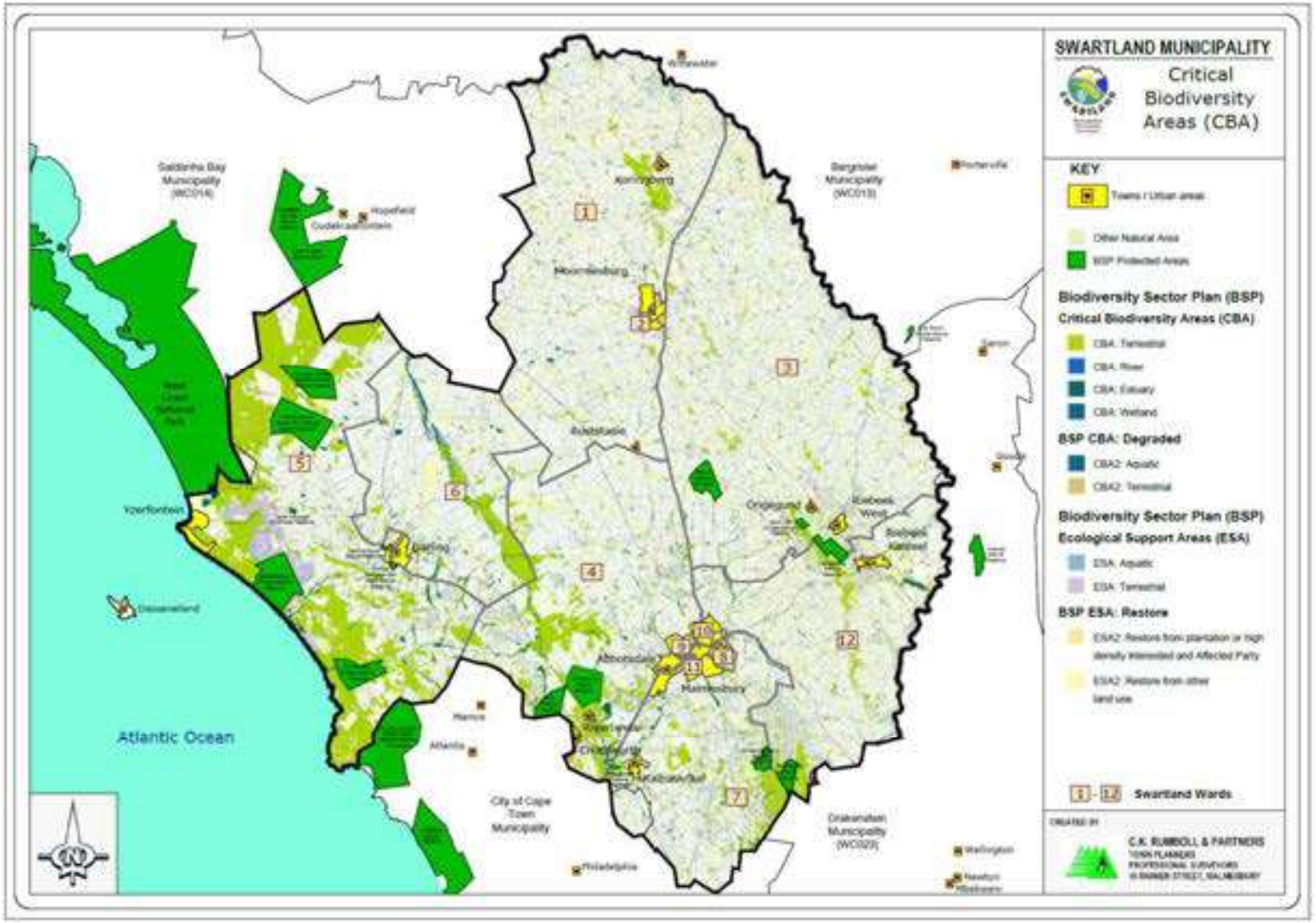
Swartland the urban areas of Yzerfontein and Darling is included in the biosphere reserve as well as a developed infrastructure network within the reserve area. It is recommended that conservation-versus-urban-development should be carefully planned to ensure that a balance is achieved and that one do not restrict the other in an unduly negative way, but to ultimately achieve sustainable development in the region		
Natural Veld Natural veld within the Swartland region is mainly fynbos veld that occurs in the mountain areas of Darling, Riebeek and Paardeberg. These areas have been conserved due to its' location in rough impassable terrain with low grazing capacity that does not make it practical to be used for agricultural purposes. According to Adcocks (1975) there are four (4) veld types that occur within the natural areas of the sub region, namely: ***Type 34****: Strandveld in the coastal areas occur within the lime rich sandy soils along the coast line of the West Coast from Elands Bay in the north to Bloubergstrand in the south. The veld type contains short shrubs of 1 meter high consisting of fynbos shrubs, grasses and succulents. Of shrubs such as taaibosse, kersbosse, melkbosse, kniedoring and katdoring occur on the small hills within the area (Adcocks, 1975).* ***Type 47****: The Coastal fynbos veld borders the strandveld and is mainly uses for natural grazing. This veld mainly occurs on the acid sandy soils and consists of shrubs, grasses, fynbos species that include a large component of reeds.(Adcocks, 1975)* Both of the above veld types have been extensively fragmented by clearing for cultivation, with very few	Natural vegetation to be preserved in addition or in support of conservation	

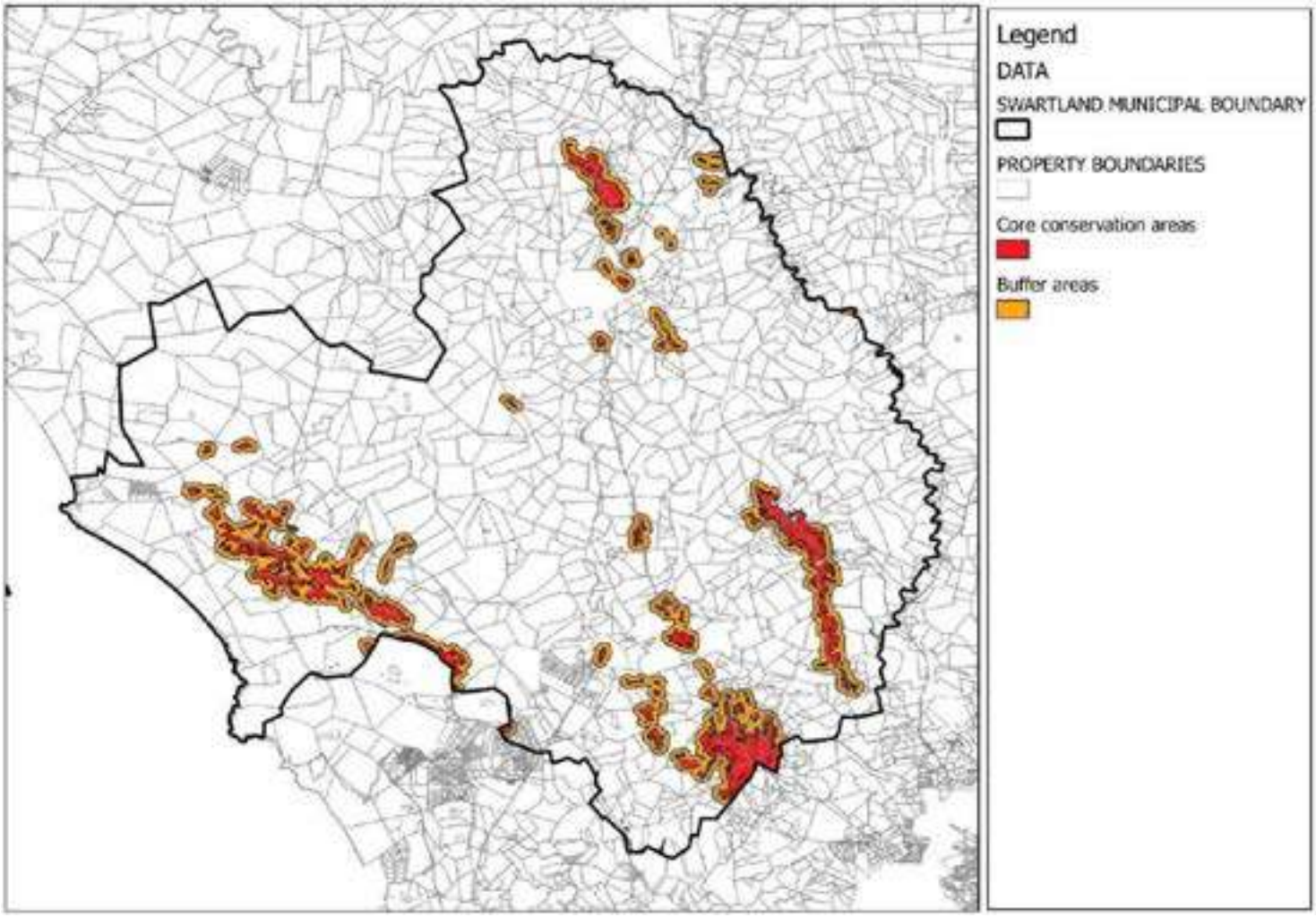
properties that only have natural veld cover. In addition large areas of these veld types have been invaded by *Acacia salinga* (Port Jackson) and *Acacia cyclops* (Rooikrans) which have further degraded the veld types and reduced the grazing capacity. ***Type 46****: The Renosterveld of the coastal area mainly occur in the heavier soils of the Swartland. It is also this sub region that are the most extensively cultivated, with only small pockets of natural veld that occur on untilled hill and mountain areas. It is estimated that only 30 300ha of this veld type still remain. The grazing capacity and palatability of this veld type is very low with the smaller pockets that remain that are not used for extensive grazing. (Adcocks, 1975).* ***Type 69****: Fynbos – The 50 400ha of fynbos mainly occur in the mountain areas and consist of fynbos vegetation typed such as Protea species, Ericaceae, Restionaceae, Lilaceae, Gamineae and a large variety of other fynbos vegetation types. The agricultural capacity of this veld type is very low and due to the high value of this vegetation types it is also not recommended that these areas be used for grazing. (Adcocks, 1975).*		
Swartland Municipality lacks a comprehensive system of critical biodiversity area (CBA) corridors of which a large extent is formally or informally conserved. Connecting ecological corridors and maintaining ecological buffers will mitigate the impact of climate change. Such corridors will support sustainability of natural resources and • Preserve the topographical and natural landscapes; • Preserve the geology and soil;	Provide for the enhancement of ecological processes and biodiversity patterns Demarcated Natural and Agricultural Areas to be preserved: conserve and prevent degradation of natural habitat, classified as Critical Biodiversity Areas (CBA). Promote development that satisfies the needs of the current generation without jeopardising the ability of future generation to provide for their needs.	NBSAP, 2015**:** Biodiversity contributes to sustainable development WCDM IDP, 2022 – 2027: Integrated Regional Plans: Transport, Economics, Disaster, Environmental, Community, Waste & Water.

• Support and strengthen the biodiversity and conservation status of areas; • Support and strengthen the conservation status of Red Data species and local native species; • Preserve fresh water resources; • Preserve groundwater quality; • Preserve the Marine and Coastal environments; • Guard the joint capacity of the biophysical environment and prohibit over utilization. Biodiversity in Swartland includes Fynbos and renosterveld that has a high level of endemism and of fragmentation	Increasing pressure of development requires Landscape level conservation areas to facilitated changes to ranges and species composition due to climate change. Prevent increased fire risk due to increased presence of invasive species and follow fire regulation requirements.	
Fauna and Marine Life: Swartland region is home to a diverse Fauna and marine life: Chacma Baboon troops (*Papio ursinue*) live on Kasteel and Porseleinberg, and although baboons are found across South Africa the sub specie*P ursinus ursinue*, which is a large dark brown baboon with black paws are found only in the Cape region. The Cape Porcupine (*Hystix Africaeaustalis*) also occurs in these areas. They are nocturnal animals that live off fruit, roots, and bulbs and leaves and can live for 15 to 20 years. One of the most poisonous snakes in Africa the Cape Cobra (*Naja nivea*) occur in this region. They feed of rodents, small animals and other snakes and can grow up to 110cm long. Cape Grey Buck (*Raphicerus melanotis*) is a small antelope feeding off fynbos and is endemic to the Western Cape. The coastline along Yzerfontein and Dassen Island provide an unique environment for various marine based	Delineate and Protect of 'space to move to' (refugia) gaining increased importance to protect biota and fauna. Integrate social, economic and environmental factors through planning, implementation and decision making. • Support responsible stewardship of natural resources and the natural environment, including mitigation of environmental damage. • Minimise waste and environmental damage in the food production chain. • Exercise cautious where impacts are unknown and uncertain. • Act within ecological constraints and preserve critical natural capital that provides for continuous income from ecosystem advantages such as biological diversity, mineral resources and clean air and water.	

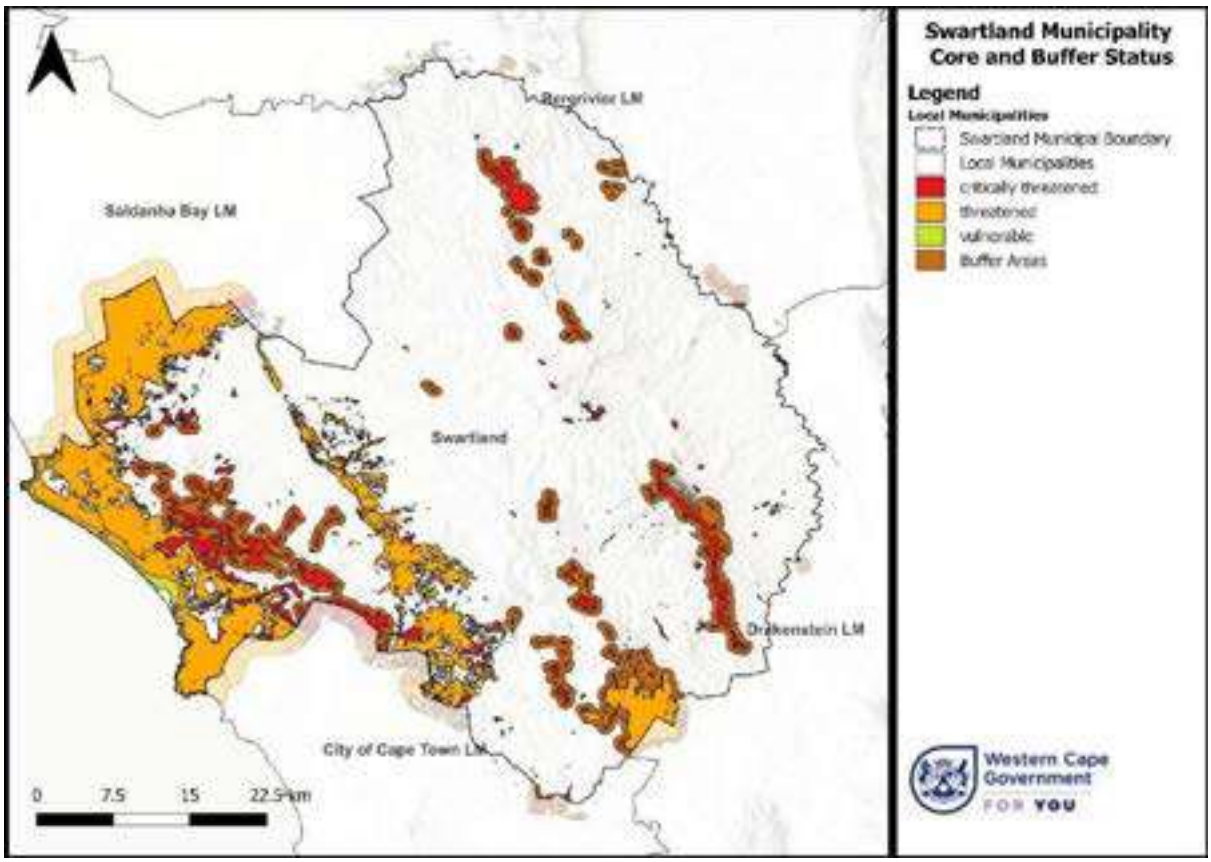
animals: Well known as a habitat for dolphins, Southern Right and Humpback Whales. *Dassen Island,* proclaimed as nature reserve in 1987 for seabirds, *is an uninhabited South African island in the Atlantic Ocean, situated about 10 km (6 mi) west of Yzerfontein. The island, as South Africa's second largest coastal island, has as area of 220ha with a length of 3.2 kilometres and a width of 1.6 kilometres wide.* Dassen Island is home to the largest (68 000) African Penguin colony, in the world, endemic to the African continent. White Pelicans also breed on Dassen Island. Both birds that are vulnerable and included on the Red Data list. The dwarf tunnel lizard, a reptile species found on Dassen Island are on the Red Data List too.		
Protected areas and threatened ecosystems include: Paardeberg, Riebeek and Porseleinberge, Areas aroud and between Darling and Riverlands, West of the R27, Malmesbury. Ecological support areas are not delineated spatially other than the Spatial Planning Categories map.	Identify and delineate ecological support areas Alien invasive species requiring monitoring and control: develop a maintenance programme	

Map 27: Critical Biodiversity Areas Plan for Swartland




Legend
DATA
SWARTLAND MUNICIPAL BOUNDARY
PROPERTY BOUNDARIES
Core conservation areas
Buffer areas

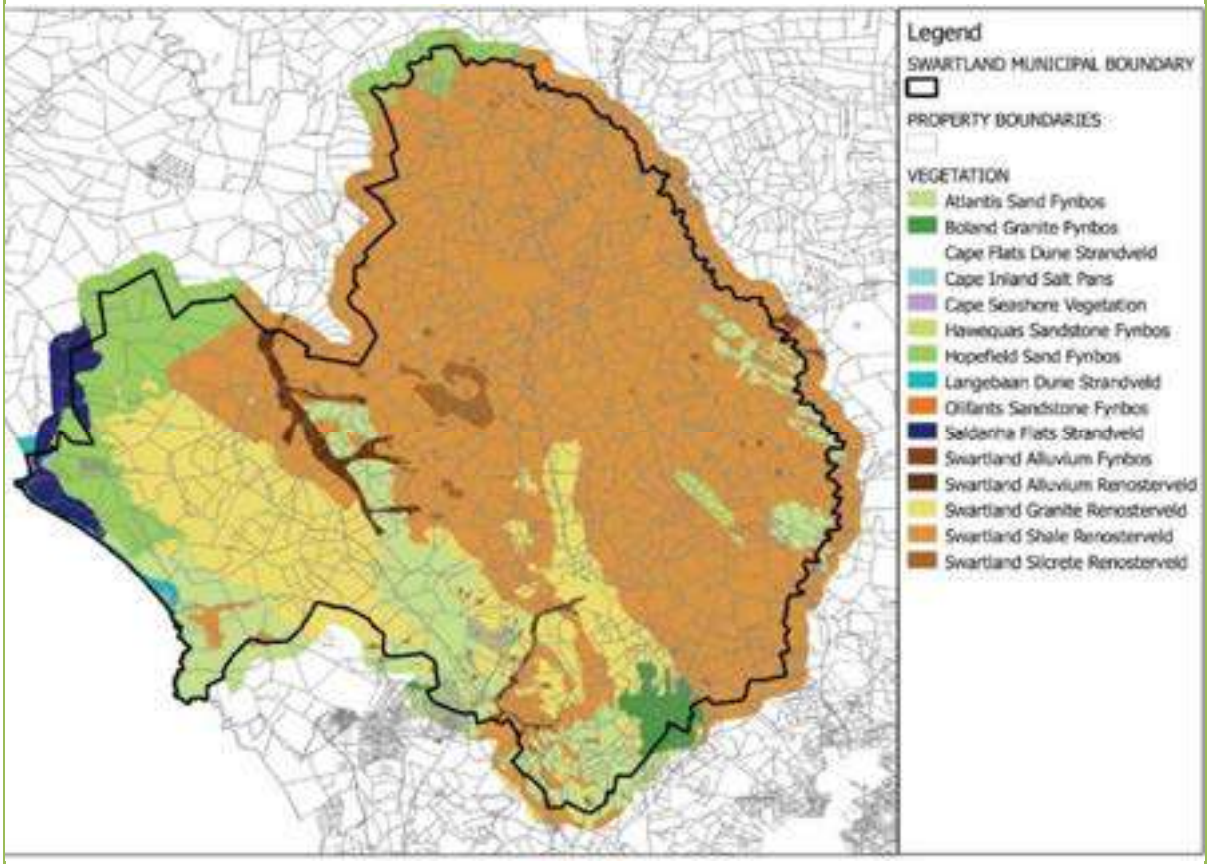
Map 9: Core areas and proposed Buffer areas identified as part of the Status Quo report



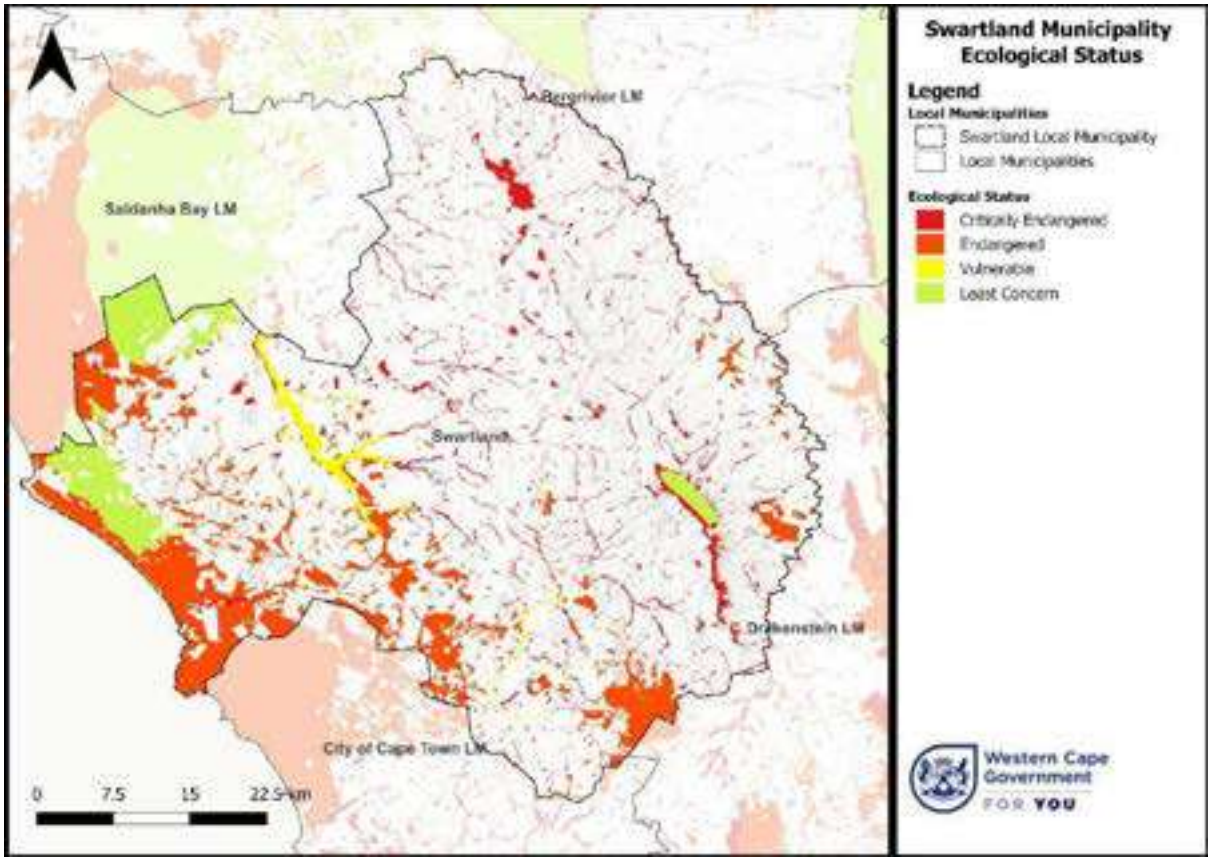
Twelve (12) of the 14 threatened vegetation types, listed below, is found in the Swartland:

Status	Ecosystems according to vegetation types	Original habitat in hectare (ha)	Remaining habitat in hectare (ha)	% remaining
Critically threatened:	Swartland granite renosterveld	61 729	8 037	13%
	Swartland shale renosterveld	221 562	4 702	2%
	Swartland silcrete renosterveld	5 571	69	1%
	Swartland alluvial fynbos	19	0	0%
Threatened:	Atlantis sand fynbos	41 366	17 724	42%
	Cape flats dune strandveld	17	16	94%
	Hopefield sand fynbos	22 301	16 200	72%
	Saldanha flats strandveld	3 779	2 855	75%
	Swartland alluvial renosterveld	5 601	1 404	25%
	Boland granite fynbos	3 863	3 141	81%
	Cape inland salt pans	309	54	17%
Vulnerable:	Langebaan dune strandveld	1 729	1 358	78%

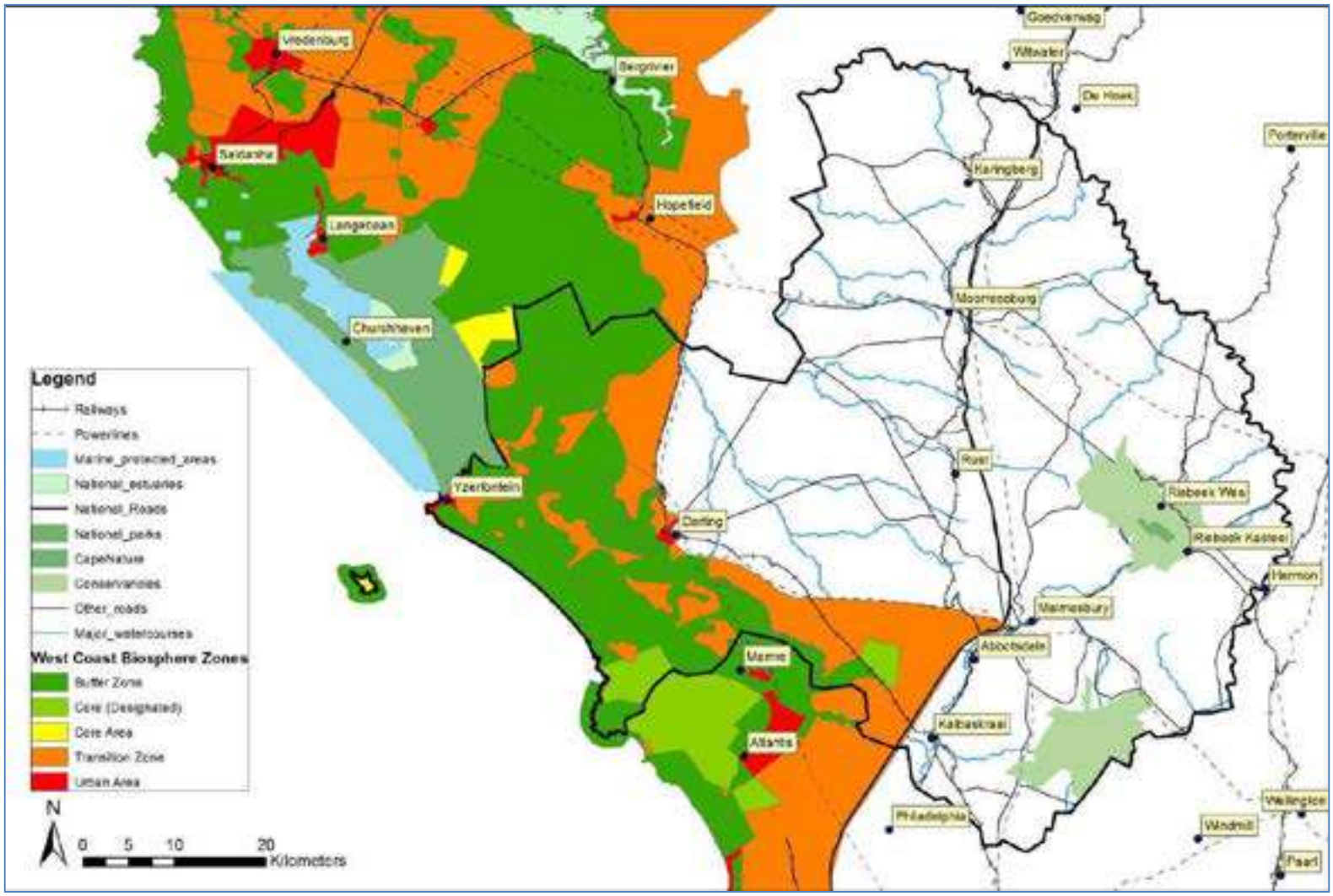
Map 28: General location of threatened vegetation types in Swartland



Map 29: Ecological Status of the Natural Vegetation in the Swartland



Map 12: Swartland municipal area vs West Coast Biosphere Reserve



3.1.1.7 Vegetation

Elements	Directives	Applicable Legislation
Formal and Informal Conservation areas include: **Formal:** Riverlands, Kasteelberg, Paardeberg Reserve, Pella Nature Reserve. The adjoining West Coast National Park in Saldanha Municipal area on the north western periphery that impact on West Coast Biosphere Reserve. Dassen Island Nature Reserve **Informal:** *Jakkalsfontein, Tygerfontein, Rondeberg, Grotto Bay, Hans Gift and Riebeeks River.*	• Spatially identify formal and informal conservation areas. • Development to be environmentally sensitive • Development that supports natural resources.	
Nature and Wild Flower Reserves The Nature reserves within the municipal areas are divided into 2 categories: • Formal Conservation areas (long term legally bound); • Conservation areas and Private Nature Reserves. The Swartland region is characterised by a variety of unique natural and cultural elements that must be protected in order to ensure continued conservation of these areas. The existing conservation areas are located throughout the region from the coastline in the west to the Berg River in the east. ***Formal Nature Reserves*** The formal conservation areas include National Parks, Provincial Nature Reserves and Municipal Nature Reserves. The formal nature reserves in Swartland include: • Riverlands Provincial Nature Reserve; • Pella Provincial Nature Reserve; • Kasteelberg Provincial Nature Reserve;	Minimise the impacts of urban development in Fynbos by clustering houses within a fire-free zone and create an appropriate fire belt. Firebreaks must be cleared within the development footprint, not in adjacent veld. For all types of development, footprints should be minimised and on selecting alternatives that maximise the retention of indigenous habitats, species and ecological processes. When development is proposed within natural to near natural habitats, the full mitigation hierarchy as per the EIA process needs to be demonstrated and implemented before biodiversity offsets are considered. Development in close proximity or within endangered vegetation types must be avoided and discouraged, Search and rescue should be considered for all development, especially when development may result in the irreversible loss of rare or threatened plant populations. Provide for preservation of transition areas of one veld type to another.	NEM: BA, 2004: Integrate biodiversity conservation with land use planning & development: CBAs included & reflected in SDF and IDP documents PBSAP, 2015 - 2025: progressively contribute to attainment of biodiversity conservation, economic and development vision of Western Cape WCBSP, 2017: Most recent and best quality spatial biodiversity information inform land use and development planning, environmental assessments & authorisations, natural resource management and other multi-sectoral planning processes. NEM: PAA, 2003: Protect ecologically areas representing biodiversity, natural landscapes & coastline.

• Paardeberg Municipal Nature Reserve (are management in cooperation with Drakenstein Municipality) • Yzerfontein Municipal Nature Reserve; • Groenekloof Municipal Nature Reserve; • Darling Renosterveld Municipal Nature Reserve; • Kalbaskraal Municipal Nature Reserve; • Tienie Versveld Nature Reserve (wild flower reserve managed by SANBI). ***Private Nature Reserves*** The following Private Nature and Wild Flower reserves were established to ensure the continued conservation of various natural areas within the Swartland: • Oude Post Wild Flower Reserve, Darling; • Waylands Wild Flower Reserve, Darling; • Bartholomeus Klip, Private Nature Reserve, Riebeek Valley/Hermon; • Kalbaskraal Nature Reserve; • Riebfor Forest Reserve on Kasteelberg. Many of these areas are located on private land and are under a stewardship program of Cape Nature, where private owners take responsibility for the sustainable, use, management and conservation of these areas. West Coast Biosphere Reserve The western side of the Swartland Municipal area form part of the Cape West Coast Biosphere Reserve. The Cape West Coast Biosphere Reserve (CWCBR) is an initiative by Cape Nature to facilitate sustainable development along the West Coast through stewardship agreements with private land owners. The CWCBR stretches from Diep River in the Cape Metropolitan Area in the south northwards along the coastline and coastal	Uniqueness calls for establishment of eco-tourism destinations. Spatially guide agricultural activities not to negatively impact on Critical biodiversity, transitional and degraded Areas. To preserve Critically Endangered and Endangered vegetation types: create buffers, should be clearly delineated and where not delineated, considered in spatial planning, land use decision making and environmental management. develop strategies and management guidelines to protect Critical Biodiversity Areas which receive no formal protection. River and its tributaries, long term maintenance of water quality and quantity and measures to protect this riparian vegetation are required. Create climate change corridors to establish links with and between existing conservation areas Delineate SPCs: Landscapes & Scenic Routes to be preserved, including floristic regions (natural vegetation): Encourage appropriate management of Critical biodiversity Areas as a high priority.	PBSAP, 2015 - 2025: - promotion of existing and new biodiversity; - mainstreaming and conservation initiatives; - enabling of an inclusive and sustainable biodiversity-based economy; and active participation of citizens, NEM: BA, 2004: Monitoring, Control & Eradication Plans, 2015 An "Invasive Species Monitoring, Control and Eradication Plan for land under Cape Nature's control (Control Plans)," PBSAP, 2015 - 2025 By 2025 management, consolidation and expansion of all the categories of the Western Cape Province's network of conservation areas

plains towards the Bergrivier north of Saldanha and Vredenburg (refer Map 13).		
Swartland is one of the municipal areas that have the most critically endangered ecosystems, with four (4) of the 21 national endangered ecosystems that occur within the area. The dominant natural vegetation types within the Swartland region are *Renosterveld* in the eastern part with *Fynbos* in the western part along the coastline. The area to the west of Darling contains the largest natural areas within the Swartland Endangered vegetation types include: **Critically threatened** Swartland granite renosterveld Swartland shale renosterveld Swartland silcrete renosterveld Swartland alluvial fynbos **Threatened** Atlantis sand fynbos Cape flats dune strandveld Hopefield sand fynbos Saldanha flats strandveld Swartland alluvial renosterveld Boland granite fynbos Cape inland salt pans **Vulnerable:** Langebaan dune strandveld	Provide for preservation of transition areas of one veld type to another. Uniqueness calls for establishment of eco-tourism destinations. Spatially guide agricultural activities not to negatively impact on Critical biodiversity, transitional and degraded Areas. -To preserve Critically Endangered and Endangered vegetation types: - Create buffers, should be clearly delineated and where not delineated, considered in spatial planning, land use decision making and environmental management. - Develop strategies and management guidelines to protect Critical Biodiversity Areas which receive no formal protection. -And is generally found in the valleys of the Breede River and its tributaries, long term maintenance of water quality and quantity and measures to protect this riparian vegetation are required. -Create climate change corridors to establish links with and between existing conservation areas -Delineate SPCs: Landscapes & Scenic Routes to be preserved, including floristic regions (natural vegetation) -Encourage appropriate management of Critical biodiversity Areas as a high priority. Minimise the impacts of urban development in Fynbos by clustering houses within a fire-free zone and create an appropriate fire belt. Firebreaks must be cleared within the development footprint, not in adjacent veld. For all types of development, footprints should be minimised and on selecting alternatives that maximise	NEM: PAA, 2003: Protect ecologically areas representing biodiversity, natural landscapes & coastline. PBSAP, 2015 - 2025: - promotion of existing and new biodiversity; - mainstreaming and conservation initiatives; - enabling of an inclusive and sustainable biodiversity-based economy; and active participation of citizens, NEM; BA, 2004: Monitoring, Control & Eradication Plans, 2015 An "Invasive Species Monitoring, Control and Eradication Plan for land under Cape Nature's control (Control Plans)," PBSAP, 2015 - 2025 By 2025 management, consolidation and expansion of all the categories of the Western Cape Province's network of conservation areas NEM: BA, 2004: integrate biodiversity conservation with land use planning & development: CBAs included & reflected in SDF and IDP documents PBSAP, 2016 - 2025: progressively contribute to attainment of biodiversity conservation, economic and development vision of Western Cape WCBSP, 2017: Most recent and best quality spatial biodiversity information inform land use and

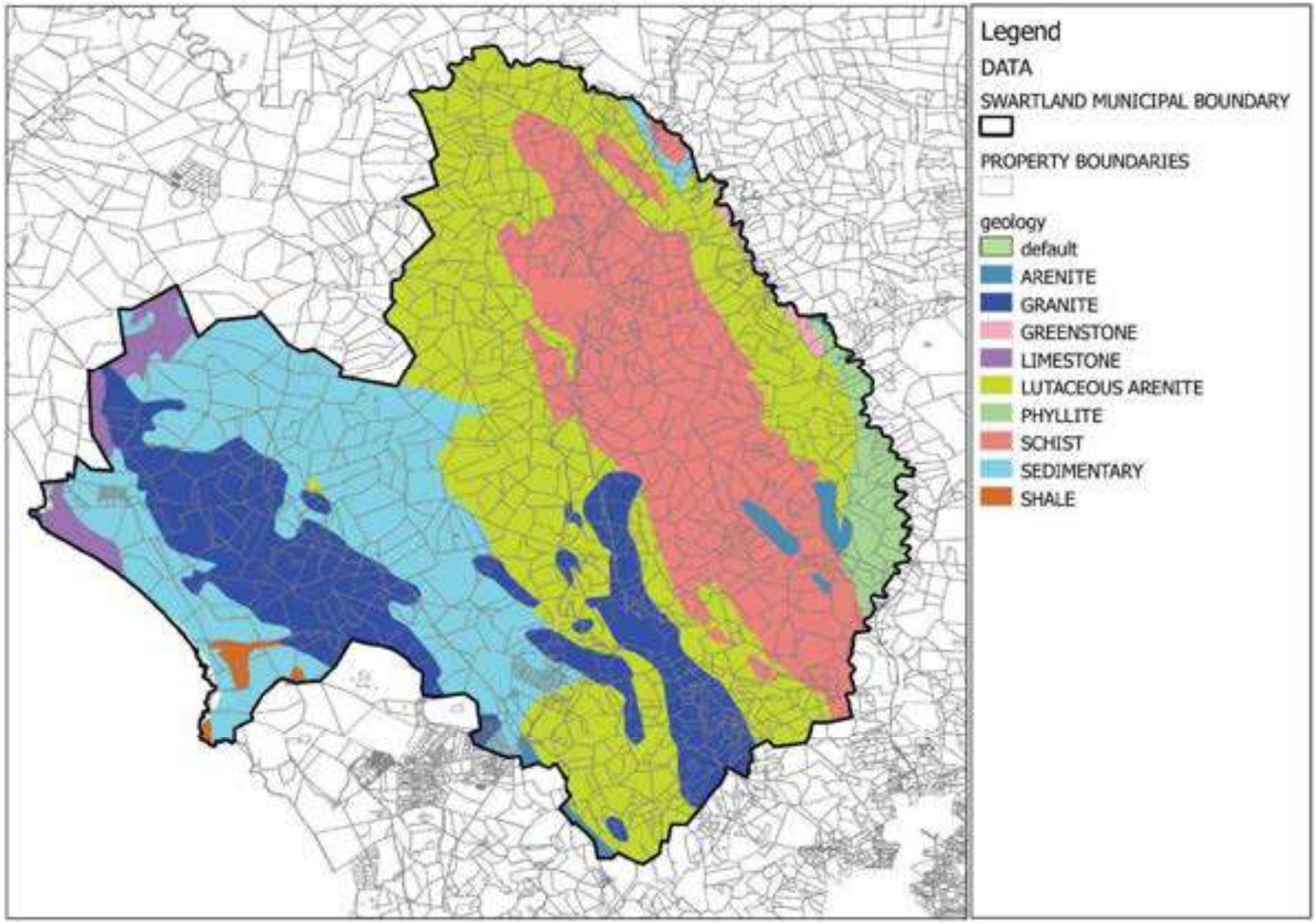
	the retention of indigenous habitats, species and ecological processes. When development is proposed within natural to near natural habitats, the full mitigation hierarchy as per the EIA process needs to be demonstrated and implemented before biodiversity offsets are considered. Development in close proximity or within endangered vegetation types must be avoided and discouraged, Search and rescue should be considered for all development, especially when development may result in the irreversible loss of rare or threatened plant populations. The Swartland region is characterised by a variety of unique natural and cultural elements that must be protected in order to ensure continued conservation of these areas. The existing conservation areas are located throughout the region from the coastline in the west to the Berg River in the east.	development planning, environmental assessments & authorisations, natural resource management and other multi-sectoral planning processes
The Swartland is not a fire prone area and the impact on human settlement and and other land uses is limited. However agriculture on the other hand cause fires (wheat fields that burn) and pose a challenge to natural vegetation.	Delineate fire prone zones or areas.	

3.1.1.8 Mining

Elements	Directives	Applicable Legislation
Active Mines (Status & Commodities): There are twenty one (21) mines in the Swartland. The geological structure of the Swartland region does not contain any minerals or metals of high value that can be mined economically. Mining in the Swartland area is limited to - Lime, building sand, building clay, gypsum, salt, granite, kaolin and phosphate. The economic potential of mines within the Swartland is mainly for the mining of building sand and clay, with mining to be sensitive to the environment and agricultural production. The following table describe the existing mines that are found in the Swartland municipal area.	Critically Endangered and Endangered vegetation types and archaeological resources to be preserved and buffered. Provide for mine rehabilitation and restoration of vegetation including properly stockpiled topsoil and that the post mining platforms comply with envisaged post mining land use. Preservation of floristic regions (natural vegetation, flora and biodiversity) Where are mining allowed, Landscapes to be preserved, Spatial Planning Categories, Scenic Routes	MPRDA, 2002 Sustainable development of mineral and petroleum resources. Secure mining, prospecting, and exploration mining & production operations tenure. Secure mining, prospecting, and exploration mining & production operations tenure.
Sand Deposits in Swartland Region and South Western Cape as confirmed by geologist Stephen Davey, are as follows: • Aeolian Sand – This is wind-blown dune sand is not commercially mined in the Swartland area. Dune sand mined in area of Philippi, Macassar and south of Atlantis and is suitable for plaster and mortar sand despite it not being coarse enough and does not comply with the specifications for concrete sand. Aeolian sand that can be used as building sand occurs on the western side of the Berg River between Hermon and Saron. • Fluvial Sand – Fluvial sand is sand that has been washed down rivers and deposited on river banks or flood plains. Fluvial sand is present on the flood plains of much of the Berg River and its tributaries between Kylemore and Saron and in the proximal portions of the Diep, Modder and Groen Rivers. The fluvial deposits have only been mined on a small-scale for building sand.	Preservation of floristic regions (natural vegetation, flora and biodiversity Where are mining allowed, Landscapes to be preserved, Spatial Planning Categories, Scenic Routes Ensure that mines are rehabilitated topsoil is properly stockpiled and that the post mining platforms comply with the envisaged post mining use of the land. Protect Paardeberg unique natural resources as economic driver enabling world famous viticulture. Paardeberg Conservation area and the Simons-Simons Private Nature Reserve are part of Paardeberg's unique natural resources which is	WCBA, 2021: To provide for the framework and institutions for nature conservation and the protection, management and sustainable use of biodiversity and ecosystems in the Province; and for matters incidental thereto;

• Hill wash and Colluvial Sand – Hill wash and colluvial sand has been moved downslope under the influence of gravity and by surface wash. These processes occur during major storms which cause saturation of the soil followed by surface runoff. The most important sand deposits in the Swartland Municipal area are this type. Hence: *Yzerfontein – Darling – Mamreweg* region contains several isolated building sand deposits which are concentrated south-southeast of Darling, northwest of Darling and along the Groenrivier and Soutrivier, northeast of Darling. Aeolian, fluvial and hill wash sands are present. It is mainly the hill wash sand that has been mined on a small scale in the Darling area. These deposits are located on the lower slopes or at the base of granite hills of the Darling pluton. The sand is used for mortar, plaster and concrete. *Malmesbury – Klipheuwel* area has been mined since 1980 and produces the best quality concrete sand in the Western Cape. It is often referred to in the construction industry as "Malmesbury Sand". The sand mostly comprises discontinuous tabular deposits that occur west and southwest of the Paardeberg granite pluton. The hill wash sand deposits range in thickness from 0.2m to 3.0m and have been derived from granite. The hill wash sand normally overlies ferricrete, residual clay of the Malmesbury Group or weathered granite.	home to various unique wineries and tourism activities. Avoid land uses that negatively impact on the existing aesthetic value, tourism, boutique wine industry and intensive agricultural land uses. An overlay zone should be developed for Paardeberg area, in conjunction with Drakenstein Municipality and the City of Cape Town as the Paardeberg is located within all three municipalities. It would be useful to provide further guidance with respect to where mining will not be allowed, based on a proper investigation of likely impact in surrounding land uses. This is an area identified in the GCM RSIF as a rural hotspot and the municipality would do well to act proactively in respect of providing additional strategic guidance to ensure that aforementioned incompatibilities between agriculture and sand mining could be anticipated and clarified.	
Mining industry represents less than 1 % of the WC's Gross Domestic Product per Region (GDPR). The geological structure of the Swartland region does not contain any minerals or metals of high value that can be mined economically. The main commodities that are mined in the Swartland region are Granite, Limestone, Sand, Gypsum and Salt. The economic value of mining building sand and clay has to be weighed up against the economic value of the sensitive environment and value of agricultural production. Swartland's close proximity to the Metropole contributes to the demand for building sand as the Construction Industry, is the fastest growing economic sector in the Western Cape.	Critically Endangered and Endangered vegetation types to be preserved and buffered. Provide for mines rehabilitation and vegetation restoration. Sand quality should be a determining consideration when weighing up confliction economic activities derived from the same resources	NEMA, 1998: Provide a framework for all developments having an environmental impact: Mining, infrastructure, planning or business conforms to regulations.
Brick quarries are no longer in operation and reserves have been most likely depleted or are not of the required quality.		

Map 30: Geological distribution in Swartland



Map 31: Mine types within the Swartland

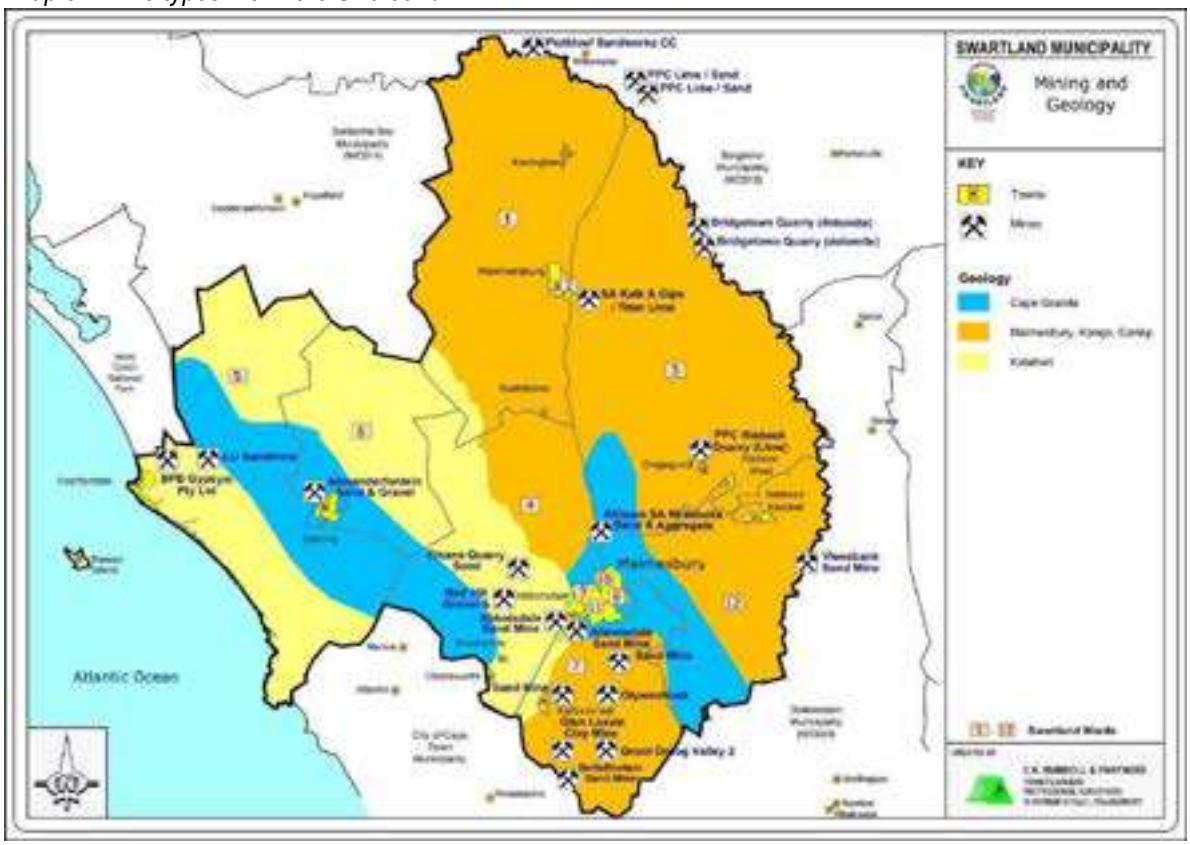
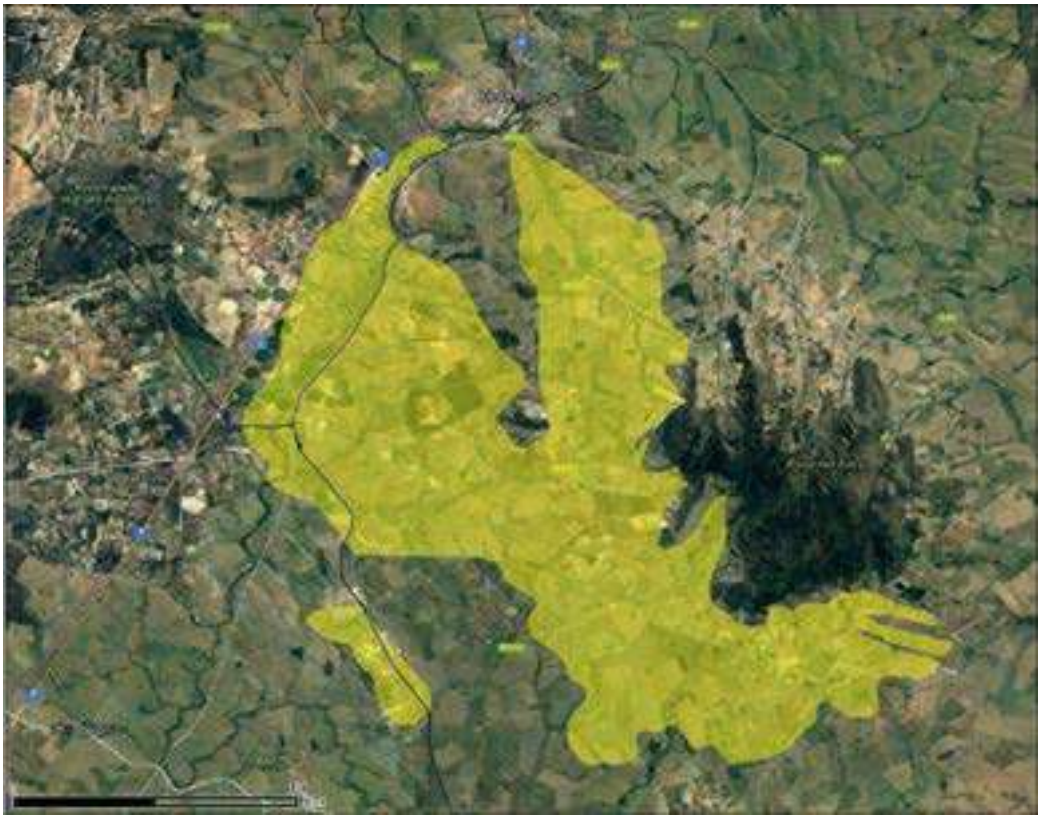


Figure 26: Malmesbury – Klipheuwel building sand deposits

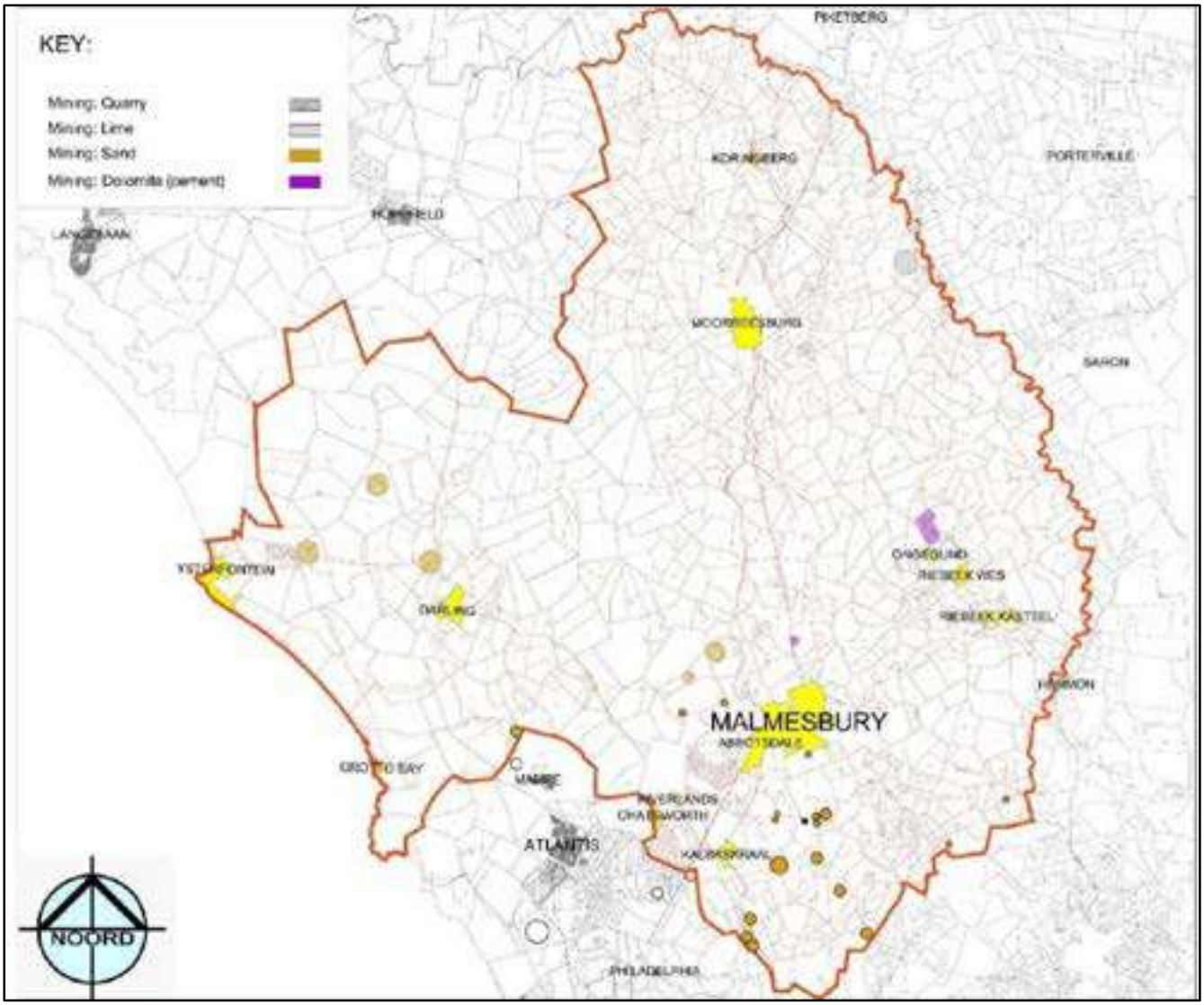


(Source: Spatial data obtained from the Council for Geoscience)

Table 19: Description of the Mines in the Swartland

Product & mine type	Name of Mine	Use	Property description
Open Granite	Rheeboksfontein north of Malmesbury	Crushed rocks for building industry	Portion 1 of Rheeboksfontein 689
	Elsana Granite mine	Crushed rocks for building industry & road construction	Langkloof No 701
		Temporary mines for road construction materials.	
Sandstone	Existing Old obsolete mine at Kloovenburg	For road construction	
Open Limestone mine	Pretoria Portland Cement	Production of Cement	Farm Ongegund No 508
Lime			Mined at Bridgetown and Moorreesburg.
Clay		Production of bricks	Only one brick works at Kalbaskraal.
	Apollo Bricks	Production of bricks	Farm Modderfontein No 27
	Rivetprops	Production of bricks	Portion 26 of Farm Zouterivier No 22
Gypsum		Calcium sulphate seeps from surroundings to vlei.	Vlei directly north of Yzerfontein
Sand		Hinterland sands, having an ideal particle size for making concrete	Coarse sands derived from granite found around Paardeberg.
	Afri Sam	Building sands	
	Mamre Holcim Mine	Building sands	Groenekloof No 971
	Burgherspan Sand mine (Sibathatu Mines)	Building sands	Droogte Valley Farm 456
	JJJ Sand Mine (Sibathatu Mines)	Building sands	Portion 3 of Slangkop No 552
	Morgenwacht Sand	Building sands	Morgenwacht No 883 Portion 1
	Munniksdam Alydycko Trust	Building sands	Munniksdam No 908
	Rosenburg - Van der Westhuizen	Building sands	Rosenburg, Malmesbury
	Vlok trans	Building sands	Klipheuwel road
Unclassified	Afrimat – Bloemendalsfontein		Andre van Reenen, Darling
	Brocsands – Bloemendalsfontein		Blankenberg, Darling
	Alexanderfontein		Alexanderfontein, Darling
	Small Mine		Kersfontein, Malmesbury
	Small Mine		Basson, Doringkloof
	Tiptrans		MC Smit, Doringfontein
	Afrimat		Droogevallei 913

Map 32: Locality of mines within the Swartland



3.1.1.9 Agriculture

Elements	Directives	Applicable Legislation
Arable Land:	• Provide for the conservation of agricultural resources • Support the diversification in agricultural sector	
Approximately 85% of the Swartland area represents arable land. Soils suitable for wheat production are mostly located north-east of Malmesbury and for viticulture immediately north of Malmesbury. The majority of the municipal area is suitable for grazing.	Support both intensive (vineyards, orchards and pastures) and extensive agricultural cultivation. Provide for preservation of agricultural areas Agricultural irrigated cultivation (Intensive) is dependent on the availability of irrigation water and suitable land.	NFA, 1998 Formally demarcate, protect, manage forests, establish community forests, and manage deforested areas.
Agricultural cultivation is mostly intensive, comprising vineyards, orchards and pastures. Together with the magnificent scenery, these resources and agricultural activities, especially wine-making form the basis of its tourism industry.	Agricultural activities (wine-making) and agricultural cultivation form the basis of the tourism industry. Enhance agriculture to enhance tourism routes and destinations and economic activities.	
Sandveld (Area 14), Veld grazing areas and marginal cropping areas. Koringberg Rooikaroo (Area 15), Dryland cropping areas Middle Swartland Piketberg and Porterville (Area 16), Cropping areas with Hills Koeberg, Kortreiberg, Malmesbury and Voorberg (Area 17, High rainfall areas Durbanville, Mamreweg, Paardeberg and Riebeek (Area 18), Mixed farming areas	Crop type and related agri-industry contribution to economy and GVA Project the changes of cultivation and cultivation practices based on threatened resources and its impact on job creation. Agricultural activities (wine-making) and agricultural cultivation form the basis for vibrant tourism industry Enhance conservation agriculture as basis for tourism and tourism destinations.	WCDM IDP, 2022 – 2027: Develop Agri-parks, agri-clusters, and eco-villages. Assist land conservation and preservation. SUAL, Draft law: This act will replace Act 70 of 1970 and Act 43 of 1998 to ensure food security and land reform.
Climate change: Agriculture and food security: Is a high employment generator, yet there is a slow decline in the sector's contribution to the economy. Climate change will add to the decline of the sector within the Swartland. The	Make provision for the research finding on climatic changes and the impact thereof given the contribution of agricultural cultivation to the economy of the Swartland.	SmartAgri, 2016 Sets out to: • Provide a time-specific strategic roadmap to a climate-resilient agricultural sector

diversification based on microclimate and soils will become less diversified whilst seasonality will shift..	Provide protection for microclimates. Protect water sources and resources Agricultural landscape changes as crop will change and crop selection changes will bin suitable ranges. Protect productivity of agricultural soils. . Provide for shifts in seasonality. Adapt for changes to disease and pest outbreaks	• Provide spatially explicit, commodity-specific and scale-sensitive implementation pathways that are practical and effective for specific climate risks • Promote opportunities for the sector through climate change adaptation and mitigation • Inspire farmers and agri-business to optimise decision-making for a resilient and sustainable future in the face of complex and uncertain changes • Strengthen the enabling environment for autonomous (farmer-led) and planned (government-led) responses • Facilitate a more integrated, co-ordinated and co-operative response through strong multi-stakeholder partnerships, networks, and knowledge sharing • Mobilize and direct new investments in agriculture in support of adaptation and mitigation
Both Agri-processing and Agriculture are significant economic contributors and employment sectors. The Agriculture, Foresting & Fishing (AFF) sector contributes 12.5% to Swartland GVA production along with 28.7% to employment (CSIR, 2019)). The contributions of agriculture are slowly decreasing as is the number of commercial faming entities. In 2019 small scale farming or subsistence farming has declined since 2015 as an important part of livelihoods in both rural and urban areas	Crop type contribution to economy and GVA Landscapes to be preserved, Scenic Routes Intensified cultivation impacts soil suitability, yet market demand will balance these impacts. Supplement commercial food production (food demand and exports) with small scale farming to encourage self-sufficiency. Anticipate the high labour cost as a major contributing factor to high production costs, and the social cost there off: Mechanization and	SALA, 1970: Ensure agricultural land is not fragmented and is maintained as viable economic entities.

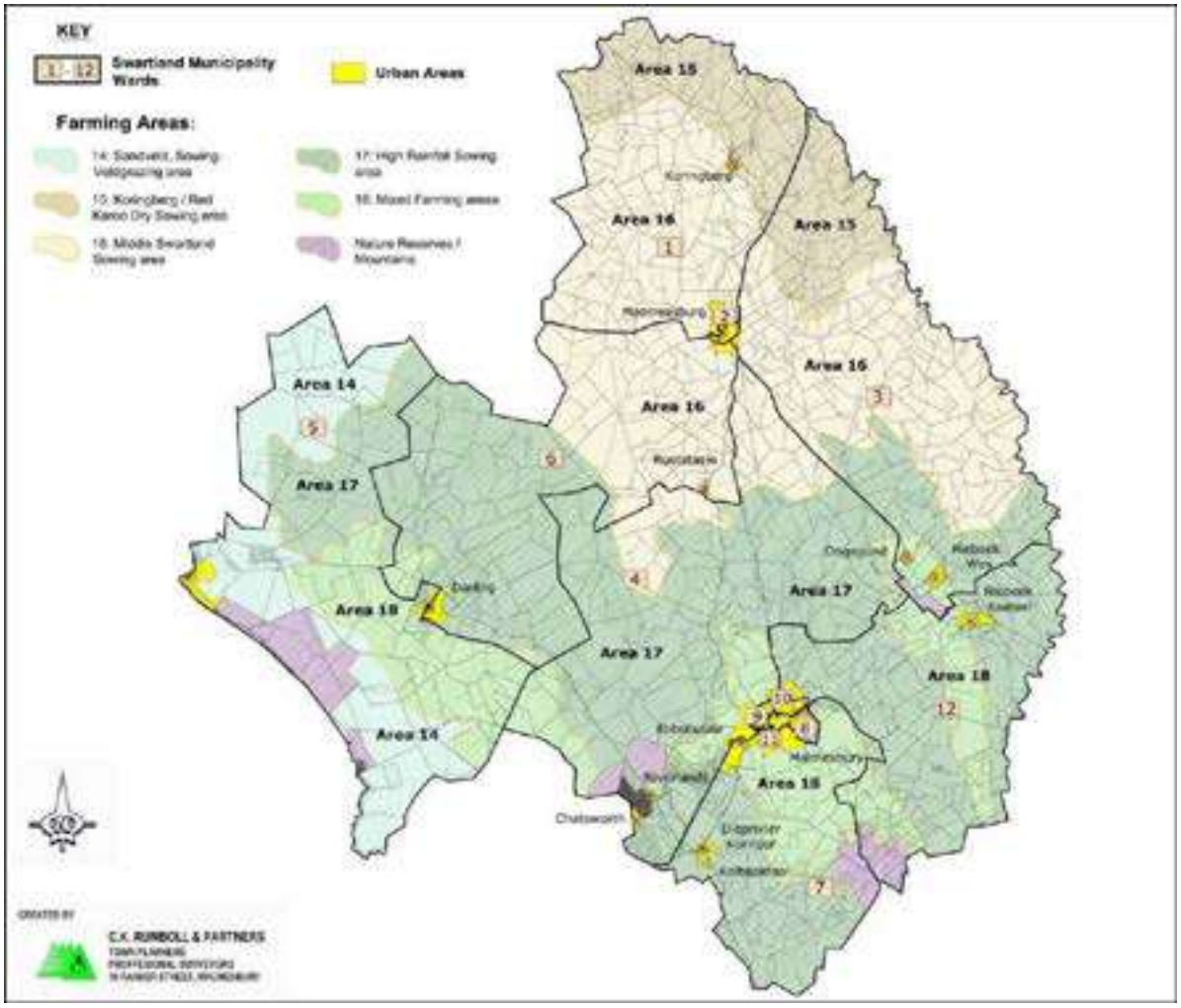
due to the draught and water restrictions. More than half of agricultural households exclusively grew crops.	fewer low and semi-skilled workers get employed.	
Sandveld (Area 14), Veld grazing areas and marginal cropping areas North westerly winds during May and June result in damage to newly sowed crops in areas where wind erosion occurs. The strong south and south eastern winds during summer can also result in wind erosion on exposed areas. The strong winds can also result in erosion along the coastal dunes if the dunes area is not stabilized by adequate plant cover. Recommended that dune areas are not actively grazed to prevent the potential of erosion. **Koringberg Rooikaroo** (Area 15), Dryland cropping areas Dry south eastern winds during May and June result in withering of young grains and can also prevent the germination of grain during years with a low rainfall. Gail force winds that occur during October and November can result in damage to ripe grain. **Middle Swartland Piketberg** and **Porterville** (Area 16), Cropping areas with Hills, **Koeberg, Kortreiberg, Malmesbury** and **Voorberg** (Area 17), High rainfall areas and Winds in this area do not generally have a negative impact on agricultural production. **Durbanville, Mamreweg, Paardeberg** and **Riebeek** (Area 18), Mixed farming areas The cool south and westerly winds that normally occurs during the afternoons in the summer months prevent high temperatures, which have a favourable impact on the climate in this area that allows for production of wine grapes of a high quality.		
Swartland is a winter rainfall areas with 80% of rain occurring during April to September which make this area suitable for the		

production of winter crops. Summer crops can only be produces under irrigation.		
Sandveld (Area 14), Veld grazing areas and marginal cropping areas This area has the lowest rainfall. The Sandy soils within this region have a low moisture retention ability that results in a marginal production potential. The good distribution of winter rainfall however ensures a constant winter crop production in this area. This area contains the largest natural grazing veld area in the Swartland. **Koringberg Rooikaroo** (Area 15), Dryland cropping areas Production is limited to cultivars with a short growth season. Low rainfalls and high temperatures during September can hinder development in some grain types. **Middle Swartland Piketberg** and **Porterville** (Area 16), Cropping areas with Hills **Koeberg, Kortreiberg, Malmesbury** and **Voorberg** (Area 17), High rainfall areas Deeper soils in this area have the capacity to store adequate moisture from rain during the winter months. Rainfall is also adequate for the production of dry land vineyard and winter grain production. This area is not known for extreme conditions that can have an adverse impact on agricultural production **Durbanville, Mamreweg, Paardeberg** and **Riebeek** (Area 18), Mixed farming areas This area is more suitable for the production of winter crop. Dry land vineyard production is only found in deeper soils with good moisture retention capacity. Height above sea level average 90 to 250 meters in the Darling Mamre Station area and between 100 to 300 meters above sea level in the Paardeberg and Riebeek areas. There are also a few		

mountain areas with heights above sea levels that vary between 600 to 700 meters.		
The area is characterized by warm dry summers and mild cold wet winters. The highest temperatures occur over December to March, except in the Sandveld (Areas 14) and Durbanville, Mamreweg, Paardeberg and Riebeek (Area 18) when the highest temperatures normally occur from January to March. **Sandveld** (Area 14), Veld grazing areas and marginal cropping areas During January 8% And February 14%change for heat waves with temperatures of more than 30 ºC. The locality of the area close to the sea results in milder temperatures in this area. Agricultural production in this area does not occur during the summer months, with the heat having a lesser impact. Temperature of below -2°C that can cause frost damage to agricultural production in this area is very rare. Some frost occurs in the lower lying areas along the Berg River. **Koringberg Rooikaroo** (Area 15), Dryland cropping areas December 57% January 71% February 76% and March 58% that heath waves of temperatures higher than 30 °C will occur. During January and February the changes area 36% to 40% that a heat wave with temperatures higher than 34 °C will occur. Frost seldom occurs in this area with the probability of frost occurring during June to September of only 7%. No frost damage to crops was recorder in the past 15 years. While June, July and August is the coldest months of the year the changes of frost occurring in the Moorreesburg area is below 1%. The changes of frost damage to crops during winter are therefore very rare.		

Middle Swartland Piketberg and **Porterville** (Area 16), Cropping areas with Hills The changes for temperatures higher than 34°C during January and February is 23 to 26%. The changes of temperatures higher than 30 °C during December is 43%, 53% during January and 60% during February. **Koeberg, Kortreiberg, Malmesbury** and **Voorberg** (Area 17), High rainfall areas The probability of higher temperatures than 30 °C during December to March is 32 to 49%. February is normally the month with the highest temperatures with a 49% change of temperatures higher than 30°C. Heat wave during January and February in these areas can increased the risk of veld fires. The winter temperatures are mild with the lowest temperatures from June to September. Temperatures of below -2°C do not normally occur in this area. **Durbanville, Mamreweg, Paardeberg** and **Riebeek** (Area 18), Mixed farming areas The probability of higher temperatures between 30 to 35°C in the Riebeek Valley during summer are 14%. Frost rarely occurs in this area, with only the lower lying areas that have temperatures of below -2°C during the winter.		
Land requirements for food security		
Existing agriculture and trends impacting agriculture		

Map 16: Farming areas within the Swartland



3.1.1.10 Tourism

Elements	Directives	Applicable Legislation
The growth of tourism is slowing down gradua and needs to be supported and expanded throug the adoption of a Swartland tourism developme strategy as envisaged in the Swartland SDF.	The strategy should look to • Co-ordinate and link rural, urban and agri-touris opportunities • Continue effective management and maintenance existing tourist attractions and investigate new touris opportunities • Invest in and develop tourism infrastructure (roads ar existing services) based on environmental impa assessment considerations • Provide opportunities where the local community, especia unemployed and disadvantaged people can get access economic opportunities (arts and crafts, local guides, loc food) • Conserve the pristine coastline and provide formal pub access to limit the impact on the environment • Strengthen and expand tourism routes, festivals (e. Rocking the Daisies) and events (e.g. Berg River Canc Marathon) • Support agri-tourism opportunities on farms especially the hills along the Diep and Berg Rivers • Support and develop socio-economic resources such a wildflowers, unique natural vegetation and existing park historical and cultural heritage, landscapes and coastline • Map farms offering tourism opportunities and link them a part of wider tourism routes.	

3.1.2 Socio-Economic Environment

3.1.2.1 Demographics

<table>
<tr><th>Elements</th><th>Directives</th><th>Applicable Legislation</th></tr>
<tr><td>
Between 2001 and 2022, the population in Swartland increased by approximately 42 000 people and 12 000 households in the first 10 years and 24 000 people and 5 700 households in the second 10 years.
<table>
<tr><th></th><th>Census 2001</th><th>Survey 2007</th><th>Census 2011</th><th>Census 2016</th><th>Survey 2017</th><th>SEP 2021</th><th>SEP 2025</th></tr>
<tr><td>Population</td><td>72 115</td><td>110 324</td><td>113 762</td><td></td><td></td><td>137 567</td><td>146 940</td></tr>
<tr><td>Households (Hh Size)</td><td>17 403 (3.7)</td><td>30 646 (3.6)</td><td>29 324 (3.5)</td><td></td><td></td><td>32 272 (4.2)</td><td>34 986 (4.2)</td></tr>
<tr><td>Annual Growth Rate</td><td colspan="3">1.99% (2001 -2011)</td><td colspan="4">4.56% (2011 -2021)
1.7% (2021-2025)</td></tr>
</table>
Table: Swartland Population
Swartland has the largest population in the West Coast District and is the sixth largest municipality out of 24 municipalities in the Western Cape.
</td><td rowspan="2">
Remodel settlements to be sustainable whilst catering for the needs of the population across income groups.
Anticipate a higher growth rate and prepare for coping with informality.

Provide for housing need aligned with infrastructure capacity.
</td><td rowspan="2">
WCDM-IDP, 2022 – 2027

Better quality of life to all residents
</td></tr>
<tr><td>
In 2021, the majority (70%) of the Swartland population was between 15 and 64 years of age, a cohort that represents the labour force.
<table>
<tr><th>Age</th><th>0-14</th><th>15-19</th><th>20-64</th><th>65+</th><th>Total</th></tr>
<tr><td>2016</td><td>33 872</td><td>12 316</td><td>80 152</td><td>7 421</td><td>133 761</td></tr>
<tr><td>2021</td><td>34 890</td><td colspan="2">95 936</td><td>6 738</td><td>137567</td></tr>
<tr><td>% of '21 total</td><td>25.4%</td><td colspan="2">70%</td><td>4.9%</td><td>100%</td></tr>
</table>
Table: Swartland Age Distribution, 2021
Comparing age distribution across all Western Cape municipalities, Swartland had an average proportion of children aged 0–14 years (25.4%) in 2016.
</td></tr>
<tr><td>
The majority (65.5%) of the population in Swartland is Coloured, followed by Black Africans (15.7%) whom has had the largest influx in numbers since 2011.
<table>
<tr><th rowspan="2"></th><th colspan="2">Black African</th><th colspan="2">Coloured</th><th colspan="2">Indian/Asian</th><th colspan="2">White</th><th>Total</th></tr>
<tr><th>N</th><th>%</th><th>N</th><th>%</th><th>N</th><th>%</th><th>N</th><th>%</th><th>+ other</th></tr>
<tr><td>2016</td><td>20 965</td><td>15.7</td><td>87 070</td><td>65.1</td><td>795</td><td>0.6</td><td>24 932</td><td>18.6</td><td>133 762</td></tr>
</table>
</td><td>
Settlement remodelling to enhance economic mobility of people and address skills development and income disparities.
Migration into Swartland to on services and available land and demand sustainable
</td><td>
SA Const, 1996: Structure spending & planning
Support safe & healthy environments
</td></tr>
</table>

2011	20 806	18	73753	64	585	0.1	17780	16	113 762*

Table: Race Distribution, Swartland (StatsSA, 2016)[*838 people unclassified]

infrastructure and services provision and maintenance.

In 2021 the male to female ratio is nearly equal: 50.4 females: 49.6 males.
In 2016 30.4% heads of households, were female

Create adaptive living and economic environments to cater for potential inflow of working males.

In 2016, over 112heads of households were younger than 18 years, compared to the West Coast and Western Cape where 189 and 4 877 heads of households were younger than 18 years. 96% of children 14 years and younger has both biological parents.

Provide for Social Housing, located in restructuring zones.
Create living environments that enhances health and particularly prohibit female mortality.

SA Const, 1996: Provide access to housing, education & health care

Swartland's settlements classified according to their populations ('000) have:
- Malmesbury as regional service center (population between 25 000 – 60 000),
- Moorreesburg, Darling, Riebeek Kasteel & - Wes and Chatsworth as villages (population between 5 000 – 25 000) and
- Kalbaskraal, Koringberg, Yzerfontein as remote village (population ≤5 000)

Main Town	'11 Census	'11 Survey	'16 Census	'17 Survey
Malmesbury	39 290	39 072	54 610	52 211
Moorreesburg	12 811	12 145	17 840	18 643
Darling	10 315	11 340	14 664	12 370
Riebeek-Kasteel	4 730	5 340	6 646	8 465
Riebeek-Wes	4 338	4 253	6 166	7 830
Chatsworth	3 962	4 657	5 730	8 280
Kalbaskraal	2 379	2 061	3 338	3 470
Koringberg	1 206	1 349	1 711	1 810
Yzerfontein	1 097	2 669	1 384	2 170
Total	**80 128**	**82 886**	**112 090**	**115 249**

In 2016 Swartland had a predominantly urban population of 86.5%.

Focus the provision of engineering services in Robertson being the most populated urban area.
Provide for improved service delivery (health care, education, etc.) in rural areas including Unique and area specific initiatives.

GPS, 2014: Guide PSDF implementation informed by settlement characteristics & performances
SA Const, 1996: Structure spending & planning.

3.1.2.2 Health

Elements	Directives	Applicable Legislation
In 2020, Swartland had the following Health Facilities: - a Training hospital as well as a hospital for Tuberculosis in Malmesbury. - A full-time primary health care clinic in Wesbank with satellite clinics in every other town within Swartland. - There are PHCs (4 fixed and 1 community day centre) and 9 Satellite or Mobile PHCs. - The West Coast District Municipality operates an ambulance service from the Malmesbury hospital and this service is available for other towns. Provision of Health and Emergency services i.e. clinics and satellite clinics in Malmesbury, Moorreesburg and Darling and remote villages comply with the norms.	New public health facilities are located in line with NSDP principles, i.e. where there is economic growth potential and where most people are located. Three quarter (75.1%) of WC households use public healthcare services as 24.9% (& 16.9% in SA) use private healthcare services and has medical aid (2019 Inequality Trend Report, StatsSA, 2017).	MSA, 2000: Support social and economic upliftment SA Const, 1996: Provide access to housing, education & health care
Provision of Emergency services i.e. fire stations and police stations in all Swartland settlements comply with the norms: There are 1 police station in Malmesbury, Moorreesburg, Darling and Riebeek-Kasteel and Riebeek Wes each. As per the norm, there are no police service points in Kalbaskraal, Riverlands and Chatsworth, Koringberg or Yzerfontein, however, there is a felt need in Kalbaskraal that such a service point should be provided.	Social amenities provision standards: • 1 mobile clinic / 5 000 persons of 1 250 dwellings • 1 community hall/ 10 000 persons/ 2 500 dwellings – 0.2ha	CSIR Social Amenities Provision standards: Provides guidelines that assist with the planning of social facilities.
The registered 2 884 **HIV/ AIDS** patients receiving antiretroviral treatment (ART) in 2020 is on the decrease (159 patients fewer since 2019). The number of new HIV/ AIDS patients in Swartland decreased from 463 in 2019 to 324 in 2020. In 2020, a total of 13 154 registered patients received antiretroviral treatment in the West Coast District including the 2 884 registered Swartland patients, representing 21.9% of the patients receiving ART in the West Coast District.	Create awareness and focus on reversing effects of HIV/AIDS through educational courses and programmes.	SA's National Strategic Plan for HIV, TB and STI's 2017-2022: Outlines the strategic framework for a multi-sectoral partnership to further accelerate progress in reducing the morbidity (illness) and mortality (death) associated with HIV, TB and STIs in South Africa

Climate change and Health Care: Demand for health care will increase due to water quality, stress because of change in domestic patterns, heat exhaustion	Provide within urban and building design for increased temperatures and preservation of water.	
By 2020, **Child Health** overall improved in Swartland since 2019 as the: • Immunization rate increased with 5% from 59.8% to 64.4%, yet the immunization rate remains low. • Malnutrition rate for children under five years (per 100 000) decreased from 2 0 to 1.0 • Neonatal mortality rate (per 1000 live births) improved from 15.6 in 2019 to 2.1 in 2020. • Low birth weight indicator improve from 18.8% to 12.1%	Raise awareness by means of the "First 1000 Days Programme" and Early Childhood Development Programmes	National Child Care Protection Policy 2019: SA Const, 1996: Provide access to housing, education & health care
Female Health in Swartland and West Coast District is slightly declining as • The maternal mortality rate (MMR) recorded zero deaths per 100 000 live births in 2019, worsening to 212.3 and 43.0 in 2020 respectively. • The delivery rate of women under 20 years of age in Swartland area and West Coast District was recorded at 15.8 and 14.7 per cent respectively. • the termination of pregnancy rate decreased marginally from 0.2 and 0.5 between 2019 and 2020 for the Swartland and West Coast District areas respectively.	An increased maternal mortality rate impacts on the sex ratio (no of female to males) and on the number of single parent families and/ or orphans Improving access to sexual and reproductive healthcare services for this vulnerable sub-population.	Sustainable DG 3.7,d: By 2030, ensure universal access to sexual & reproductive healthcare services, incl. family planning, education & information.

3.1.2.3 Education

Elements	Directives	Applicable Legislation
Learner enrolment and retention in Swartland declining with *(SEP 2021)*: • Learner-teacher ratio marginally improves from 31.5 to 30.2. • Learner enrolment increasing increased from 17 939 in 2018 to 18 650 in 2020. • Average learner retention is 74.7% in Swartland and 69.4% for West Coast area. Learner retention is a challenge across the District. The school drop-out rate remains a concern in 2020. • Swartland's Matrix pass rate has remained fairly stable over the past 3 years, at 84.5%, 84.0% and 85.8% in 2018, 2019 and 2020 respectively, which is slightly above the District averages.	Provide for primary, secondary and tertiary education facilities: Provide for recreation and sport facilities for all age groups	PSDF, 2014: SG 2: Improving Education Outcomes & Opportunities for Youth Development
<u>There are:</u> • 65 pre-primary and playschools; • 17 primary schools (1 primary school per 750 erven /2600 people (average of 3.5 people per family) • 4 secondary schools, and • 2 high schools (1 high school for every 3 primary schools / 7900 – 10 000 people) • 30 schools in total and 22 no fee schools • 16 schools with libraries. • 5 hostels in Malmesbury; 1 hostel in Riebeek Valley • 3 tertiary institutions in Malmesbury • 19 campuses for basic education for adults	Provide for allowing students access to information which is in turn directly linked to improved education outcomes: Libraries within schools contribute towards narrowing the academic attainment gap.	CSIR Social Amenities Provision standards: • 1 primary school/ 3 000 – 4 000 persons of 1 000 dwellings – 2.8ha • 1 secondary school/ 6 000 – 10 000 persons of 2 500 dwellings – 2.6ha • 1 library/ 10 000 persons of 2 500 dwellings – 0.1ha • 1 crèche / 5 000 persons – 0.08ha
Provision of educational facilities in Malmesbury, Moorreesburg and Darling and in the remote villages complies with the norms, with some exceptions: - Malmesbury has an undersupply of Grade R classes (17 grade R classes while the norm is 39 – 47). Crèches (34 crèches against the norm of 16 – 19) fill the gap. - There is a shortage of Grade R classes (Moorreesburg 2 vs 13 required, Darling 7 vs 11 required). The oversupply of crèches compensates for the		

lack of Grade R classes. Yzerfontein requires a Grade R class (there is only one crèche) - Darling, Riverlands, Chatsworth and Riebeek Valley (Kasteel & West) require a secondary school. Chatsworth, Kalbaskraal, Koringberg, Riebeek Kasteel and –Wes have each 1 Grade R classes. There are primary schools in Kalbaskraal (1), Chatsworth (1), Riverlands (1) and Koringberg (1), in the rural areas i.e. Rust Stasie (1), and Riebeek – West (1) and an intermediate (Gr 4 – 6) school in Riebeek Kasteel. There is a skills school in Riebeek West.		
Of the population aged 20 years and older (as per StatsSA 2011), a total of - 45.8% has no or incomplete primary school education vs 49.6% jobs requiring low skilled persons. - 35.4% has completed primary or incomplete secondary schooling and are semi-skilled vs 34.7% jobs requiring semi-skilled persons. - 11.9% has complete secondary schooling or a tertiary qualification vs 15.7% jobs requiring skilled persons. Age distribution of residents within the Swartland municipal area indicates that 25% of the population is younger than 15 years (represents pre-school and children going to school).	Access to skills development facilities/ Educational/ community facilities for those out of school. Those members of the community with no schooling should be significantly reduced through a municipal wide initiative. Provide for provision of preschool facilities.	MSA (2000): Support social and economic upliftment

3.1.2.4 Municipal Expenditure and Investment

Elements	Directives	Applicable Legislation
As per Swartland Municipal multi-year capital budget, funds were sourced from different levels of Government for 2021/22 in accordance with the Municipal Budgeting and Reporting Regulations: - R240 600 million for provincial Infrastructure spending and - R166 435 million for municipal Infrastructure spending		PSDF, 2014 SG 4: Enabling a Resilient, Sustainable, Quality and Inclusive Living Environment;
Spending on social infrastructure Social infrastructure enables economic growth and a total of R111 069 was spend during the 2021/22 financial. The Western Cape Government (WCG) will spend 43.5% of its 2021/22 infrastructure budget on social infrastructure in the Swartland. A quarter (24.9%) of the Swartland budget allocation by the WCG will be spend on Education. Department of Health has allocated 1.4% (R3.440 million) for health infrastructure. The remainder of its social infrastructure budget (R41.160 million) will be spend on Human settlements to address the housing backlog. Swartland Municipality allocated 2.6% (R4.32 million) of its own 2021/22 capital spending on sport and recreation infrastructure and R150 000 to community and social services. Crime rate is high and deter investors. Hence Swartland municipality allocated 1.2% (R1.998 million) to public safety.	Enhance National Monetization Infrastructure, Multi use of facilities Enhance multi-purpose architecture Health facilities (both hospitals and clinics) & ART facilities Recreation and sports facilities for youth Educational/ community facilities for those out of school.	WCDM IDP, 2022 –2027: Transport, Economics, Disaster, Environmental, Community, Waste & Water. MSA, 2000: Support social and economic upliftment PSDF, 2014: SG 1: Creating Opportunities for Growth & Jobs; MERO, 2020: provides detailed economic intelligence disaggregated at a metro, district and municipal level to help inform policy intervention and budgeting at local government
Spending on trading services: Basic services (trading services) enable economic activity via access to water, electricity, sanitation and refuse removal. a) 58.9% or R98.048 million is allocated towards the provision of basic servicesin 2021/22 / what about 2023/ 24: o Water (R9 925 million or 10%), o Electricity (R23 321 million or 24%) o Waste management (R1 862 million or 2%) and o Waste Water management (R62 940 million or 64%)	Less coal generated electricity to curb Climate change Reuse waste water to curb climate change Water wise house installations and gardening to curb climate change Waste recycle to curb climate change Recycle facilities	Alternative Energy facilities (Dual energy facilities) Cleaning of waste water facilities Minimal resources in terms of capacity and finances are available to fund growth initiatives; Fin Pln: Evaluate services levels and types of services rendered against ability to pay for services.

b) % or R million for providing free basic services to xx indigent: Water (Basic charges)		
Spending on economic infrastructure Economic infrastructure enables economic growth too and a total of R183 069 was spend during the 2021/22 financial year. WCG allocated R136 million (56.5%) in 2021/22 towards the rehabilitation of roads to unlock the regional economic potential, especially given its position to the N7. Swartland will contribute a further R34 490 million of its 2021/22 capital budget (20.7%)of the total capital spending towards road transport. As part of the economic and environmental services allocation, the Municipality will contribute R12.578 million towards planning and development.		Integrated Resource Plan 2019: An electricity infrastructure development plan based on least-cost electricity supply and demand balance, taking into account security of supply and the environment (minimize negative emissions and water usage).
Levels of operating income		Fin Pln: Improve municipal financial position to provide services at affordable levels (a 3 year budget).
Staff Levels		
The Swartland IDP identified the following external factors that have a substantial impact on the finances of the Municipality that limit sustainable service delivery: • Eskom's excessive annual tariff increases of between 20% and 30% over the past four years; • Higher that inflation rate increases in the price of bulk water purchased by the Municipality from the West Coast District Municipality; • High salary increases as determined by collective agreements on national level; • The retention and attraction of skilled staff; • A lack of capacity with respect to sewerage, electricity and bulk water supply; • Services backlogs in Ward 4 and 7; • Upgrading and renewal of existing infrastructure; • The possible implementation of a one government service which will further paralyse service delivery; and • Unfunded or underfunded mandates such as libraries, museums, motor licenses, road worthy testing, learners and drivers licenses, veld fires and low cost housing.		
Arreas for rates and services		

3.1.2.5 Economy

Elements	Directives	Applicable Legislation
Swartland's economy was valued at R8.6 billion (current prices) and having 46 667 people employed in 2019. Major contributors to Swartland's economy (GDP) in 2019 were: • Manufacturing sector, 26% or R2.9 billion, Secondary Sector • Wholesale, retail trade, catering & accommodation sector contributed 18.2% or R1.6 billion, Tertiary Sector • Agriculture, 12.5% or R1.1 billion, Primary Sector • General Government, 11.9% or R1 billion, Tertiary Sector • Finance, insurance, real estate and business services, 9.3% or R799.4 million), Tertiary Sector • Community, social and personal services, 6.9% or R594.7 million Swartland's economic sector performance profile: Competitiveness relative to Production output High Competitiveness High competitiveness, low output Competitors Small export focus, Agricultural processing High competitiveness, high output Performers Manufacturing Wholesale & Retail Low competitiveness – Low output Weak sectors Electricity & Water Community, social, personal services Mining & Quarrying Transport & Communication Construction Low competitiveness – high output Internal focus Finance, insurance, real estate & business General Government Agriculture, Fishing & Forestry, Low Low Output High Economic vs Employment Sector Contributors	Prioritize settlements for investment and provide for sufficient zoned land to improve the economy. The development of zoned land, which grows the construction sector, should benefit the economy. Sectors competing in the economy that could be considered as performers should be provided for spatially. Secondary activities related to manufacturing and tertiary sector activities such as Wholesale and Retail, including tourism has a high output and high competitiveness. Provide for clustering industries adding high value and that are labour intensive. Provide alike or differently for the remaining sectors contributing either employment opportunities or add value	MSA (2000): Provide access to quality and affordable services West Coast Poverty Alleviation Strategy (WCPAS) Support economic growth in CW: • Provide road infrastructure and production areas • Suitable areas for small farmers; • Agricultural markets; • Multi use of structures WC Landuse Planning Guidelines: Rural Areas, 2019: Guide the type and extent of activities supported in a rural context (fast track development) PSDF, 2014: SG 1: Creating Opportunities for Growth and Jobs; MFSCSGP, 2014: Provides sound economic and financial evidence to support

Rank	1	2	3	4	5
Employment	Agriculture	Retail & Accom	Community&Social	Government	Manufacturing
Economy	Manufacturing	Retail & Accom	Agriculture	Government	Finance & Real E

For the period 2015 – 2019, the economy of Swartland realized an average annual growth rate of 1.1% and can be attributed to the secondary and tertiary sector growth of 2.2% & 1.6% respectively. Finance, insurance, real estate and business services sector (1.9%) &community, social and personal services sector (1.8%) were the key tertiary sector growth drivers. Wholesale, retail trade, catering & accommodation sector, increased by 2% in 2019. A decline in economic growth was anticipated due to Covid 19.		spatial principles and weight to spatial plans.
Economic Sector Employment contributors in 2018/ 2019 respectively: • Agriculture, forestry and fishing (13 400 or 28.7%), • Wholesale and retail trade, catering and accommodation(9 697 or 20.8%) • Community, social and personal services (5 875 or 12.6%) and • General Government (11.4% or 5 300), • Manufacturing (10.5% or 4 925) Swartland's economy in • A total of 44 642 workers of which 35 299 (79.1%) are in the formal sector and 9 343 (20.9%) are in the informal sector is estimated to be employed in 2020. • Most of the formally employed consist of low-skilled (49.4%) and semi-skilled (34.7%) whilst the demand for semi-skilled and skilled employees has increased. *Swartland's economic sector performance profile: Value Added relative to Employment* High Value Added Low Finance, Insurance, real estate & business Transport & Communication Wholesale & Retail Manufacturing Construction Electricity & Water Mining &Quarrying General government Agriculture, Fishing & Forestry Community, social and Personal service Low Employment High	Secure services and resources for industry: Water, Electricity, Sewerage and Waste removal services. Provide spatially for sector interdependence and value chains. Enhance agricultural value chain developments: Enhance manufacturing, trade and other services as adding high value and being labour intensive. Protect the employment intensity provided by Agriculture, Forestry and Fishing and protect agriculture areas by delineating Agriculture SPC Provide for agri-facilities that are not agri-industry outside urban areas (Value chain activities) given the scale thereof. Provide for on-farm agri-industry and agri-industry facilities. Provide for and guide net coverage (netting) Provide for strengthening the core growing sectors that contribute to the economy (and gross value added) and employment: Wholesale and Retail and Manufacturing and Construction. Sectors Agriculture and Community, Social and Personal Services are labour intensive but add less value. Finance, Insurance, Real Estate & Business and Transport, Storage and Communication are	WCDSDF, 2019 - 2024 • Economic growth • Enhance infrastructure investment in high economic growth potential areas. • Facilitate employment creation, economic growth and tourism development, access to education and health facilities. *PSDF, 2014* Spatial economy promoted: - Regional growth drivers: Cape Town - Namiblia, IDZ Regional development corridors: N7 Regional transport corridors: N7 & R45; Leading towns (growth potential). *One Cape 2040, 2012* Transition towards a more inclusive and resilient economic future for the Western Cape region.

Unemployment rates in 2020was 10.6% (people looking for work and not finding employment, not people that want to work but do not actively seek employment) Swartand's 10.6%; West Coast District's 11.7% and Western Cape 18.9% (StatsSA, 2022).	sectors with the highest value addition but are not labour intensive.	Working together to develop our economy and our society
Industrial development (manufacturing) is no longer only driven by agriculture but by spill-over growth from Saldanha and CoCT. Though having high economic value, it is energy and water dependent. Financial, insurance, real estate and business services is built on the foundation of other economic sectors and grows in concert with other sectors. Wholesale & retail trade, catering & accommodation, including tourism, needs consistent supply of resources, including human resources. Sudden disruptions expected as people and supply lines suffer from climatic stress.	Prepare for need for energy & water efficiency Provide for increased opportunity in renewable energy sector (& other green technology) Demand increased environmental responsibility. Increased business risks require long term spatial adjustment. Create opportunities in environmentally responsible development. Prepare for certain areas becoming less appealing for tourism. Need for energy & water efficiency (incl. positive impact of cost savings & increased resilience). Requires long term adjustment to changing climate.	
Property prices and rentals		

3.1.3 Built- Environment

3.1.3.1 Hierarchy and Role of Settlements

Elements	Directives	Applicable Legislation
Malmesbury is located approximately 60 kilometres north of the Cape Town Metropolitan area. The town is surrounded by hills of vineyards and wheat fields. The vibrant combination of colours and textures of the landscape contributes to the unique character of the Swartland. Malmesbury also serves as the connection point for four major transport routes; the N7 that connects Cape Town with the Northern Cape and Namibia, Main Road 25/1 that connects Ceres and Paarl with the N7, the R302 Main Road 174 that connects Stellenbosch and Durbanville with Malmesbury and lastly Main Road 21/1 that connects Stellenbosch and Durbanville with the West Coast. The location of Malmesbury in terms of access and transportation routes as well as the town's proximity to other towns such as the Riebeek Valley, Darling, Yzerfontein, Moorreesburg, Vredenburg, Langebaan and Piketberg are contributing factors to the identification of Malmesbury as the regional service centre of the Swartland	How to enhance the interdependency between the settlement within the region	MSA, 2000: Support social and economic upliftment MSA, 2000 Support social and economic upliftment Prioritize development of geographical areas SA Const, 1996 Structure spending & planning; Support safe & healthy environments; Provide access to housing, education & health care IUDF 2016:Guide development of inclusive, resilient and liveable urban settlements, while directly addressing the unique conditions and challenges facing South Africa's cities and towns
Abbotsdale is situated 5 kilometres from Malmesbury in a south-western direction and is classified as a small rural town. The town has access directly from the N7.		
Kalbaskraal is the southernmost settlement within the Swartland Municipal jurisdiction area. Although this town is isolated from Malmesbury (main town of the Swartland) access is obtained directly from the N7 that connects Malmesbury with the Cape Town Metropolitan area.		
Moorreesburg is located approximately 100 kilometres north of the Cape Metropole along the N7 route and 70 kilometres to the east of the West Coast towns of Langebaan and Saldanha. The town is centrally located in the northern part of the Swartland and form an important agricultural service centre to the surrounding extensive agricultural production area.	How to enhance the growth potential and economic capacity of Moorreesburg Promote Mixed Use	
Riebeek West is located in the east of Swartland, approximately 6 kilometers north of Riebeek Kasteel, in the Riebeek Valley. The town is situated close to the slopes of the Kasteelberg, surrounded by intensively cultivated agricultural activities including some of oldest wineries in South Africa, namely Groenrivier, Allesverloren and Brandwag. Access to Riebeek West is obtained from the R311, the main traffic route in the Riebeek Valley that connects with the N7 at Moorreesburg, and the R45 between Malmesbury and Hermon.		
Riebeek Kasteel is situated approximately 20 kilometres northeast from Malmesbury and receives access via the Paarl road (Divisional Road 24/1) to the R45 that connects Malmesbury with Hermon. The R45 is connected to the N7 via the R311 (main route in the Riebeek Valley). The town is located along the slopes of Kasteelberg and is surrounded by some of the oldest vineyards in the history of South Africa. The town's characteristic grid layout is encouraged by the surrounding vineyards along with intensive agricultural uses adjacent to the urban edge.		
Riverlands is located 14 kilometres south of Malmesbury along the western side of the N7 in the area known as Greater Chatsworth. Access from the N7 to Riverlands is obtained via connection road no 241.		

Chatsworth is located on the southern boundary of the Swartland Municipal area in the area known as Greater Chatsworth. The town is situated 14 kilometres south of Malmesbury. Access from the N7 national road to Chatsworth is obtained via connection road no 241. The N7 is approximately 4.5 kilometres east of the town.		
Darling is situated in the rural area of Ward 6 in the Swartland Municipal area. This town is approximately 80 kilometres from Cape Town and located near the West Coast Industrial Corridor. Access to Darling is obtained from the R315 via Malmesbury (N7) and the West Coast road (R27)		
Yzerfontein is situated approximately 80 kilometres from Cape Town along the west coast in the Swartland region. This location advantage and accessibility contributes to the town's attractiveness and growth over the past years. Permanent residence commutes to work from Yzerfontein.		

The Western Cape Growth Potential Study of Towns in the Western Cape (2014) (determined the growth potential and socio-economic needs of settlements in the Western Cape) identified Malmesbury as having a very high growth potential and identified four more settlements as having high growth potential.

Key: L= Low, M= Medium, H=High, VH=Very High	Human Capital	Economic	Physical or Natural	Infra-structure	Institutional	Combined
Malmesbury (W 8-11)/ & Abbotsdale (W 7)	M	M	VH	VH	H	VH
Moorreesburg (W 2)	H	L	M	VH	H	H
Darling (W 5 & 6)	M	L	L	VH	H	M
Riebeek Kasteel (W 3)	H	M	VH	H	VH	H
Riebeek West (W 12)	H	M	VH	H	VH	H
Yzerfontein (W 5)	VH	M	VL	VH	H	M
Koringberg (W 2)	H	L	H	H	H	M
Kalbaskraal (W 7)	H	M	VH	H	H	H

Need for investment into human capital is low in Ashton, medium in Robertson and McGregor and high in Bonnievale and Montagu
Provide for sufficient space for skill training facilities.
Provide for educational facilities.

How to make human skills development more accessible
Provide for non-motorized transport facilities

How to support and enhance the informal economy
Provide for small businesses and informal trading

WCDM IDP, 2022 – 2027
Better quality of life to all residents
Attend to job creation;
MSA, 2000, Provide access to quality and affordable services
PSDF, 2014, SG 5: Embedding Good Governance, Integrated Service Delivery through Spatial Alignment
SG 4: Enabling a Resilient, Sustainable, Quality and Inclusive Living Environment
Sustainable development (future generation) *"triple bottom line"*: Ecological Integrity (Planet), Social Justice (People); Economic Effectiveness (Market)

Towns	Malmesbury, Moorreesburg	Riebeek Kasteel, Riebeek West, Darling	Chatsworth, Riverl	Koringberg, Kalbaskraal	Yzerfontein
Settlement Status	Regional centre and Service Centres	Rural Towns	Rural Settlements	Rural Villages	Coastal Resort
Economic Base	Agri services & processing	Residential, agri-services, tourism	Residential	Residential	Residential
Opportunity generation	Malmesbury: Bread basket of the Western Cape Support agri-processing;	Agri & eco-tourism, cultivation & processing of "niche products" Darling: Kaleidoscope of agriculture, art and flowers; Riebeek West & Kasteel: Cultural heritage, scenic landscape and agri-tourism	Rural residential, eco-tourism, conservation (cultural & natural)	Rural residential; Urban agriculture with irrigation. Agri & eco-tourism, cultivation & processing of "niche products".	Tourism, West Coast Promote aqua marine cultivation & coastal tourism
Convenient & equal access	N7 transport service centre & Railway connection; proximity to Cape Town Density Norm: 13 Du/ha	Railway Connection; Riebeek Valley; Regional connection between interior and coast (proposed IDZ) Density Norm: 8 Du/ha	Proximity to Cape Town Density Norm: 10 Du/ha	Remote yet accessible via N7 Density Norm: 4 Du/ha	Coastal Town Density Norm: 9 Du/ha
Resource Frugal	Minimum Erf Sizes: 400m² – 700m², 500m², 260m²	Minimum Erf Sizes: 500m², 1000m², 2000m²; 500m²	Minimum Erf Sizes: 400m²; 500m²	Minimum Erf Sizes: 400m² – 1000m², 500m²	Minimum Erf Sizes: 500m²
	Subsidized, Rental & GAP housing	Subsidized & GAP housing	Subsidized & GAP housing	Subsidized & GAP housing	Holiday Housing
Institution frugal	Functional & Social Integration: Social & commercial services along activity streets: Wesbank, Ilinge Lethu, Abbotsdale, Develop between Malmesbury & Abbotsdale incl. community sports facilities, Reinforce commercial uses in Rosenhof, Safe pedestrian & cycle route along Main Road, Centrally located community node between Moorreesburg & Rosenhof	Functional & Social Integration: Better located social & commercial services in northern (Darling) precinct/ new housing (Riebeek Wes) projects/ Esterhof (Kasteel); Development reinforced along route & pedestrian walkway between Esterhof & Kasteel A central community sports facility in Wes	Functional Integration: Create a central node with social infrastructure and transport route between Riverlands and Chatsworth	Functional Integration: Improve social infrastructure in central location	Functional Integration: Social infrastructure for retired community
Choice: variety & diversity	Functional Integration Mixed uses along Bokomo/ Darling Way to integrate Malmesbury and Wesbank & along link road between Rosenhof & Moorreesburg	Mixed used along activity streets and link roads: Darling, Riebeek Kasteel & West	Mixed use along transport route between River-lands& Chatsworth		Mixed & alternative uses along activity streets
Quality of place/ Timeless	Grid layout in the historic core adjacent to the Diep River	Grid layout	Grid layout	Grid layout	Linear layout following coast line
Aesthetically appealing (Sensory qualities)	Social Integration: Open space network along Diep & Platteklip Rivers	Social Integration: Central plain between north & south Darling		Diep River open space system extended to Kalbaskraal	Open space system linking coastline & natural vegetation
Resilience: withstand stress, survive, adapt, bounce back	Sufficient electrical and civil services to accommodate interruption	Sufficient electrical and civil services to accommodate interruption			

3.1.3.2 Transport

Elements	Directives	Applicable Legislation
Public Transport The National Household Travel Survey (NHTS), 2020 confirmed that in the Western Cape 1.6% commuters travelled by train, 5.2% by bus and 20.7% by minibus taxi, whilst 39.8% commuters travelled by private transport and 31.5% travelled by walking.	Need for investment into mobility of people Provide for sufficient non-motorized and motorized facilities. Ensure an efficient road network to promote the economy of a municipality. Provide for bus services in Swartland. How to enhance the interdependency between the settlement within the Swartland, where necessary.	PSDF, 2014: Prioritise & guide investment & infrastructure development. MSA, 2000: Prioritize development of geographical areas WC Provincial Land Transport Framework, 2011:The purpose is to: • State provincial objectives and policies that give direction to transport on a provincial-wide scale. • Ensure national planning objectives and policies are implemented at the provincial scale. • Assist in coordinating and integrating transport in the province. Serve as basis for preparation of Integrated Transport Plans (ITP's) and other public transport plans in WC province.
The commercial bus services that operate through Swartland are Intercape between Cape Town and Gauteng via Malmesbury & Springbok Sibanye between Cape Town and Malmesbury Elwierda between Cape Town and Saldanha via Malmesbury.		
Malmesbury, Moorreesburg and Darling have formal taxi ranks are established. The highest demand for this service is on Saturday mornings, especially at the end of the month. Long distance taxi services (more than 60km) are provided on demand only. However, in the more isolated settlements, the public transport operations are less frequent and may operate once a week only (DoT, 2016).		
Three railway lines/ routes cross the Swartland: Bellville-Malmesbury-Bitterfontein via Moorreesburg and Koringberg, Belville-Kalbaskraal-Vredenburg via Darling and Bellville-Paarl-Wellington-Hermon-Porterville via Riebeek Valley and Ongegund accommodating PPC cement. Rail is mainly used for freight. Passengers can only travel from Malmesbury to Belville and back via rail.	▪ Improve mobility and reuse rail *as an alternative means of transport for people and goods*	
Some private gravel landing strip exists. A military airfield in disuse exists north of Darling in the direction of Hopefield.	The publicly owned airstrips should be maintained and managed to ensure the maximum benefit of this facility.	SA Const, 1996 Structure spending & planning Support safe & healthy environments Civil Aviation Act (Act 13 of 2009): Deals with acquisition of land use rights in

	The publicly owned airstrips should be maintained and managed to ensure the maximum benefit of this facility. Residential developments close to airfield should not be allowed within the 55dBA and higher noise levels.	connection with airports and consultation with interested parties.
Non-Motorized Transport (NMT) is limited in Swartland. The National Household Travel Survey (NHTS), 2020 confirmed that 31.5% of household members walk instead of travel by motorized transport. There is a low frequency of lower order settlement nodes along the N7 and R45 routes, the majority of which are within 20km or more apart.	How to enhance movement of people. Provide for transport and non-motorized transport. A public transport and non-motorized transport system focused on integrating the main settlements should be implemented. Enhance economic mobility Malmesbury to Koringberg: 53km, Moorreesburg: 39km Riebeek Kasteel: 23km & West: 26km, Darling: 34km, Kalbaskraal: 30km, Chatsworth: 25km & Riverlands: 20km, Yzerfontein: 59km	WCDM IDP, 2022 – 2027: Integrated Regional Plans: Transport, Economics, Disaster, Environmental, Community, Waste & Water. PPTIF, 2015 SALGA Smart City Development Maturity Framework: Smart Transport – encompasses transportation network optimization (including mixed-modal access), traffic management, logistics, and related smart mobility elements, incorporating enhanced ICT infrastructure with real time monitoring and control systems.
Road and Storm Water Infrastructure upgrades are required: Malmesbury (including Abbotsdale, Wesbank, Illingu Lethu): ▪ Storm water channel through the centre of town is old with some areas collapsing – channel will have to be rebuilt. ▪ Upgrade of R45 & Bokomo Way intersection is required. ▪ Parts of the existent storm water network, especially Wesbank, is blocked and has to be replaced. ▪ A maintenance and upgrade programme for rivers should be implemented. ▪ There are approximately 42 km of gravel roads, mostly in Abbotsdale, that have to be upgraded. Moorreesburg (including Hooikraal):	The major road freight related issue in Swartland Municipality is the lack of overnight facilities to accommodate freight vehicles and operators along the N7 and R45. Sensitive location of mobility infrastructure to limit impact on the environment. Limit impact of infrastructure in coastal areas on coastal processes	ITP, 2016: provide district and local municipalities with a planning guide to overcome the challenges identified within the transport system. WC FS, 2018, To provide an action plan for improving the WCs freight transport network's ability to meet the demand for the movement of goods reliably, at optimal cost and in a sustainable manner to support the province and South Africa's development goals

▪ Parts of the storm water system in the area of Lang Street and Royal Street are inadequate and has to be upgraded. ▪ There are approximately 12 km gravel roads, mostly in Hooikraal. ▪ A maintenance and upgrade programme for rivers should be implemented. Koringberg ▪ There are approximately 7 km gravel roads that have to be upgraded. Riebeek Valley (including Ongegund) ▪ Large parts of the existent storm water system exist of open ditches and channels that have to be upgraded to a piped system. ▪ The storm water system in Esterhof is inadequate – regular flooding ▪ Upgrading of 12 km gravel roads required Darling ▪ Large parts of the existent storm water system exist of open ditches and channels that have to be upgraded to a piped system. ▪ Upgrading of 17 km gravel roads required Yzerfontein ▪ Parts of the existent storm water system are inadequate and flooding is frequent. ▪ Upgrading of approximately 1 km gravel roads required Riverlands and Chatsworth ▪ Backlog of approximately 21 km in terms of streets and storm water. Kalbaskraal ▪ No formal storm water system, backlog of approximately 8 km in terms of streets and storm water.	▪ Manage storm water to enable recycling of water ▪ Change Malmesbury's storm water canal into a feature and open space	WCDSDF, 2019 – 2024: Concentrate investment in settlements with economic and resource potential
<u>Road Network</u>: N7, R44, R45, R46, R304, R311, R315, R307 and the R27 Transportation: A number of main road and rail links exist; all are carbon & energy intensive. Continuous increased costs of fossil fuel based transport Sudden disruptions of transport services due to extreme events	Improve mobility in region. Increase pressure on energy and emissions efficiency Modal shifts of transportation are required.	
Transport infrastructure In Swartland, only ±39.8% of households own cars and the remaining 60% are dependent on other forms of transportation (StatsSA, 2011).		

Settlements in Swartland are in need of bus shelters whilst some are in need of taxi ranks and routes to Malmesbury (R Mal) as per the table below:

Wards	1	1&2	3	4	4	5	5&6	7	7	8	9	10	11	12
	Kor	Moo	RieW	Cha	Riv	Yze	Dar	Kal	Abb	Mal +WhHi	Ilg	Malm+ WesN	Saa	RieK
Shelter	X	X & Abl	X	X	X	X	X	X	X	X	X	X	X	X
T Rank		X					X						X	X
R Mal		X	X				X							X

Table 20: Transport Infrastructure and Public Transport Needs

Routes and more frequent trips outside Swartland from Malmesbury to Paarl, Atlantis, Cape Town/ Durbanville/ Kraaifontein/ Parow/ Belville are required. Malmesbury serves as the transport hub for the region.

More stops near grocery shops and shops in Malmesbury are required. The quantity of shopping is limited to what individuals can carry as most taxi users have to walk from the shops to the Malmesbury taxi rank. Instituting a pakkie-pendel service, an alternative motorized vehicle that connects the shops to taxi rank on a route having five stops is proposed.

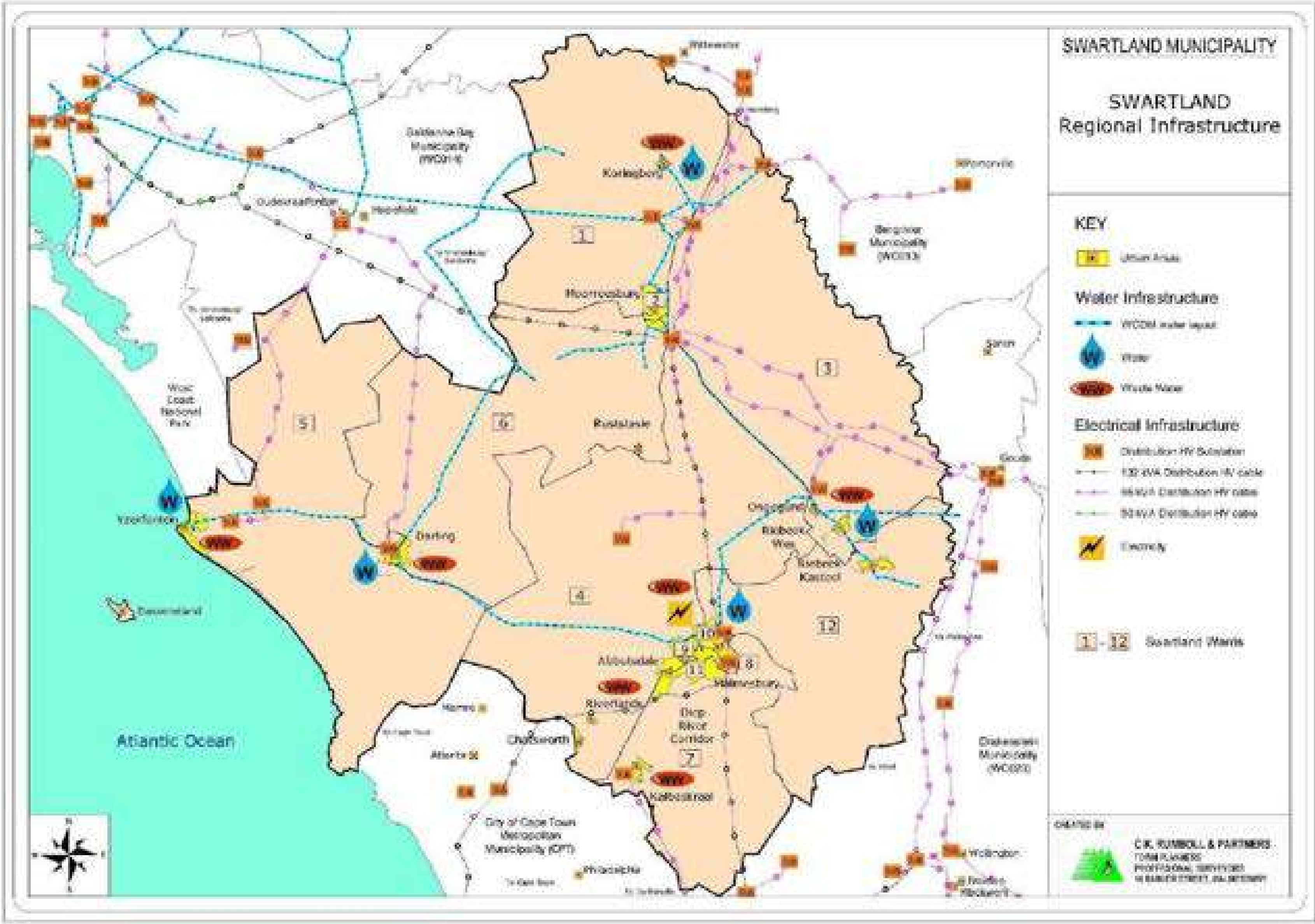
Regional and district transport nodes have not as yet been established within Malmesbury. However the dualing of the N7 has open up these opportunities.	Map intersections that can be developed as district transport nodes.	
The existing capacity of the road transport network and the proposed networks as per the Master Plan accommodates the current population and growth and densification needs to be assessed		

3.1.3.3 Solid Waste Management

Elements	Directives	Applicable Legislation
Swartland the following licensed domestic waste landfill facilities: Municipal Landfill / Transfer stations Malmesbury, Abbotsdale, Wesbank, Illingu Lethu: Highlands Moorreesburg, Hooikraal): X Koringberg: X Riebeekvalley, Ongegund: Darling Darling: X Yzerfontein: X Riverlands & Chatsworth: X Kalbaskraal: X	Promote recycling Provide for recycling facilities of re-cycleable material and organic waste. The Municipality should proceed with the implementation of the IWMP which includes the public consultation process and the development of detailed action plans and key performance indicators: - Make the public aware of waste management procedures and available facilities; - Create a greater awareness of waste minimisation; - Municipality to prepare an Integrated Waste Management by-law that includes penalties, inform and instruct industries to submit Industry Waste Management Plans and industry waste information and quantities; - All waste management facilities should be audited on a regular basis as required in terms of each respective waste permit. Provide for waste facilities for settlements and for rural areas Municipality should not consider establishment of additional waste disposal sites until such time that the outcome of the regional waste site is finalised (IWMP, 2012). A minimum of a 500m buffer should be observed around solid waste sites. No residential development should be located within this buffer.	Swartland MIWMP, 2021: Manage waste sustainable NEM: WA, 2008: Protect environmental health & prevent ecological degradation as per norms and standards (waste management, control, licensing & remediation of contaminated land.) WCDM IDP, 2022 – 2027 Integrated Regional Plans" Transport, Economics, Disaster, Environmental, Community, Waste & Water. NWMS, 2011: Implement a waste management hierarchy during lifecycle of waste: - avoid and reduce waste, - re-use and recycle, - recover, - treat and dispose. NSDP, 2019: Address environmental, social & economic inequalities; Focus state investment on areas with economic growth potential; Focus economic and settlement growth along nodes & activity corridors SALGA Smart City Development Maturity Framework: Smart Transport – encompasses transportation network optimization (including mixed-modal access), traffic management, logistics,

		and related smart mobility elements, incorporating enhanced ICT infrastructure with real time monitoring and control systems
All the domestic waste in the towns are collected on a weekly basis with all the towns also provided with recycling bins located at easily accessible points for paper, plastic and glass. Swartland Municipality removes urban household waste of 97.7% Households at least once a week. A total of 95% of all domestic waste are dumped at the Highlands Landfill site south of Malmesbury. Darling also has a smaller landfill site. There is also a long term plan to establish a composting plant for all garden waste and to process all building rubble. The Highlands landfill site has a 30 year lifespan. Refuse: every week, each town's refuse is removed. Each town has a recycle igloo for glass, paper and plastic. Dumping sites are in Darling and Malmesbury. Long term plan is to use garden refuse for compost and to reuse building materials.	Provide for waste facilities for rural areas & for settlements The Municipality should not consider the establishment of additional waste disposal sites until such time that the outcome of the regional waste site is finalised (IWMP, 2012). Promote recycling on household level Recycle refuse, including garden and building material refuse	WCDM: IDP, 2022 – 2027: Integrated Regional Plans: Transport, Economics, Disaster, Environmental, Community, Waste & Water. WCIWMP, 2017: Manage waste sustainably & promotes integrated waste management. WC Infrastructure Framework, 2013: Align the planning, delivery and management of infrastructure, provided by all stakeholders to the strategic agenda and vision for the WC PSDF, 2014: Prioritise & guide investment & infrastructure development. CWDMIWMP, 2015 • Manage waste sustainable: • Divert waste to regional landfill sites Minimize adverse impacts
The capacity of Highlands can accommodate future growth and densification as land has been earmarked and acquired to expand the landfill site.		

Map 35: Need, Demand and Provision till 2025 Overview, Swartland



3.1.3.4 Energy

Elements	Directives	Applicable Legislation
For 98.3% of households electricity is the main energy resources used for lighting as per 2011 Census.	Connect the majority of households to renewable energy sources Decrease domestic load by using renewable energy sources, i.e. solar hot water cylinders and photo-voltaic systems should be encouraged and implemented in all new developments. The SDF should identify opportunities for alternative energy sources, e.g. solar and wind energy	SALGA Smart City Development Maturity Framework: Smart Transport – encompasses transportation network optimization (including mixed-modal access), traffic management, logistics, and related smart mobility elements, incorporating enhanced ICT infrastructure with real time monitoring and control systems
Climate change, Electricity: characterized by increased demand and costs and load shedding (unreliability) Climate change, Energy: Large carbon footprint for energy intensive uses. Imbalance between distribution and supply infrastructure. Very high level of domestic demand	Provide for alternative energy solutions as pressure increase on bulk electricity supply. Provide for renewable energy facilities (base load generation) and distribution given the spatial and landscape level impacts. Encourage reduced domestic and commercial demand despite the reduction in municipal revenue.	WCIF, 2013: To align the planning, delivery and management of infrastructure, provided by all stakeholders to the strategic agenda and vision for WC. WCPSDF, 2014 Prioritise & guide investment & infrastructure development.
Existing capacities versus future growth and densification needs to be assessed	Revise Electrical Masterplan	

3.1.3.5 Sewerage

Towns	Supplier	Capacity	Reticulation Capacity	Notes
Koringberg (W 1)	Eskom	Adequate	Adequate	None
Moorreesburg incl. Hooikraal **(W 1 & 2)**	Swartland Municipality	Adequate	Adequate	Obsolete electrical infrastructure in process of upgrading; Street lighting adequate.
Riebeek West & Ongegund (W 3), Riebeek Kasteel (W 12)	Eskom	Adequate	Adequate	Obsolete electrical infrastructure scheduled for upgrading by Eskom. Street lighting inadequate
Riverlands & Chatsworth (W 4)	Eskom	Adequate	Adequate	Street lighting inadequate
Yzerfontein (W 5)	Eskom	Limited, inadequate for planned developments; Bulk Eskom supply upgrade planned for 2016/2017.	Adequate	Development in Yzerfontein subject to: ▪ - Eskom application for increased capacity ▪ - 2nd supply line and cable Only smaller developments may continue in the short term Obsolete electrical infrastructure in process of upgrading. Street lightning adequate.
Darling (W 5 & 6)	Swartland Municipality	Adequate	Adequate	Obsolete electrical infrastructure in process of upgrading; Street lightning adequate
Kalbaskraal & Abbotsdale (W 7)	Eskom	Adequate	Adequate	Street lighting: inadequate Kalbaskraal, adequate in Abbotsdale
Malmesbury (W 8 – 11) (including Wesbank, Illingu Lethu)	Swartland Municipality	Adequate capacity in northern Malmesbury, Lack of capacity in south west of Malmesbury.	Adequate	New Eskom bulk electrical point of supply (Schoonspruit substation) essential to make provision for new developments south-west of Malmesbury. Obsolete electrical infrastructure in process of upgrading Street lightning adequate.

Elements	Directives	Applicable Legislation
Sanitation: upgrading of sewerage system; 94% of population has access to sanitation, 5% of households have no access 91.6% in rural areas)	Provide for additional sewerage infrastructure expanding or improving, keeping 500m buffer in mind Where urban development proposals will exceed infrastructure capacity, applications should be refused until the provision is made to deal with the additional loads. ▪ Provide all households with access to sanitation that meet Water Affairs' standards ▪ Maintain bulk sewage treatment capacity to provide for the long term	WCIF, 2013 is intended to align the planning, delivery and management of infrastructure, provided by all stakeholders to the strategic agenda and vision for the province WCPSDF, 2014 Prioritise & guide investment & infrastructure development. SALGA Smart City Development Maturity Framework: Smart Transport – encompasses transportation network optimization (including mixed-modal access), traffic management, logistics, and related smart mobility elements, incorporating enhanced ICT infrastructure with real time monitoring and control systems
91% Swartland Households have access to flush toilets connected to a sewerage system or network. 5.% Households have access to flush toilets connected to a septic tank. Only 3.6% households have poor or no sanitation.	Reuse grey water Provide for greywater recycling • Off-grid, small bore, dry and alternative technologies such as bio-gas (permanent occupation) or enviro-loos/biolytic filters/ventilated improved pit latrines (VIPL) (also suitable for periodic occupation) should be used. • Alternative forms of sewage disposal and treatment for new developments should be investigated with a view to minimizing the source of waste water and minimizing the pollution of surface and ground water. • All wetland ecosystems should be protected such that their ecological and storm water purification function is maintained. Water abstraction from and effluent discharge into wetlands should be prohibited.	Swartland IDP (May 2022) Review 2022 -2023: Basic Service Delivery: Maintain infrastructure to provide basic services to all citizens SALGA Smart City Development Maturity Framework: Smart Transport – encompasses transportation network optimization (including mixed-modal access), traffic management, logistics, and related smart mobility elements, incorporating enhanced ICT infrastructure with real time monitoring and control systems
Requirements and proposed new sites		
Existing capacities versus future growth and densification needs to be assessed	Revise sewerage Master Plan	

Settlements	Treatment Capacity	Pipe Capacity	Notes
Koringberg (W 1)	▪ Overloaded, must be upgraded. ▪ Oxidation dam system with insufficient capacity for current and future demand. Urgent upgrading is required.	▪ Sewer reticulation network poorly developed and must be extended. ▪ Flush sewer system is only provided in Rautenville. System has to be expanded to include the rest of the town.	▪ Capacity of the suction tank truck is not capable to accommodate future expansions.
Moorreesburg (including Hooikraal) **(W 1 & 2)**	▪ Not sufficient ▪ Formal treatment plant with sufficient capacity for the current and limited future demand. The treatment plant is old and the upgrading of mechanical and electrical components is crucial. Hooikraal does not have a flush sewer system.	▪ Not Sufficient ▪ Bulk pipelines capacity is unknown and conduction may be overloaded in the future.	▪
Riebeek West & Ongegund (W 3), Riebeek Kasteel (W 12)	▪ New treatment works, sufficient capacity ▪ Oxidation dam system with insufficient capacity for current and future demand. Urgent upgrading is required.	▪ Riebeek West: Sewer reticulation network poorly developed and must be extended. ▪ Limited flush sewer system, a high presence of septic tanks that has groundwater pollution potential.	▪ Extension of a flush toilet system, Capacity of the sewerage suction truck is not capable to accommodate future expansion.
Riverlands & Chatsworth (W 4)	▪ Actual capacity of oxidation dams is unknown ▪ Upgrading of sewerage works ▪ Maintenance on dam embankment and inlet work is needed ▪ Outlet does not comply to standards.	▪ Extension of distribution network ▪ Flush sewer system only provided in the low income housing developments in Riverlands and Chatsworth. ▪ System must be expanded to include the rest of the housing.	▪ None Riverlands and Chatsworth
Yzerfontein (W 5)	▪ None, “honey sucker” (sewerage draining truck) collections		▪ No sewage works and no flush sewer system.
Darling (W 5 & 6)	▪ Upgraded, require an additional upgrade (Require R5 million) ▪ Formal treatment plants with insufficient capacity, a new sewer treatment plant is required	▪ Bulk connector to be upgraded ▪ Bulk pipelines capacity is unknown and conduction may be overloaded in the future.	▪ Regular blockages in Darling North

Kalbaskraal (W 7)	▪ Sufficient, yet oxidation dam capacity uncertain.	▪ Sufficient ▪ Flush sewer system provided to a certain part and has to be expanded to include the rest of the development.	▪ Require maintenance on embankment and inlet.
Abbotsdale (W 7) **Malmesbury (W 8 – 11)** (including Wesbank, Illingu Lethu)	▪ Sufficient	▪ Require a detailed assessment to determine sewer main's actual capacity. ▪ Obsolete infrastructure causing regular blockages. ▪ Sewerage connector in Wesbank, area of Wistaria Street, is under pressure and must be upgraded for further developments. ▪ Upgrading of distribution network is needed. ▪ Upgrading of main connectors in Voortrekker Street from swimming pool to Bokomo Road.	▪ Bulk pipelines capacity is unknown and conduction may be overloaded in the future.

3.1.3.6 Water

Elements	Directives	Applicable Legislation
Water Resources in Swartland are: • The Berg River, the main water source for irrigation purposes. • Mountain streams, which feed into retention dams. • Bore holes for livestock and domestic use. • Water Schemes and Reservoirs.	To plan for long term water provision. The conservation of water. Conservation of water catchment areas. Maintain the quality of water. Improve the movement network along water resources.	
The Voëlvlei and Misverstand dam are the water sources for the West Coast. The West Coast District Municipality provides water to Swartland Municipality. The water allocation required by the Swartland, as is the case for the rest of the municipalities in the West Coast, is more than the allocation made to the West Coast District Municipality. Swartland Municipality has two bulk supply systems. The system from the Voëlvlei Dam services Riebeek Valley, Malmesbury, Darling and Yzerfontein as well as Abbotsdale, Kalbaskraal, Riverlands and Chatsworth. The system from the Misverstand dam services Moorreesburg and Koringberg. All settlements have reservoirs with the exception of Riverlands and Chatsworth that share a reservoir. Reservoir capacityrequired in Koringberg, Riebeek Valley, Darling and Yzerfontein. *Domestic Use* The potable water in the Swartland is obtained from water schemes such as the Voëlvlei and Misverstand Dams. Limited water supply also comes from a dam on the Paardeberg. Some farms are also dependant on the Voëlvlei Dam and the Withoogte water scheme (West Coast District Municipality Water Scheme) for domestic use and water for livestock. The water provided from the West Coast District Municipality Water Scheme provides water of good quality with the water from these schemes limited and relatively expensive. Households that have no access to water are restricted to rural areas. The norms for the provision of water in the Swartland are 25 litres of water per person per day, with water not to be carried for distances longer than 200m from the source to the home. A total 99.5% households has access to water at least 200m from their dwelling of which 83.3% has access to piped water within their dwellings and a further 15.6% have access inside their yards. The	To provide access to clean, pipe water to all households within a 200m Provide for water infrastructure such as reservoirs and water treatment plants • Implement water demand management techniques such as minimizing leaks by reducing water pressure and a stepped tariff system that effectively addresses excessive water consumption. • Develop a range of water demand management strategies for all sectors. • Encourage retrofitting of water demand management technologies into existing buildings and offer an incentives program.	SA Const, 1996 Structure spending & planning Support safe & healthy environments PSDF, 2014 Prioritise & guide investment & infrastructure development. WCIF, 2013 The Western Cape infrastructure framework (WCIF) is intended to align the planning, delivery and management of infrastructure, provided by all stakeholders to the strategic agenda and vision for the province

exception is Chatsworth and Riverlands where 47% and 20% of households respectively obtain water from communal points. *Water for Industrial Use* Water for industrial areas is obtained from the existing municipal water schemes in the Swartland.	• Educating consumers on water wise initiatives including gardening across the Municipality.	
Water recycling: Currently there are no forms of water recycling of desalination plant operating within the Swartland to be used for domestic or livestock use. The grey water from the various Waste Water treatment plants are used for irrigation purposes on the Golf courses in Malmesbury and Darling and for the irrigation of vineyards around Malmesbury.	Rainwater harvesting, grey water recycling and similar technical enhancements such as low flow shower heads, dual flush toilets and water wise gardens should be encouraged for new residential, commercial and community projects. Use water wisely and sparingly Investigate alternative water supply options for the Swartland to address drought conditions. Re-use Grey water from the WWTP for irrigation purposes. Support the re-use and recycling of water.	SALGA Smart City Development Maturity Framework: Smart Transport – encompasses transportation network optimization (including mixed-modal access), traffic management, logistics, and related smart mobility elements, incorporating enhanced ICT infrastructure with real time monitoring and control systems
Climate change: Water & Sanitation: - Increased demand for water for domestic purposes and for sewerage capacity. - Potential for more intense wet/dry cycles reduces water availability.	Provide for water conservation at source, use and wastewater point including efficient maintenance and management of water infrastructure Provide for alternative solutions for water and sewerage.	
Quality		
Existing capacities versus future growth and densification needs to be assessed	Revise Water Master Plan	

Settlements	Bulk Water Supply	Supply Capacity	Reticulation Capacity
Koringberg (W 1)	▪ Sufficient ▪ No capacity for extension ▪ 250 kl reservoir must be built to provide for storage capacity.	▪ Secondary Chlorination at reservoirs must be implemented.	▪ Poorly developed network, small diameter pipes, low pressure and flow condition and open ring mains. ▪ Sections of the water reticulation network are obsolete and must be upgraded. ▪ Extend Water provision to all properties.
Moorreesburg (including Hooikraal) **(W1 & W2)**	▪ Sufficient ▪ No capacity for extension	▪ Secondary Chlorination at reservoirs must be implemented.	▪ Obsolete infrastructure, pipe breakages, leaking valves, leaking hydrants. ▪ Poorly developed network, shortage of cut-off valves, system to be upgraded. ▪ Extend Water provision to all properties. ▪ Upgrading of water pump stations (installation of additional pump) is required to provide for the demand
Riebeek West & Ongegund (W 3), Kasteel (W12)	▪ Sufficient ▪ No capacity for extension ▪ Additional reservoirs are required to provide for storage capacity	▪ Secondary Chlorination at reservoirs must be implemented. ▪ Poor condition of Ongegund reservoir and pump station – must be upgraded.	▪ Poorly developed network, small diameter pipes, low pressure & flow condition and open ring mains. ▪ Sections of the water reticulation network are obsolete and must be upgraded ▪ Extend Water provision to all properties. ▪ *Reservoirs in Riebeek-Wes are leaking, to be replaced.*
Riverlands & Chatsworth (W4)	▪ Require new pumping gear	▪ Secondary Chlorination at reservoirs must be implemented.	▪ New reservoir capacity. ▪ *Extend Water provision to all properties*
Yzerfontein (W 5)	▪ Sufficient ▪ No capacity for extension	▪ Secondary Chlorination at reservoirs must be implemented.	▪ New reservoir capacity required.
Darling (W 5 & 6)	▪ Sufficient ▪ no capacity for extension	▪ Reservoir capacity must be increased for further developments.	▪ Poorly developed network, small diameter pipes, low pressure and flow condition (especially in industrial area and open ring mains. ▪ Sections of the water reticulation network are obsolete and must be upgraded (between the pumping station and reservoirs are crucial).

Kalbaskraal (W 7)	▪ Sufficient ▪ No capacity for extension	▪ Reservoir capacity must be increased for new developments. ▪ Secondary Chlorination at reservoirs must be implemented.	▪ New reservoir capacity. ▪ Extend Water provision to all properties. ▪ Parts of the distribution network consist of galvanised pipes and must be replaced.
Abbotsdale (W 7) & Malmesbury (W 8–11) (including Abbotsdale, Wesbank, Illingu Lethu)	▪ Sufficient, new reservoir	▪ Secondary Chlorination at reservoirs must be implemented.	▪ Sections of the water reticulation network are obsolete and must be upgraded (Dalsig and Bergsig). ▪ Extend Water provision to all properties.

3.1.3.7 Housing

Elements	Directives	Applicable Legislation
A comparison of the current verified housing backlog (demand) per typology as per the Swartland waiting lists for 2019 with the 2020/2023+ pipeline (supply) is tabulated below: The greatest need for housing exists in Malmesbury & Abbotsdale (backlog of 7500), Moorreesburg, Darling, and Riebeek Valley. GAP housing is needed in Malmesbury/ Wesbank/ Ilinge Lethu, Abbotsdale, Kalbaskraal, Darling/ Nuwe Dorp, Chatsworth & Riverlands, Yzerfontein, Riebeek Kasteel/ Esterhof/ Riebeek West/ Ongegund, Moorreesburg/ Rosenhof and Koringberg. Simultaneously, Malmesbury, as well as Abbotsdale and Darling, are prioritized to provide GAP housing. As a forerunner, a GAP pilot project was implemented in Abbotsdale to determine its viability.	Provide for different housing typologies Swartland Municipality committed to develop the most suitable site according to the following settlement planning principles: • Locate activities (residential, transport, work, recreation, etc.) so that at least 50% of them are in walking distance; • Locate most frequented activities in the most central / accessible localities, e.g. industrial and commercial; • Use all well located vacant land, i.e. within 1 to 2 kilometres of urban centres; and, Locate all future residential areas within walking distance of urban centres where space permits. Ilinge Lethu (W9) and Chatsworth (W4) have the highest need for subsidized housing, while Moorreesburg (W2), Abbotsdale (W7) and Malmesbury (W8-11) have the highest need for GAP housing.	MSA, 2000 Provide access to quality and affordable services WCIF, 2013 The Western Cape Infrastructure Framework (WCIF) is intended to align the planning, delivery and management of infrastructure, provided by all stakeholders to the strategic agenda and vision for the province SA Const, 1996 Structure spending & planning Support safe & healthy environments Provide access to housing, education & health care.

2020 Waiting List	Housing Backlog: Subsidized	Affordable/ Flats / GAP	Pipeline & 2020 to 2023
Abbotsdale	913	271 (Flats) 46	550 (Social) 56 FLISP
Chatsworth	664	26	130 UISP
Darling	2064	622	46 FLISP
Koringberg	182	-	300 SubS
Kalbaskraal	534	-	570 SubS
Malmesbury (Saamstaan) Ilinge Lethu	3 483 3 104	(Affordable / GAP) 616 (Wesbank Flats) 292	710 (Social) 1435 Subs
Moorreesburg	1 415	-	115 UISP 1150 Subs
Riebeek Kasteel	1 171	-	435 UISP 500 SubS
Riebeek West	755	-	15 SubS
Riverlands	227	-	57 SubS
Yzerfontein	7	-	0
Totals	14 519	1 873	

Migration: Yzerfontein, Darling, Riverlands and Malmesbury are the settlements with the most (20% and more) households that did not move in the last five years. Contrary, Yzerfontein and Chatsworth are the exceptions as more households (22.4%) and (14.4%) moved into these settlements than those staying there for 5 years and more.

- There are 2 416 agricultural households in rural Swartland (StatsSA 2011) representing 6% of total Swartland households. The migration trend of agricultural households is low and can be attributed to the majority of farms practising extensive agricultural cultivation and being home to a few households per farm. Abbotsdale and Riebeek Kasteel are the preferred settlements for farmworkers to relocate.
- Overcrowding is the biggest challenge. The towns with the highest number of households living in informal backyard structures are Malmesbury and in particular Wards 9 and 11 (Ilinge Lethu and Saamstaan) followed by Abbotsdale and Kalbaskraal (Ward 7). A potential 33% of the households on the waiting list in Abbotsdale and Kalbaskraal are accommodated in formalised accommodation that is secondary to the main dwelling on the property however is unlikely to be connected to services.
- There is one informal settlement, Silvertown. There are informal precincts in Malmesbury (Phola Park), Moorreesburg, Chatsworth and Riebeek Kasteel. In Phola Park there are informal structures on Erven 7456 and 9895 and in Moorreesburg on Erf 3715. Formalising the informal structures in Chatsworth, Moorreesburg and Riebeek Kasteel has been prioritised.

To date some of the backlogs were addressed in Malmesbury, Abbotsdale, Darling and the Riebeek Valley and a total of 6101 houses were built by 2014. From 2014 to 2020 another 1243 houses were built and 1094 serviced sites were provided. A budget of R346 830 963 was spent to provide the 7344 units and 1094 serviced sites. The table below provides a breakdown of the 2014-2020 provision per settlement:

Housingunits		
Darling	1323	R56193144.00
Abbotsdale	688	R57002500.00
Riebeek Kasteel	512	R17600626.00
Riebeek West	413	R36885325.00
Kalbaskraal	272	R7155606.00
Saamstaan,Illinge Lethu	2569	R103725192.00
Riverlands	594	R42132231.00
Moorreesburg	813	R14952300.00
Koringberg	143	R2599000.00
ServiceSites		
Riverlands	36	R559400.00
Moorreesburg	82	R330000.00
Phola Park	976	R45636120.00

The land required (based on applied growth rate) for future settlement development, tabulated per housing typology, follows:

Wards Land proposed as per SDF for housing:	1&2 Moo & Kor	3 Rie-W	4 Riv& Cha	5&6 Dar & Yze	7 Kal & Abb	8–11 Mal	12 Rie-K
Subsidized	51.64	5.11	81.75	47.06	13.15	153.55	7.04
Affordable/GAP	2.62	8.9	0.49	8.13	16.86	123.40	0
Private	5.87	19.69	3.3	256.81	13.875	461.63	45.33
Land (ha) proposed: 5years	42.8	18.9	27.9	76.7	50.0	201	40.15
Land requirements 5 Years	55.64	24.54	36.22	64.65	64.98	261.29	52.2
Land requirements 20 Years	323.8	68.7	122.8	191	106	1313	76.6
Land proposed per SDF	60.13	33.7	85.54	312	43.88	738.58	52.37
Oversupply (Shortfall)	(264)	(35)	(37)	121	(62)	(574)	(52)
Total							(875)

The immediate housing demand (waiting list 2023) is 16 139, of which the current 5-year project pipeline (2023 -2026) plan is to deliver 2 338 serviced sites and 500 sites and 507 units. The units will address approximately 17.6% of the demand, whilst 7344 units and 1094 serviced sites had been delivered by Swartland Municipality over the last 23 years (1997 -2020).

The additional projected housing need in the medium term (5 – 10 years) would be 26 878. In the longer term, 10 – 20 years, the growth rate has to be reconsidered given trends in urbanization and world economics.

The table below summarises the extent of land earmarked in 2020 for residential development in each settlement for the next 20 years.

This calculation should be confirmed once the Human Settlement Strategy has been confirmed and the number of erven to be developed has been established.

Four population projections were done to determine High and Low Growth Scenarios to determine the year in which more land than allocated in the SDF would be required. Alternatively, the projections determined in whichyear bulk services upgrades are required to service future developments. These include projections according to two growth rates i.e. 2011 Census (4.53%), 2017 Municipal Census Survey (4.2%), SDF growth (i.e. population growth as per proposed residential development) and firm development growth (i.e. conservative estimates of proposed development that has finance secured).

The most conservative projections (or the longest period) of the four scenarios for each settlement were used to determine when additional developable land and services capacity are required.

The likelihood of housing provision is driven by services capacity. The overview of Swartland's services capacity highlights the financial challenges Swartland will have to address before delivery can take place.

Swartland IDP Review 2022 - 2023

An Efficient, effective, responsive and accountable administration

Housing: Effective approach to integrated human settlements and improved living conditions of all households

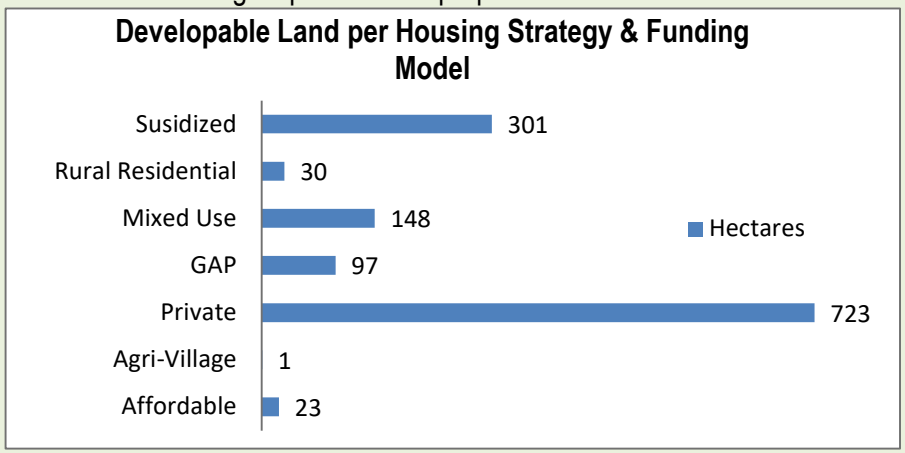
Sound Financial Management: Adherence to all laws and regulations applicable to LG

Effective stakeholder engagements to promote civic education

SPLUMA, 2013, Address historical spatial imbalances, apply principles of sustainable development

Settlement	Extent	Settlement	Extent
Abbotsdale	36.15ha	Moorreesburg	53.44ha
Chatsworth	38.59ha	RiebeekKasteel	52.37ha
Darling	126.34ha	RiebeekWest	33.7ha
Malmesbury	740.13ha	Riverlands	46.95ha
Kalbaskraal	7.36ha	Yzerfontein	185.66ha
Koringberg	6.69ha		

Land for future growth is slightly underprovided for by 120ha. While sufficient provision was made in Malmesbury and Darling for future expansion, there is a lack of land in Moorreesburg as per the SDF proposals.



The Graph illustrates the extent of land provided for according to each housing funding model over the next 20 years.

Property Market: The demand for urban properties increased in Malmesbury and Yzerfontein as they are located in close proximity to Cape Town and an alternative to many people migrating from elsewhere into the Swartland. Properties are high in Demand in Darling and Riebeek Valley too.	The highest average urban property prices are found in Malmesbury.	

An overview of housing provision to households with an income of less than R15 001 in the Swartland settlements follows in table 11.
The table reflects per typology, housing:
a) Planned, for which funding has been secured (Provision) as per approved housing pipeline and expressed as a percentage of the Backlog (BL),
b) Remaining on the waiting list (Demand),

c) Needed and expressed as growth projected (as per Census 2011 growth rates) having secured provision deducted. The demand for subsidized housing in Abbotsdale, Darling, Kalbaskraal, Koringberg and the Riebeek Valley is not met. However, the shortfall in Abbotsdale is made good in Malmesbury. The need for GAP housing in Chatsworth and Darling is not met. When considering the need for subsidized and GAP housing, it is not met in all the Swartland settlements. Yet overall, Swartland provided only slightly fewer houses than the demand for housing, as 14 111 units are being provided while 14 519 households are registered on the waiting list. Malmesbury, Abbotsdale, Kalbaskraal and Moorreesburg are the best prepared to supply in the demand according to the Settlement Readiness Ranking
Informal settlements: Silvertown adjacent to Chatsworth is an informal settlement in Swartland.

	Potential units & units needed till 2025											
	Subsidized				**UISP/ Social Housing**				**GAP**			
Settlement	As per pipeline (Provision)	% of BL	Waiting List Demand Balance	Need Growth	As per pipeline (Provision)	% of BL	Waiting List Demand Balance	Need Growth	As per pipeline (Provision)	% of BL	Waiting List Demand Balance	Need Growth
Abbotsdale	224	25	(689)	Incl. Mal	-0	0-	0-	Incl. Mal	416	120.6	71	Incl. Mal
Chatsworth	1524	230	860	2050	0	0	(130)	0	46	47	(14)	799
Darling	1882	91.2	(182)	1407	0	0	0	0	203	32.7	(419)	1152
Kalbaskraal	183	34.3	(351)	491	0	0	00	0	5	0	5	163
Koringberg	34	19.7	(148)	259	0	0	0	0	68	0	68	156
Malmesbury	7169	108.8	582	24396	0	0	0	0	6628	346.3	5270	8616
Moorreesburg	2032	143.6	617	3028	Incl. Subsi	0	(115)	0	0	0	0	2594
Riebeek Kasteel	282	24.1	(889)	1346	0	0	(435)	0	0	0	0	827
Riebeek West	204	27.1	(551)	Incl. Kast	0	0	0	Incl. Kast	190	0	190	Incl. Kast
Riverlands	576	253.7	349	Incl.Chats	0	0	0	Incl Chats	0	0	0	Incl. Chats
Yzerfontein	0	0	(7)	0	0	0	0	0	0	0	0	0
TOTAL	14110		(409)	33153	0	0	(680)	0	7556	0	5171	14583
Need Subsidized & UISP from 2011 - 2025 Subsidized supplied 2011 – 2020 Shortfall					33 153 14 110 19 043				Need GAP from 2011 - 2025 GAP to be supplied 2014 – 2025 Shortfall			14 583 7 556 7 072

Table 21: Need, Demand and Provision till 2025 Overview, Swartland

3.1.3.8 Amenities

Elements	Directives	Applicable Legislation
Social Amenities, Cemeteries The location of cemeteries throughout the Municipality. There are cemeteries in.		
The municipal IDP noted that sufficient capacity exists but that additional capacity should slowly be allocated as certain cemeteries are reaching capacity. The following challenges were noted in the IDP: • Vandalism and plundering of graves/tombstones; and, • Locating and identifying additional land.	• Facilitate the ongoing maintenance of cemeteries throughout the municipality especially relating to security and fencing. • Ensure that capacities of cemeteries are monitored on an on-going basis to ensure additional space requirements are timeously addressed. • The cited sub-section dictates that there shall be no residential (habitable) buildings within 500m of any burial site. The requirement of this regulation could hamper efforts at densification in urban areas	MSA, 2000 Provide access to quality and affordable services WCIF, 2013 Align the planning, delivery and management of infrastructure, provided by all stakeholders to the strategic agenda and vision for the province Provision standards for social amenities: • 1 church / 1 000 persons – 0.015 – 0.3ha • 1 community hall/ 10 000 persons/ 2 500 dwellings – 0.2ha • 1 police station/ 25 000 persons/ 6 250 dwellings – 0.1ha
The Minister of Health has, in terms of Section 68(1)(b) read with Section (90(4)(c) of the National Health Act 2003 (Act 61 of 2003), made regulations relating to the management of human remains (Government Gazette R363, dated 22 May 2013). Section 15(2)(b) of the mentioned regulations has very serious implications. The mentioned sub-sections reads as follows: "All burial sites must comply with the following environmental requirements- (a) ….; (b) be located at least 350m from ground water sources used for drinking purposes and at least 500m from the nearest habitable building; (c) ….; "		
Cultural facilities:The provision of social and cultural facilities in Malmesbury, Moorreesburg and Darling complies with the compulsory norms. Though population growth in Malmesbury indicates that a Performing Arts Centre will soon be a requirement, library services for special categories have to be investigated. The provision of social and cultural facilities in the remote villages complies with discretionary norms with the exception of library services in Kalbaskraal, Koringberg and Yzerfontein.		
Recreation Facilities:Overall Malmesbury and Abbotsdale, Moorreesburg and Darling comply with the recreation provision norms with the exception of seating		

at the grassed fields that have to increase. All villages require single hard surface courts. Level surface playing fields are required in Chatsworth, Riverlands and Riebeek West and Kasteel.

Sport Facilities

- Rugby fields: All towns in Malmesbury, except Chatsworth, consist of five rugby fields with the conditions of these fields that differ. Abbotsdale and Malmesbury each have 3 rugby fields with dressing rooms. The rugby fields in Riebeek Valley have soil areas and the field in Riverlands is not in a good condition. Moorreesburg consists of 5 rugby fields.
- Soccer: Abbotsdale has 1 soccer field and Malmesbury has 2.

Towns	Athletics	Cricket	Hockey	Netball	Tennis	Squash	Swimming pool	Bowling	Golf course	Shooting range
Malmesbury	3	1	3	8	9	2	1	2	1	2
Moorreesburg	1	1	1	2	3	2	1	1	1	1

A variety of Recreational Facilities other than sport facilities are listed below:

Towns	Recreational facility
Chatsworth	Nature Reserve
Ganzekraal	Caravan park with Chalets
Koringberg	Stroll routes and hiking trail
Malmesbury	Caravan park with Chalets Mountain bike route (Paardeberg)
Misverstand	Water sport
Moorreesburg	Caravan park with Chalets
Riebeek Valley	Stroll routes and hiking trail
Riverlands	Nature Reserve
Yzerfontein	Caravan park

Social Services: Malmesbury, Abbotsdale and Moorreesburg comply with the compulsory and recommended social services norms. Safe houses/ trauma centres and places of safety are required in Malmesbury and Abbotsdale.

Although the remote villages need SASSA Office services (mobile) & ICT access points, they comply with the remaining compulsory and recommended social services norms.

Malmesbury has 2 prisons, Riebeek-Kasteel has 1 Prison,

Civic Facilities: Malmesbury complies with the compulsory and discretionary norms for civic facilities. Moorreesburg, Darling and the villages do need access to periodic Home Affairs, eGov Integrated services or Labour offices (provided by national government) and solid waste recycling facilities.

Churches were one of the first community facilities that were built when settlements were established. Church towers have become part of the visual landscapes of all rural towns. There are 43 churches, 3 of them with historical value, present in Swartland. The planning norms for churches (1 church for every 1000 people) are met.

Towns	Churches	Comments
Abbotsdale	1	
Chatsworth	4	
Kalbaskraal	7	5 premises; 3 churches in formal buildings
Malmesbury	18	3 historical value
Riebeek-Kasteel	2	
Riebeek-Wes	8	
Riverlands	3	2 premises, only 1 is utilised

3.1.3.9 Heritage

Elements	Directives	Applicable Legislation
Buildings older than 60 years are graded in accordance with the three-class rating system of heritage resources, as set out in the National Heritage Resources Act, namely Grade 1, 2 and 3. Heritage Western Cape's categorize Grade 3 or local sources in three grades, namely Grade 3A, 3B and 3C. Eight hundred (800) and more preservation worthybuildings are in the Swartland with the highest concentration of buildings located in the towns of Malmesbury, Moorreesburg, Darling, Riebeek West and Riebeek Kasteel. While the predominant number of heritage resources is residential buildings, there are also a range of commercial, institutional, social and industrial buildings that have been identified. A summary of the distribution of preservation worthy buildings and proposed ratings of buildings in the study area are summarised in the table below:	Preserve the following Swartland Heritage Themes 1. West Coast paleontological fossil record. 2. Pre-colonial archaeology and early inhabitants of the area, early pastoralist sites at Kasteelberg. 3. Early colonial history and settlements; agriculture in well-watered fertile valleys and foothills late C17th early C18th. 4. Early contact/ contestation between settlers and with indigenous peoples; displacement of San and Khoekhoe. 5. Cultivation and agricultural production; history of wheat farming and associated secondary industries. 6. Slavery and labour; Farm yard and agricultural production to mid C19th; sites of slavery including 1808 Slave Revolt. 7. Religion; C19th Church towns. 8. Routes and Transport; mountain passes- Botman's Kloof; early cattle and wagon routes, outspans; Railway development in C19th, associated stations and development. 9. Military History; VOC outposts; southern-most point of SA Anglo-Boer War action, WW2 installations.	NHRA, 1999 Sections 30 (5) z7 31 supports integration of heritage management and planning functions. Heritage resources that need to be protected includethe built environment and the landscape and other prominent natural features which form an important part of the cultural resources.

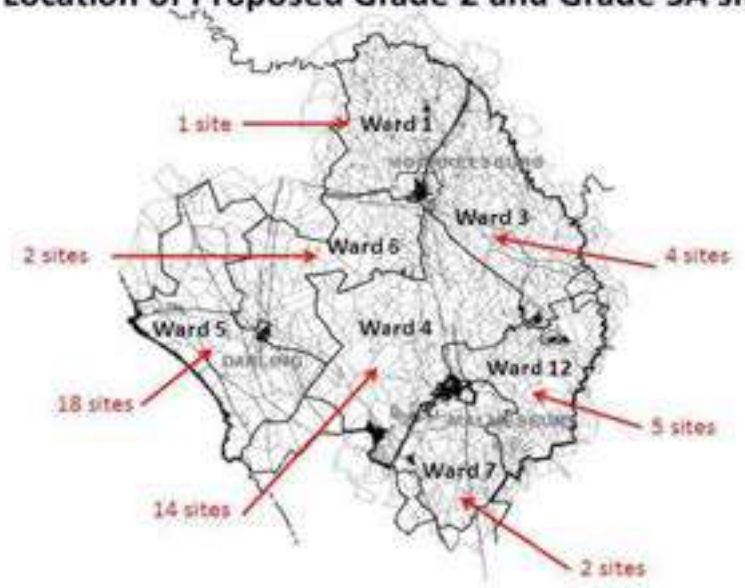
Town	Grade 2	Grade 3A	Grade 3B	Grade 3C	Total
Malmesbury	5	25	112	160	302
Moorreesburg	1	9	73	112	195
Darling		11	35	67	113
Riebeek West		16	18	34	68
Riebeek Kasteel	1	5	10	62	78
Koringberg			13	20	33
Yzerfontein				5	5
Abbotsdale		1	2	3	6
Kalbaskraal			2	9	11
Chatsworth			2		2
Riverlands					0
Total					813

	10. Regional Architecture; Cape Dutch, Georgian, Victorian, Cape Revival, Art Deco; farm yard, 'sandveld' architecture and Swartland barns and veranda houses of the early C19th. 11. Outstanding Scenic Beauty; undulating wheat and grazing lands of the Swartland; semi-arid landscape of the Sandveld. 12. Recreation and Tourism: destination places, themes and routes; wild flowers, olives, wine and other places of cultural interest and scientific interest.	
There are a number of areas of heritage value identified on town level in terms of preservation worthy buildings, the proximity of other similar buildings and the epitome of a town landscape character, particularly in Malmesbury, Moorreesburg, Darling, Riebeek West, Riebeek Kasteel and Koringberg. To protect these special qualities and areas a Heritage Overlay Zone and Special Area Overlay Zone are proposed. The total number of proposed areas can be summarized as follows: **Town** / **Heritage Overlay Zones** / **Special Areas** Malmesbury: 2 / 2 Moorreesburg: 1 / 1 Darling: 1 / 6 Riebeek-Wes: 1 / Riebeek-Kasteel: 1 / Koringberg: / 2	Consideration needs to be given to - cultural landscapes, heritage areas and sites, form giving elements of scenic rural landscapes, and the relationship between the natural and cultural environment. The natural environment in the Swartland forms the basis of various activities that include tourism, conservation, recreation and agriculture. Development in the rural and natural areas need to: 1. Exploit (develop) economic opportunities in a sustainable manner; 2. Protect the sensitive natural environment and agricultural resources from inappropriate and opportunistic development; 3. Create (change to) sustainable rural livelihoods.	Provide for the conservation of cultural & heritage resources as these resources: • provide an insight into the past & give a sense of social and individual identity to the inhabitants of an area. (forming an important connection to the people's history and different cultural backgrounds in the area). • support and explanation of the diverse cultures in the region and contribute to a better understanding of the cultural diversity.

The table depicts the different number of graded heritage resources in Swartland:

Ward	Grade 2 (PHS)	Grade 3A	Grade 3B	Grade 3C	No Grading	Total
1	0	1	53	22	4	80
3	1	3	63	30	4	101
4	0	14	46	20	1	81
5	5	13	15	12	1	46
6	0	2	38	37	2	79
7	0	3	35	9	1	48
12	0	5	66	24	0	97
Total	6	41	316	156	13	532
%	1	8	59	29	3	100

Location of Proposed Grade 2 and Grade 3A sites



Protect the Swartland heritage resources with vulnerabilities against potential impacts:

- Infrastructural development: highways, power lines, wind and solar farms.
- Agricultural practices: tunnel farming, bird netting.
- Agricultural operational changes: re-location of farm labour to housing settlements, larger economic units leading to consolidation /abandonment of smaller farms / redundancy or unsuitability of existing structures / lack of maintenance of heritage fabric and resources.
- Inappropriate development including suburban sprawl, walled or security-fenced village/ townhouse and industrial development; unsympathetic alterations and additions to heritage structures; filling stations and refreshment outlets or large industrial type structures (sheds and wineries) poorly sited relative to scenic routes, ridgelines etc.
- Removal of benign or non-invasive “alien” trees, avenues and plantings. is identified as follows:

Annexure 3 Rural Landscapes

The identified landscapes are described below:

Landscapes	**Wilderness Landscapes: Coastal**		
Location	Existing conservation based development along the West Coast, along the western boundary of the Swartland, in and around Yzerfontein, Jakkalsfontein, Rondeberg and Grotto Bay provides the opportunity for a continuous conservation zone along the West Coast. This will strengthen existing ecological systems and such a zone is proposed from the northern boundary of the Swartland next to the West Coast National Park to Grotto Bay on the southern periphery of the Swartland, and further south towards Blaauberg Reserve in the City of Cape Town Municipality. Various supporting land uses are proposed in this area including conservation, coastal and heritage tourism, resorts and recreational accommodation.		
Values	Economic opportunities (tourism), Sensitive habitat, Ecosystem services, Sense of place	**Associated risks**	Coastal erosion, Storm damage
Landscapes	**Wilderness Landscapes: Mountains**		
Location	The hill landscapes in the Swartland include two prominent areas. The area along the western side from Darling towards Riverlands in the south, known as the Darling Hills and including Kapokberg, Contreberg, Dassenberg as well as the Pella and Riverlands Nature Reserves form a continuous landscape form which includes threatened habitat areas. The second prominent area is on the eastern side and stretches from Kanonberg in the north to Paardeberg in the south, and includes Kasteelberg and Porseleinberg. These areas can be utilised for conservation and eco-tourism.		
Values	Economic opportunities (tourism), Sensitive habitat, Ecosystem services, Sense of place	**Associated risks**	Microclimatic influence, Steep slopes
Landscapes	**Waterways and Connections**		
Location	The Berg River forms the eastern boundary of the Swartland and is a very important water resource for agricultural, sport, recreational and domestic use. The river provides an important corridor for agricultural and tourism development. Development needs to be sensitive to the environment as well as sustainable.		
Values	Critical resource, Economic opportunities (tourism), Sensitive habitat, Ecosystem services, Sense of place	**Associated risks**	Water availability, Flooding, Pollution
Landscapes	**Connection Routes and Corridors**		
Location	N7 is an important national route to the north as well as being a regional transport corridor. Malmesbury and Moorreesburg are on this route, which also provides a link to the Cape Metropole. This link to the market provides support for further industrial development. The rural area between Malmesbury and Kalbaskraal located on both sides of the N7 has been identified as part of the Intensive Rural Development Corridor. This area is known for existing smallholdings including Tierfontein and Groenerivier. This corridor is supported by a good connection with the N7, quality ground water and sandy soils. The corridor supports more intensive and mixed usage which allows for the diversification of agriculture supported by residential, commercial, tourism uses and continuous open space systems along the Diep River. These proposed uses will not only support the economic viability of the area but will also allow for a product/unique handwork route along the N7 to stimulate the local tourism industry. Proposed uses should limit the potential impact on the environment, and specifically impact on the groundwater quality.		
Values		**Associated risks**	
Landscapes	**Agricultural Landscapes**		

Location	The largest area within the Swartland is utilised for agricultural production that include the cultivation of grapes, olives, stone fruit, canola, various grains, wheat, grazing, dairy, intensive poultry, piggeries, beef and sheep. It is well known for its extensive wheat production being a winter rainfall region. The agricultural sector plays an important role in the local economy and should be developed in a sustainable and responsible way which includes allowing for diversification to ensure economic sustainability. This diversification of uses includes resorts, recreation, tourism, alternative energy sources, mining, land reform and intensive forms of agricultural production and processing as well as related support service industries for the agricultural sector.		
Values	Critical resource, Food security, Employment	**Associated risks**	Ecological degradation, Water pollution
Landscapes	**Social Focus and community landscapes**		
Location	The focus of urban related development should be in the identified urban areas. Private and public investment will improve the economic and social opportunities in these areas to allow for growth and more effective provision of services to the larger community. Support sustainable communities through: • Urban renewal and economic renewal • Development of human resources through training and support • Neighbourhood development • Planning, upgrading, maintaining and restructuring of social and engineering infrastructure • Sustainable urban management, and • Improvement and maintenance of transport and roads		
Values		**Associated risks**	
Landscapes	**Cultural historical landscapes**		
Location	The overriding characteristic is the broad expansive nature of the landscape, particularly to the west within which an intense pattern of agricultural subdivision has taken place and corresponding hierarchical nodal patterns of settlements. These range from regional centres to villages and farms that have developed in response to water resources, topography and movement routes. The different types of landscapes in the Swartland are explained in the Rural Heritage Survey as an Addendum to the SDF and include Fossil landscapes in Yzerfontein and surrounds, Traditional Hunting and Grazing Grounds in agricultural areas, Colonial-Indigenous trade with VOC-outposts near Yzerfontein and Darling; and finally the Berg River which was a place of increased contact and contestation during the latter half of the 17th century when it formed the old eastern boundary of the Cape settlement. Networks of Historical Routes between settlements include the R27, linking the coastal settlements, which has its origins as an old cattle route between Cape Town and Saldanha Bay, and the N7 which links the regional centres of Cape Town, Malmesbury, Moorreesburg and Piketberg which has its origins in the 19th century route to the interior. The railway lines also had a major influence in the establishment and growth of settlements with Koringberg and Kalbaskraal that have their origins as railway sidings. Agricultural production landscapes. The earliest loan farms in the region date back to the 18th century, with production patterns that left their distinctive mark on the landscape. Other historic influences in this form include slavery (layout of the farm yard and establishment of mission stations), religion (towns within the regions were established as church towns with other features within the historic towns the “tuinhuise” or “nagmaalhuise” forming a small scale residential precinct close to the church) and water (influencing settlement patterns of towns and farm homesteads).		

Spatial guidelines how to treat the Swartland landscape follow, informed by spatial elements shaping Swartland's form, their locality and development potential.

Natural Spatial Elements shaping the Swartland Form			
Spatial Elements	**Locality**	**Development potential and restrictions**	**Spatial guidelines** (from: *Ecosystems Guidelines for Environmental Assessment in the Western Cape by Fynbos Forum)*
Mountains (Mountain and Fynbos Ecosystems)	Paardeberg, Kasteelberg, Kanonberg, Swartberg, Dassenberg, Contreberg, Kapokberg, Klipberg, Porseleinberg, Neulfontein Hill and Koringberg are all prominent hills within the Swartland landscape.	• Expansive views • Steepness of slopes • Sensitive habitats • Potential for hiking trails and overnight accommodation • Source for resort and recreational use	• Nodal development with fire trails as part of development footprint • Lower lying fynbos needs to be connected • Prevent development that fragments ecological corridors • Mountain tops that are exposed should not be used for telecommunication masts, 4x4 routes or other intrusive infrastructure • Hiking trails should be developed and maintained in such a way as to prevent erosion
Rivers (Freshwater ecosystems)	Berg, Dwars, Modder, Diep, Groen, Salt, Brak are all prominent river systems in the Swartland.	• Flood risk along rivers • Sensitive habitat • Use of water for irrigation and recreational use • Sources for resort and recreational use	• Allow for adequate buffer areas along rivers and drainage lines • Spatially indicate existing and historical linkages between wetlands, drainage lines and rivers including groundwater information where relevant. Linkages should be maintained and recovered where possible • Continuous river corridors facilitate movement of animals and vegetation distribution across inland and coastal gradients
Wetlands (Freshwater ecosystems)	Burgerspan, Saltpan, Dwars, Rooipansfontein, Koekiepan and Radyn are relevant wetland areas.	• Restrict development around these areas • Maintain setback • Sources for resort and recreational use	• Wetland areas should be demarcated before specific planning for development commences • Demarcation should be done during the wet season • Allow for adequate buffers along rivers and drainage lines • Link smaller wetlands with open space corridors • Soft surface open space areas should be used as buffers around wetlands in development areas • Allow land uses and developments that allows for filtering function around wetlands
Formal and Informal Conservation areas	**Formal:** Riverlands, Kasteelberg, Paardeberg Reserve, Pella Nature Reserve. The adjoining West Coast National Park in Saldanha Municipal area on the north western periphery that impact on West Coast Biosphere Reserve. Dassen Island Nature Reserve **Informal:** *Jakkalsfontein, Tygerfontein, Rondeberg,*	• Development to be environmentally sensitive • Development that supports natural resources.	• Spatially identify formal and informal conservation areas.

	Grotto Bay, Hans Gift and Riebeeks River.		
Arable Land	Approximately 85% of the municipal area represents arable land	• Conservation of agricultural resources • Support diversification in agricultural sector	• Identify the extent of cultivated area
Beaches and Dunes	West Coast beaches including Grotto Bay, Ganzekraal, Jakkalsfontein, Tygerfontein, Yzerfontein, and Dassen Island.	• Conservation of dunes and ocean life	• Development setback lines must be strictly enforced to protect developments against the following coastal processes o The impact of successive storms; o Coastal movement; o Global rise in sea level; o Fluctuation of natural coastal processes. • Development setback lines need to consider biodiversity and ecosystems • The removal and fragmentation of indigenous vegetation of dune areas must be prevented • Precautionary principles must be strictly enforced with the installation of infrastructure below the high water mark • Ban of vehicles from dunes and beaches areas

Man-made Elements Shaping Swartland Spatial Form			
Spatial Elements	**Locality**	**Development potential and restrictions**	**Spatial guidelines**
Movement Infrastructure: Main Road	N7, R44, R45, R46, R304, R311, R315, R307 and the R27	• Improve mobility in region.	• Infrastructure designed and placed in areas that would have limited impact on the environment. • Infrastructure in coastal areas should consider the coastal processes to limit potential impact
Railway line and Stations	Bellville-Malmesbury-Bitterfontein railway line, the Kalbaskraal-Saldanha railway line and the Bellville-Porterville railway line	• Improve mobility • Use as an alternative means of transport for people and goods	• Infrastructure designed and placed in areas that would have limited impact on the environment • Infrastructure in coastal areas should consider the coastal processes to limit potential impact
Built Areas: Existing Settlements	Malmesbury, Abbotsdale, Moorreesburg, Darling, Yzerfontein, Koringberg, Ongegund, Riebeek West, Riebeek Kasteel, Ruststasie, Kalbaskraal, Chatsworth and Riverlands.	• Urban-related development should be concentrated in urban areas. • Improve service delivery in urban areas.	*See settlement proposals*

Annexure 4 Malmesbury Priority FPSU Projects

West Coast Rural Development Plan Malmesbury Priority FPSU Catchment Projects				
Project Name	**Project Description**	**Branch**	**Budget Year**	**Budget**
FPSU Site Identification and formalisation	1.Land identification 2. Determine ownership. 3. Formalise agreements	Local Municipality West Coast District Municipality RD & LTA	t.b.d	Business Plan
Poultry Belt Development	Investigate the requirements and needs of emerging farmers to support the development of the area to the south of Malmesbury as a "poultry belt"	NARYSEC/ WCDoA, REID	t.b.d	Business Plan
Small Stock Production Increase	Support programmes and training to increase small livestock production, animal health and farm environmental performance:	NARYSEC/ WCDoA	t.b.d	Business Plan
Starter production Infrastructure-Feasibility	Investigate the provision of / or access to "starter" production infrastructure units (poultry houses, piggeries) for small-holding and peri-urban emerging farmers and community-based groups.	NARYSEC/ WCDoA	t.b.d	Business Plan
Capacity Building and Training for emerging farmers	SEDA for institutional building and business training for emerging farmers	REID	t.b.d	Business Plan
Volume of Production	Determine the volume of production for increasing volumes	WCDoA	t.b.d	Business Plan
Business plan preparation	Business plan development and implementation (determine the needs and inputs)	REID (Urban Econ)	t.b.d	Business Plan
Identify emerging producers	Identify all the emerging farmers/producers within the FPSU catchment	REID	t.b.d.	Business Plan
Capacity Building and empowerment	Active involvement of rural women	REID	t.b.d	Business Plan
Recruitment and training of NARYSEC youth	1. Recruitment of unemployed youth. 2. Skills training. 3. Deployment to community service	NARYSEC	t.b.d	Business Plan
Marketing Institution	Establishment of a marketing institution to service all producers	REID/WCDoA	t.b.d	Business Plan
Mechanisation	Identify the needs for mechanisation	REID	t.b.d	Business Plan
REID – Rural Enterprise and Industrial Development; NARYSEC – National Rural Youth Services Corps, WCDoA – Western Cape Department of Agriculture, SEDA – Small Enterprise Development Agency.				

(Source: West Coast District Rural Development Plan 2017)

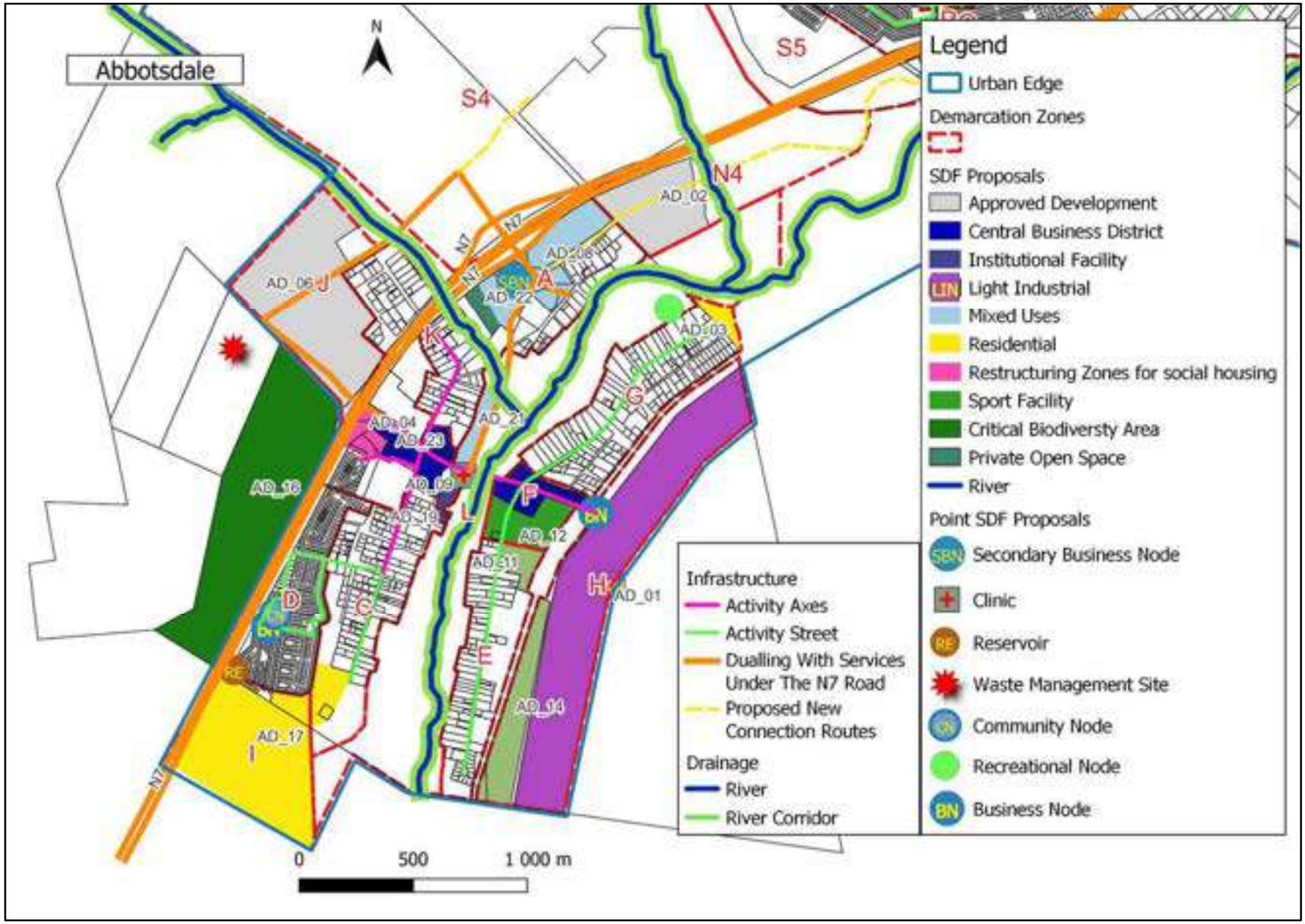
Annexure 5 Comprehensive List of Projects

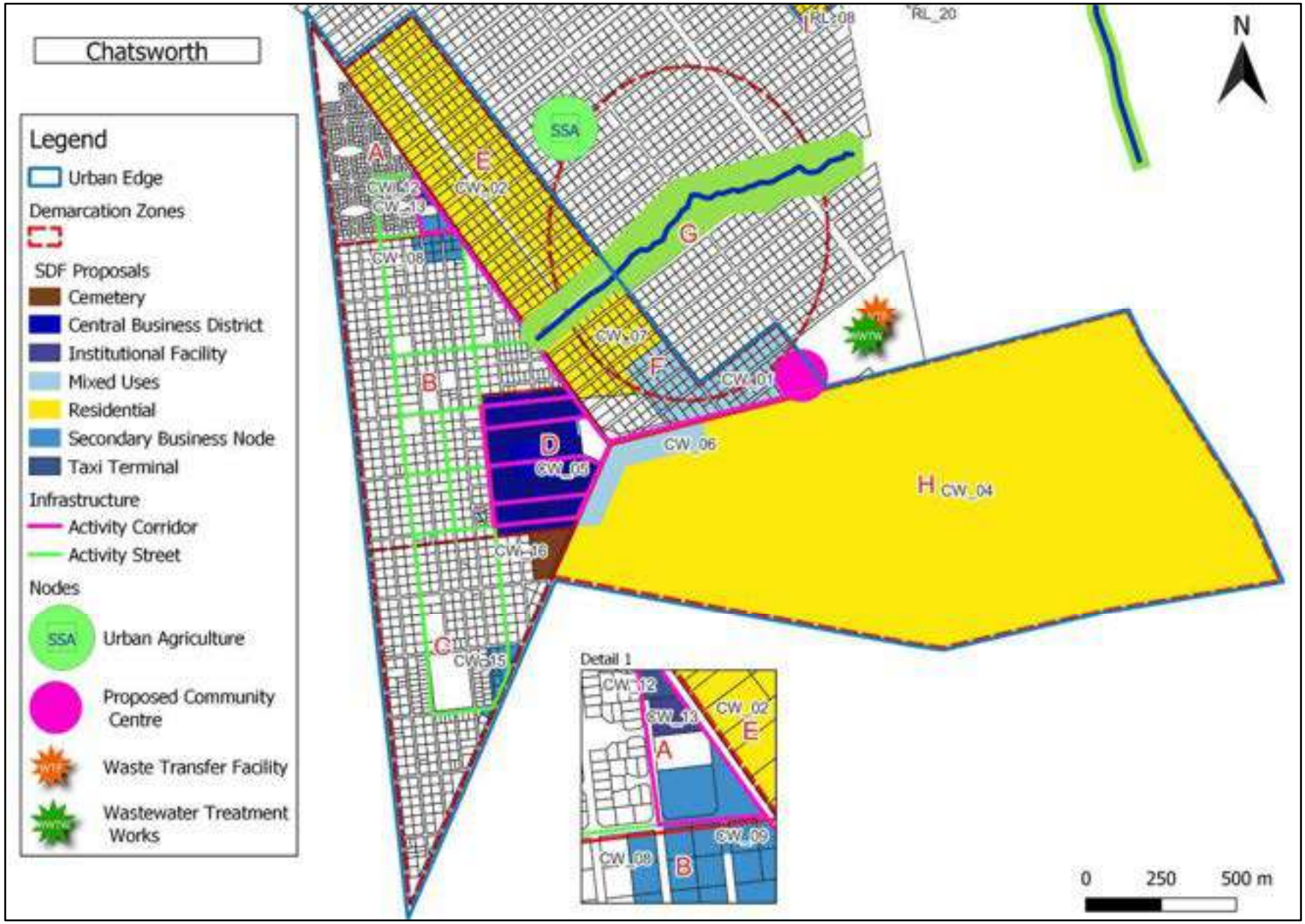
A list of proposals over the SDF cycle follow below and serve as priorities

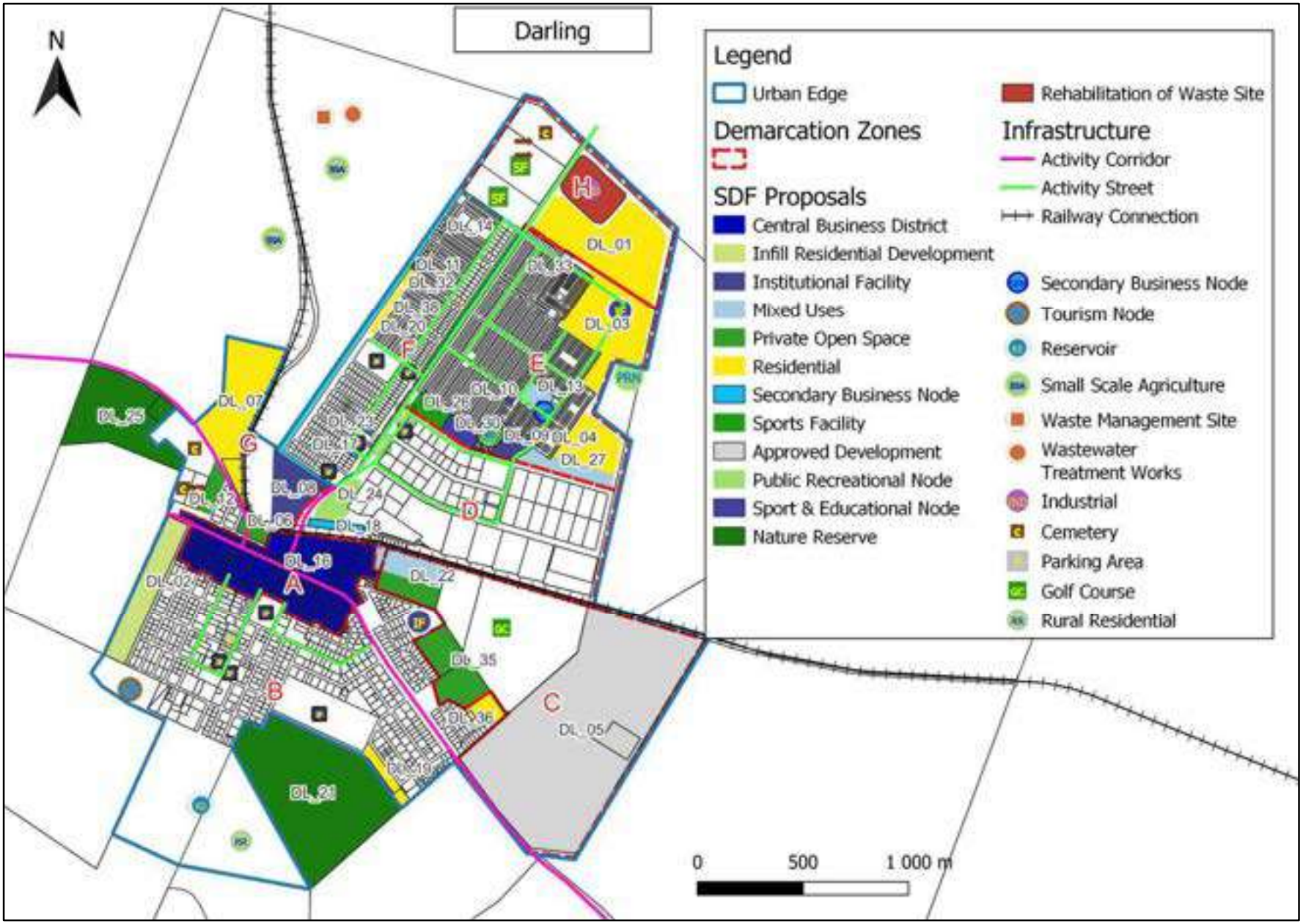
Abbreviations:

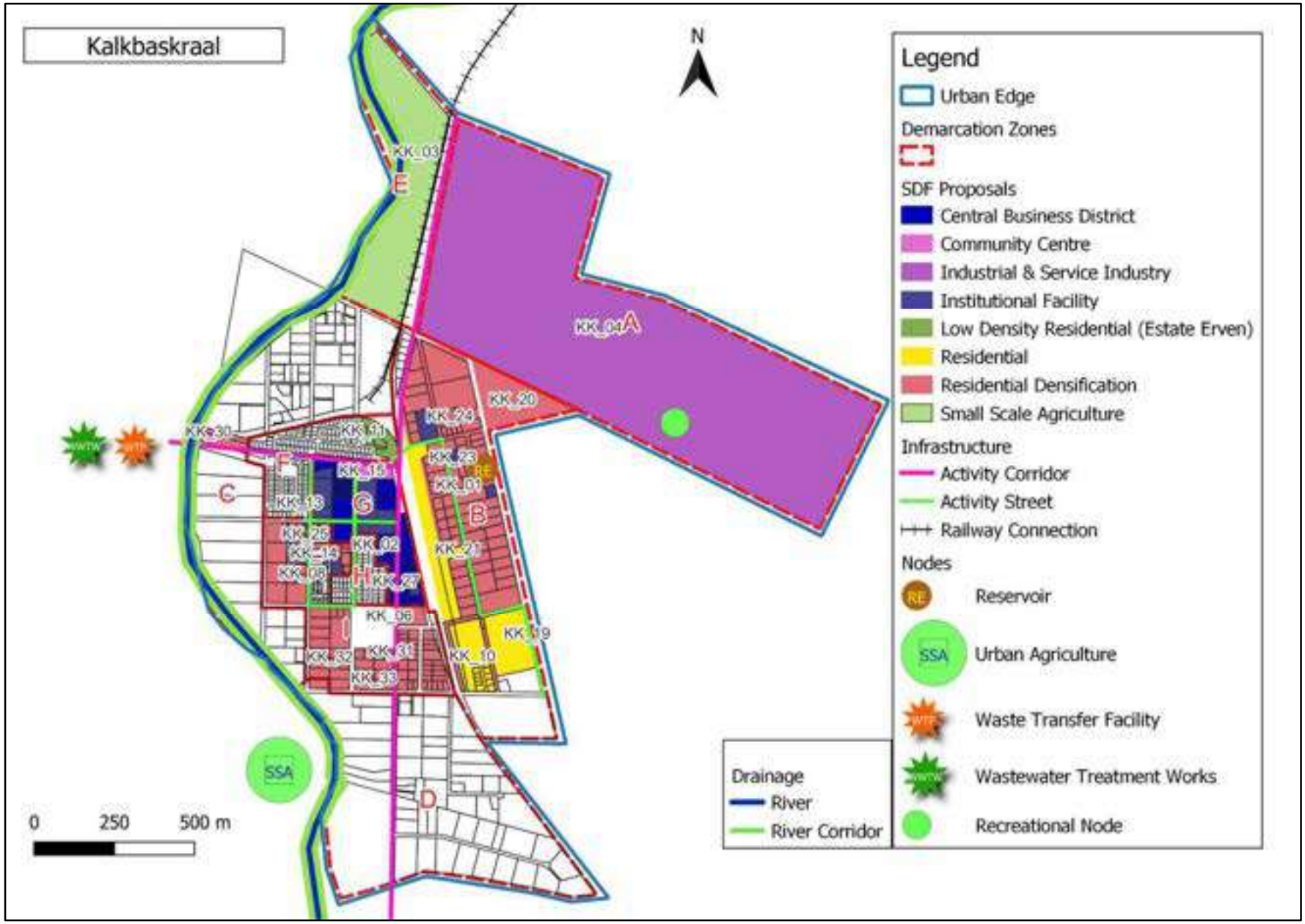
Settlement	Use	Gross_Area	Zone	Time Frame
Abbotsdale				
AD_01	Light Industrial	47,7	G	< 5
AD_03	Residential	1,7	K	< 5
AD_05	Residential	31,9	H & C	+ 10
AD_08	Mixed Uses	12	A	< 5
Chatsworth				
CW_02	Residential	13,4	D	< 5
CW_03	Residential	17,4	D	< 5
CW_04	Residential	158,7	G	5 – 10
Darling				
DL_01	Residential	16,5	H	5 -10
DL_02	Infill Residential Development	8	B	< 5
DL_03	Residential	12,6	E	5 -10
DL_04	Residential	6,2	E	5 -10
DL_07	Residential	13,2	G	5 -10
DL_19	Residential	1,8	B	< 5
DL_20	Residential	0,3	F	< 5
DL_27	Mixed Uses	3,3	E	5 -10
DL_28	Residential	0,1	F	< 5
DL_31	Residential	0,1	F	< 5
DL_32	Residential	0,3	F	< 5
DL_39	Rural Residential	18,6	B	< 5
Kalbaskraal				
KK_03	Small Scale Agriculture	13,2	E	5 – 10
KK_04	Industrial & Service Industry	72,7	A	+ 10
KK_08	Residential	2,1	B	< 5
KK_15	Residential	2,4	B	< 5
KK_17	Residential	2,7	B	< 5
Koringberg				
KB_01	Residential	4,3	C	< 5
KB_05	Residential	2,2	E	< 5
KB_06	Residential	2,8	E	5 – 10
KB_08	Residential	0,7	C	< 5
KB_13	Restricted Residential	2,2	A	5 – 10
Malmesbury				
MM_02	Residential	54,6	Q	< 5
MM_08.11	Residential	22,5	Q	< 5
MM_09	Business	12,4	Q	< 5
MM_13	Residential	52,1	I	5 – 10
MM_15	Residential	84,6	G	+10

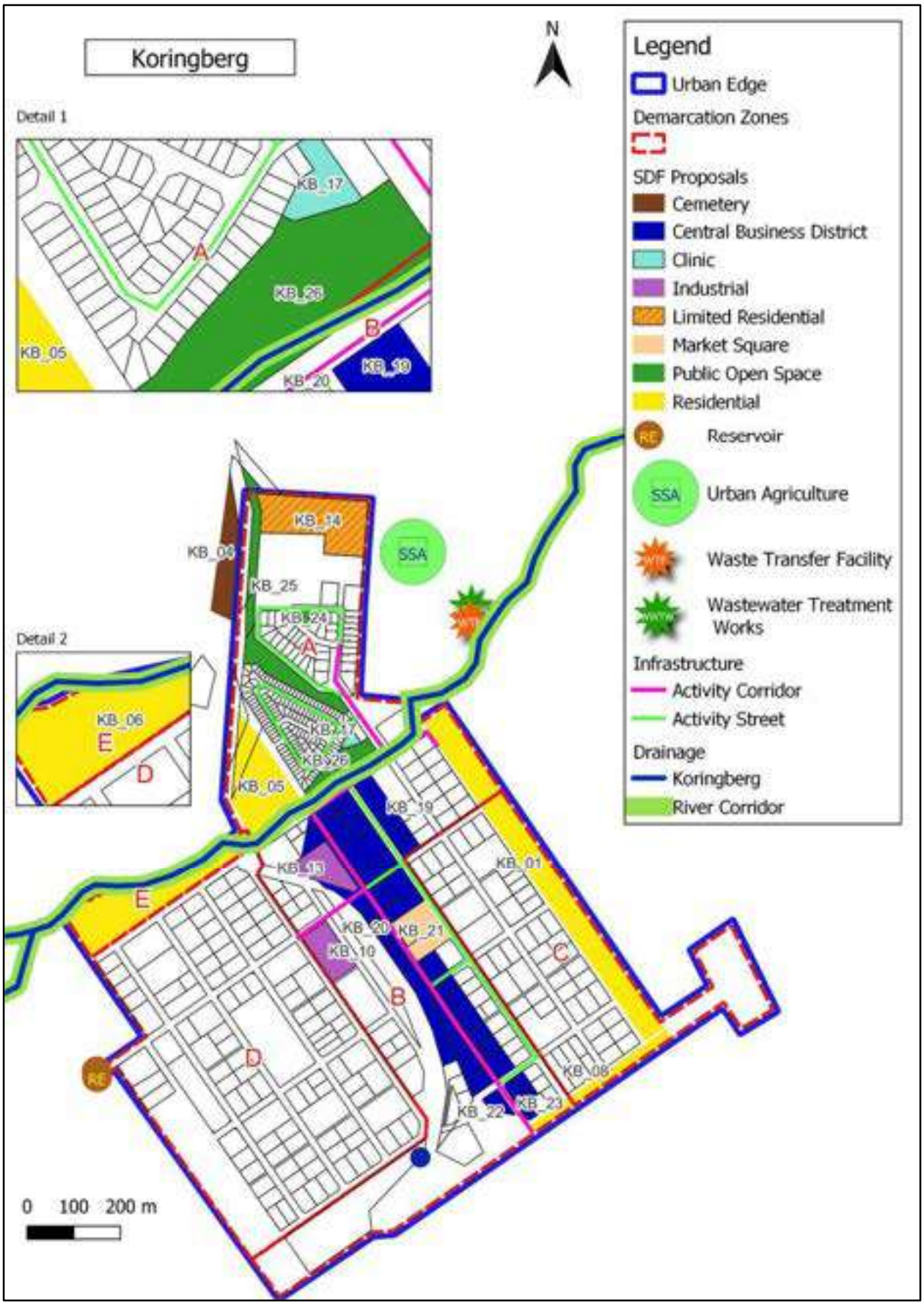
MM_18	Mixed Uses	27,4	I	5 – 10
MM_8.13	Business	14,6	Q	< 5
MR_01	Approved Development	21,3	C	5 – 10
MR_02	Industrial	59,7	C	+10
MR_10	Residential	27	B	5 – 10
Ongegund				
OG_03	Residential	11,4	B	50 % <5, 50% +10
Riebeek Kasteel				
RK_01	Residential	4,2	C	< 5
RK_02	Residential	9,8	D	< 5
RK_03	Residential	2,3	A	5 – 10
RK_04	Residential	1,8	D	< 5
RK_05	Residential	6,7	D	5 – 10
RK_06	Residential	6,9	I	< 5
RK_09	Industrial	16,6	H	5 – 10
RK_11	Industrial	6,8	H	< 5
RK_12	Residential	14,7	F	50 % <5, 50 % 5 – 10
RK_13	Mixed Use	10,7	F	50 % <5, 50 % 5 – 10
RK_14	Residential	1,2	C	< 5
Riebeek Wes				
RW_02	Residential	5,3	A	5 – 10
RW_03	Residential	1,8	A	5 – 10
RW_04	Residential	4,1	I	5 – 10
RW_05	Residential	3,6	F	5- 10
RW_06	Residential	2,3	A	5 – 10
RW_13	Mixed Use	2,3	B	5 – 10
RW_17	Residential	0,9	D	< 5
RW_18	Residential	2,8	C	< 5
Riverlands				
RL_01	Residential	9	F	< 5
RL_08	Residential	13,5	H	5 – 10
YF_03	Residential	59,3	F	5 - 10; +10
YF_08	Residential	61,1	G	5 - 10; +10
Yzerfontein				
YF_21	Restricted Residential	149,3	H	5 - 10; +10
YF_28	Resort Zone	7,2	Out	< 5

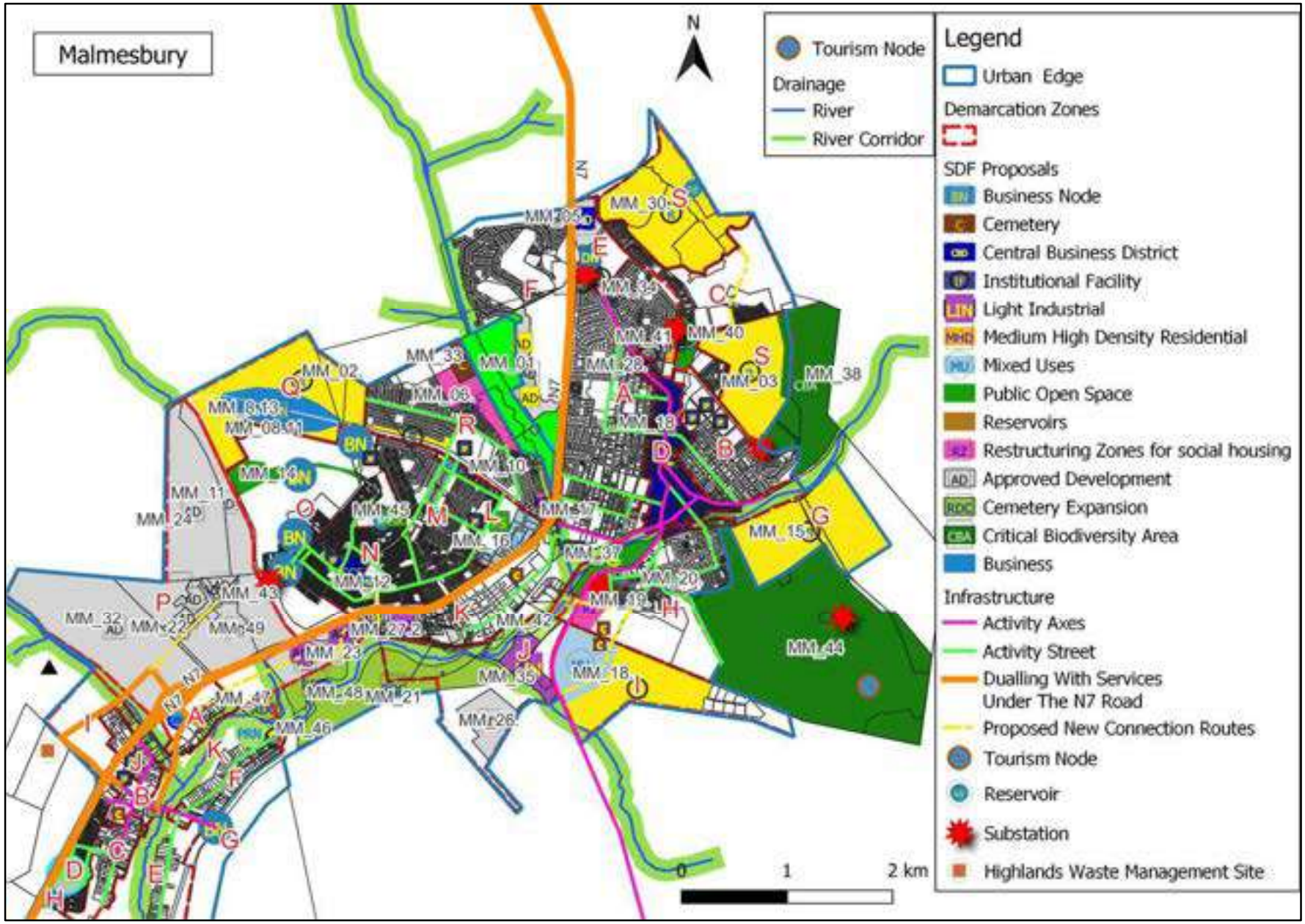

Abbotsdale
N
S4
S5
N4
N7
AD_02
AD_03
AD_04
AD_05
AD_06
AD_08
AD_09
AD_11
AD_12
AD_16
AD_17
AD_18
AD_19
AD_21
AD_22
AD_23
AD_01
A
C
D
E
F
G
H
J
K
L
P
SBN
BN
RE
0
500
1 000 m
Legend
Urban Edge
Demarcation Zones
SDF Proposals
Approved Development
Central Business District
Institutional Facility
Light Industrial
Mixed Uses
Residential
Restructuring Zones for social housing
Sport Facility
Critical Biodiversty Area
Private Open Space
River
Point SDF Proposals
Secondary Business Node
Clinic
Reservoir
Waste Management Site
Community Node
Recreational Node
Business Node
Infrastructure
Activity Axes
Activity Street
Dualling With Services Under The N7 Road
Proposed New Connection Routes
Drainage
River
River Corridor

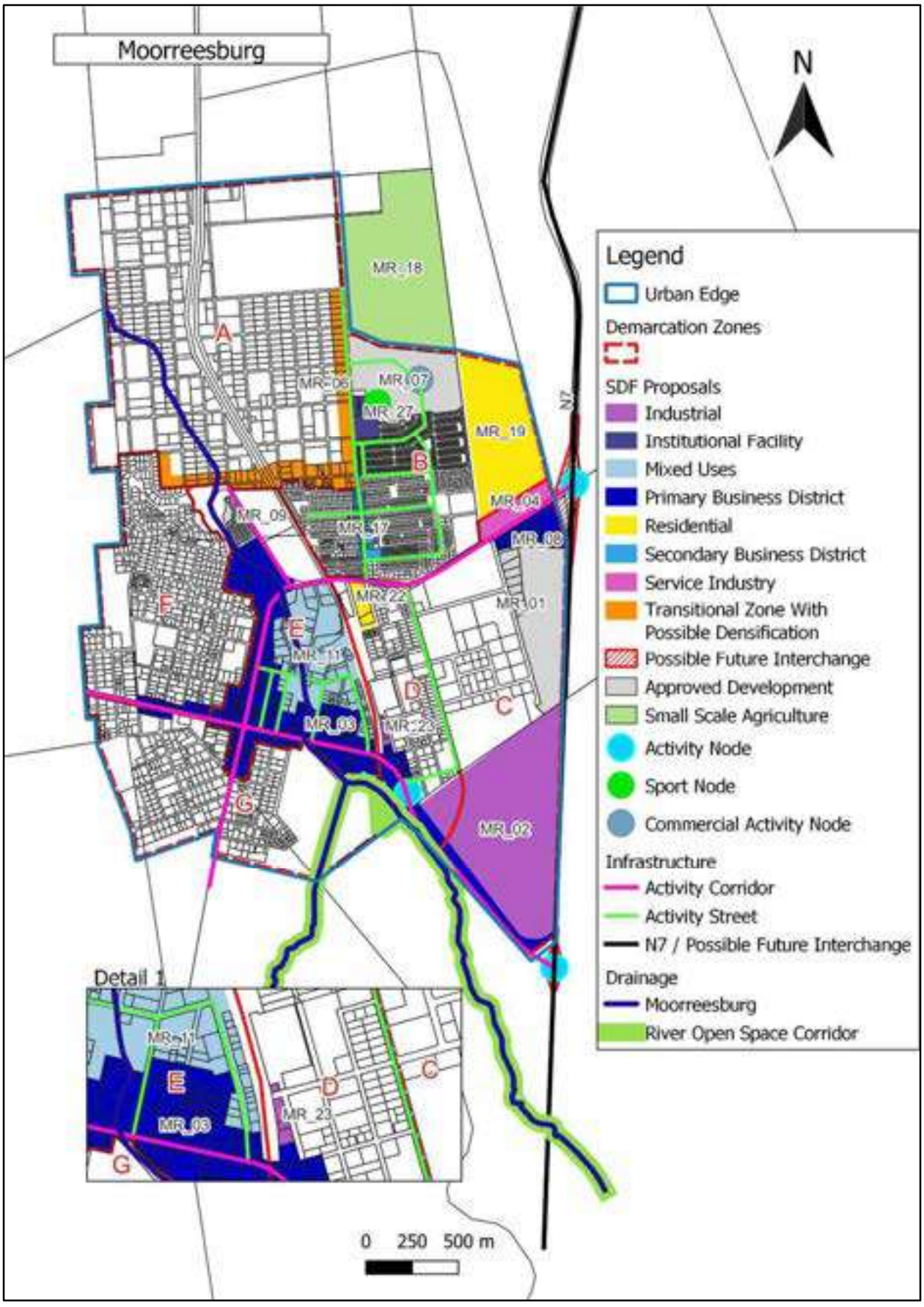

Chatsworth
Legend
Urban Edge
Demarcation Zones
SDF Proposals
Cemetery
Central Business District
Institutional Facility
Mixed Uses
Residential
Secondary Business Node
Taxi Terminal
Infrastructure
Activity Corridor
Activity Street
Nodes
SSA
Urban Agriculture
Proposed Community Centre
WTF
Waste Transfer Facility
WWTW
Wastewater Treatment Works
SSA
A
B
C
D
E
F
G
H
I
CW_12
CW_13
CW_02
CW_08
CW_07
CW_01
CW_06
CW_04
CW_05
CW_16
CW_15
RL_08
RL_20
WWTW
N
Detail 1
CW_09
0
250
500 m

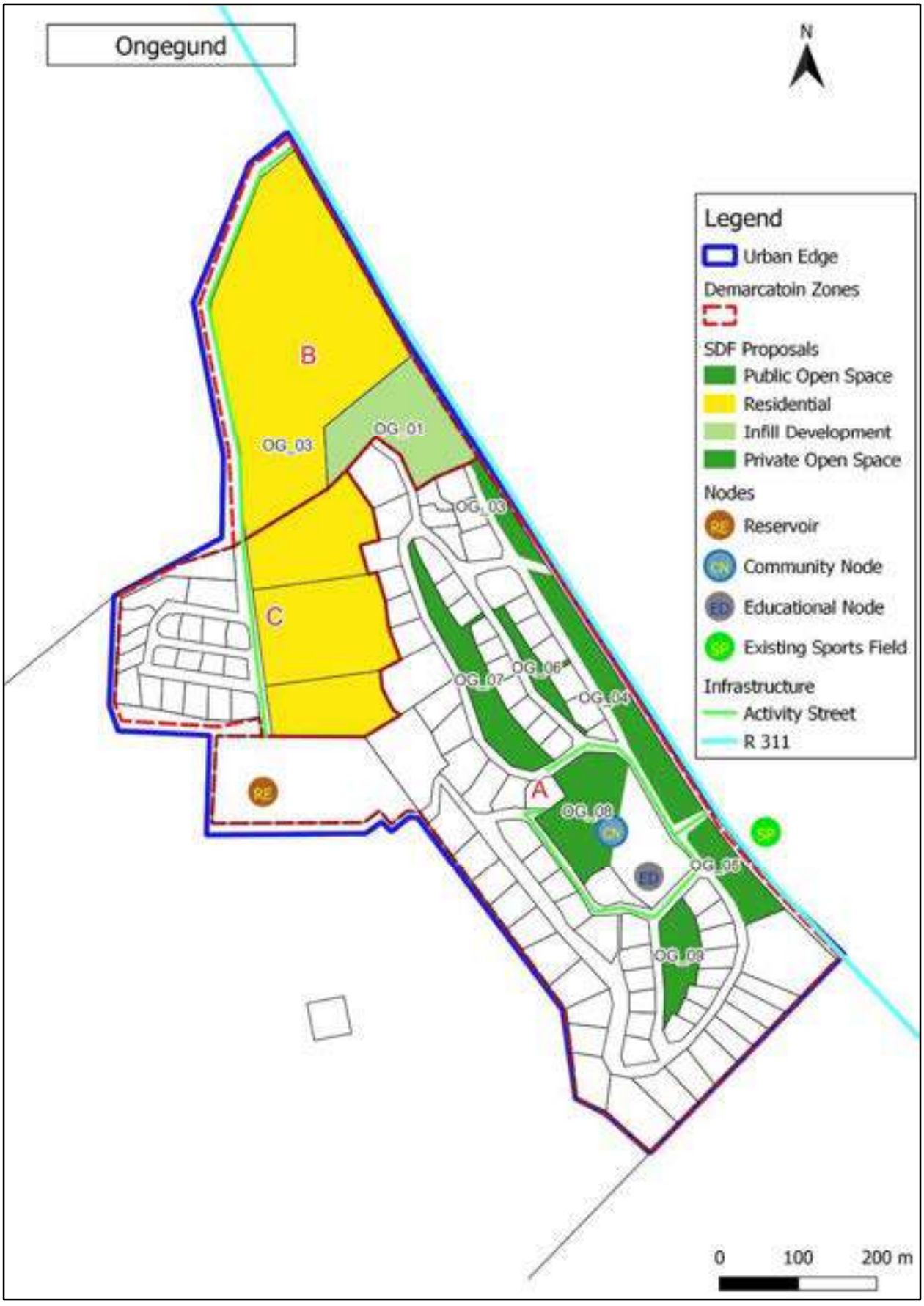

Darling
N
Legend
Urban Edge
Demarcation Zones
SDF Proposals
Central Business District
Infill Residential Development
Institutional Facility
Mixed Uses
Private Open Space
Residential
Secondary Business Node
Sports Facility
Approved Development
Public Recreational Node
Sport & Educational Node
Nature Reserve
Rehabilitation of Waste Site
Infrastructure
Activity Corridor
Activity Street
Railway Connection
Secondary Business Node
Tourism Node
Reservoir
Small Scale Agriculture
Waste Management Site
Wastewater Treatment Works
Industrial
Cemetery
Parking Area
Golf Course
Rural Residential
0
500
1 000 m

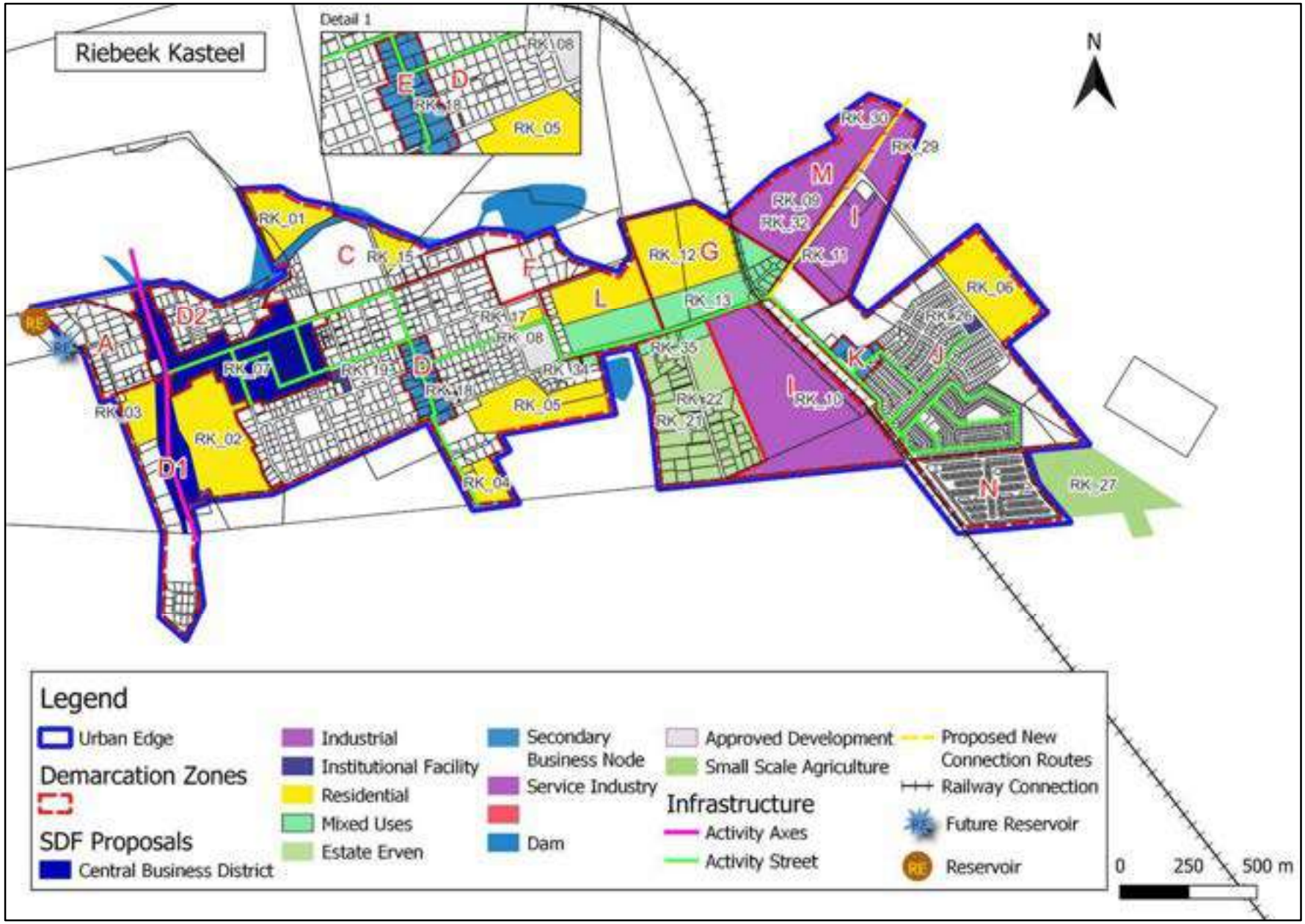

Kalkbaskraal
N
Legend
Urban Edge
Demarcation Zones
SDF Proposals
Central Business District
Community Centre
Industrial & Service Industry
Institutional Facility
Low Density Residential (Estate Erven)
Residential
Residential Densification
Small Scale Agriculture
Infrastructure
Activity Corridor
Activity Street
Railway Connection
Nodes
Reservoir
Urban Agriculture
Waste Transfer Facility
Wastewater Treatment Works
Recreational Node
Drainage
River
River Corridor
KK_03
KK_04
KK_20
KK_24
KK_23
KK_01
KK_30
KK_11
KK_15
KK_13
KK_25
KK_14
KK_08
KK_02
KK_27
KK_06
KK_32
KK_31
KK_33
KK_10
KK_19
A
B
C
D
E
F
G
H
J
SSA
0
250
500 m

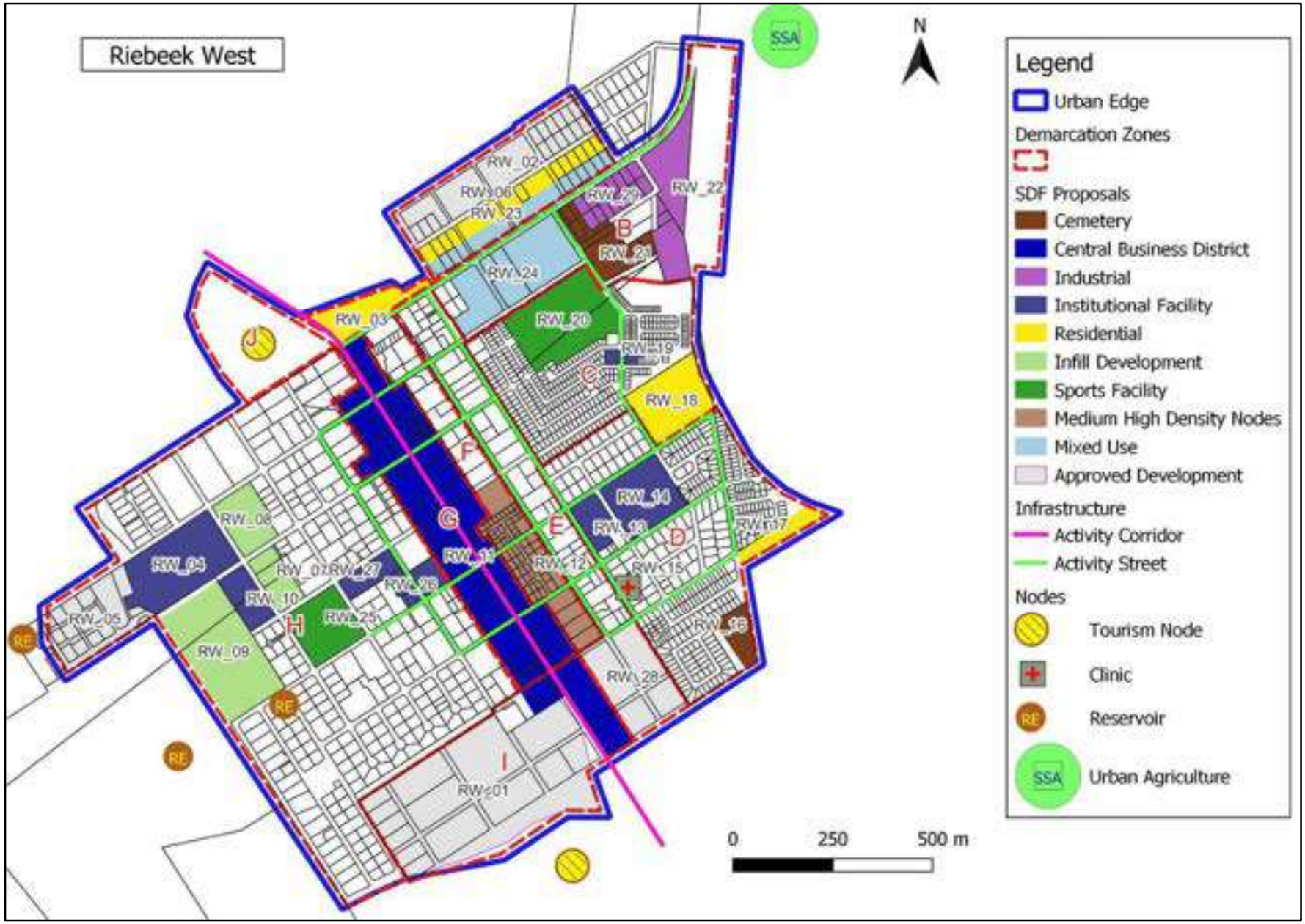

Koringberg
N
Detail 1
Detail 2
KB_17
KB_26
KB_05
KB_20
KB_19
KB_14
KB_04
KB_25
KB_24
KB_27
KB_06
KB_07
KB_26
KB_13
KB_01
KB_20
KB_21
KB_10
KB_08
KB_22
KB_23
SSA
RE
WTF
WWTW
A
B
C
D
E
0 100 200 m
Legend
Urban Edge
Demarcation Zones
SDF Proposals
Cemetery
Central Business District
Clinic
Industrial
Limited Residential
Market Square
Public Open Space
Residential
Reservoir
Urban Agriculture
Waste Transfer Facility
Wastewater Treatment Works
Infrastructure
Activity Corridor
Activity Street
Drainage
Koringberg
River Corridor

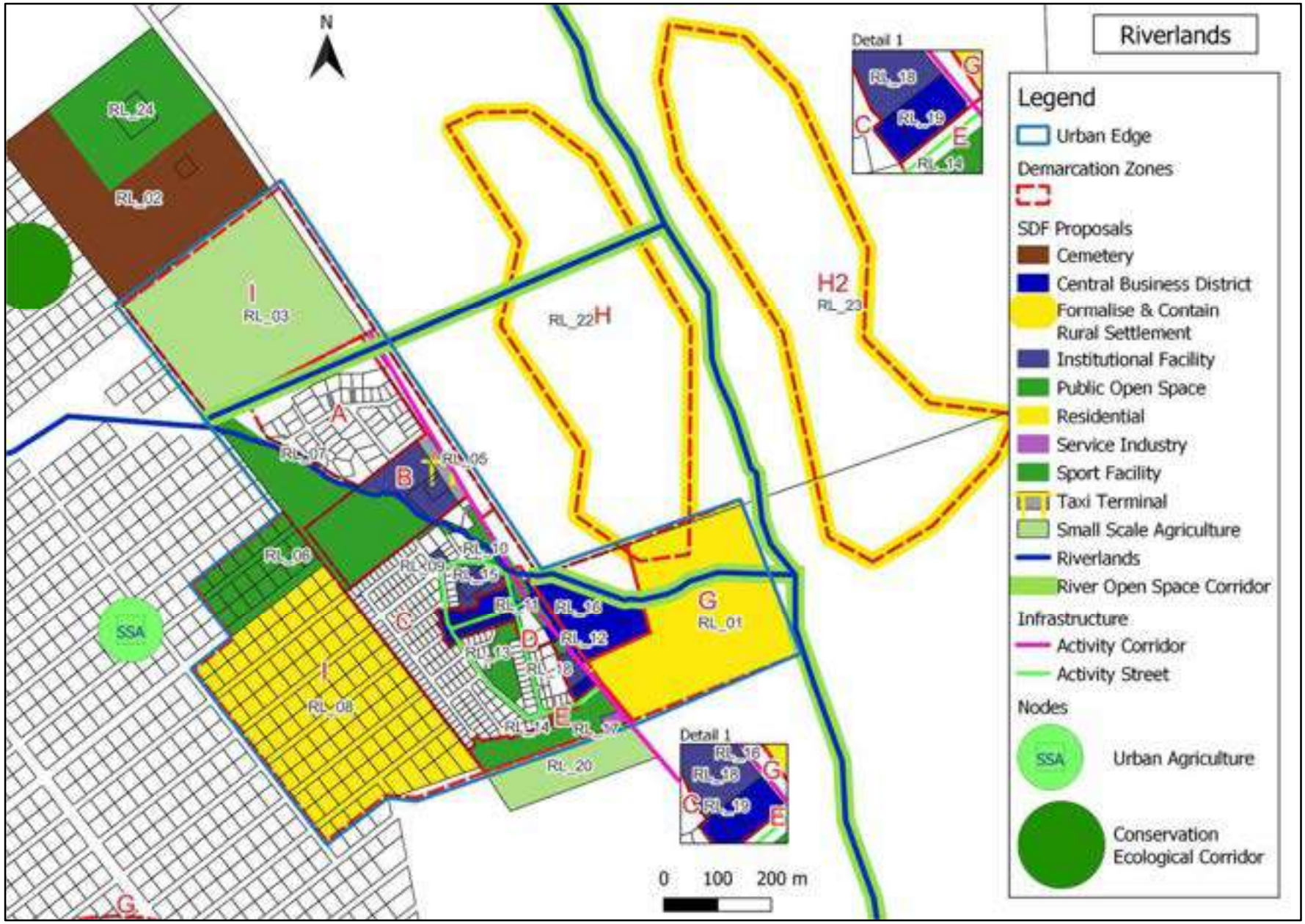

Malmesbury
N
Tourism Node
Drainage
River
River Corridor
Legend
Urban Edge
Demarcation Zones
SDF Proposals
Business Node
Cemetery
Central Business District
Institutional Facility
Light Industrial
Medium High Density Residential
Mixed Uses
Public Open Space
Reservoirs
Restructuring Zones for social housing
Approved Development
Cemetery Expansion
Critical Biodiversity Area
Business
Infrastructure
Activity Axes
Activity Street
Dualling With Services Under The N7 Road
Proposed New Connection Routes
Tourism Node
Reservoir
Substation
Highlands Waste Management Site
0
1
2 km

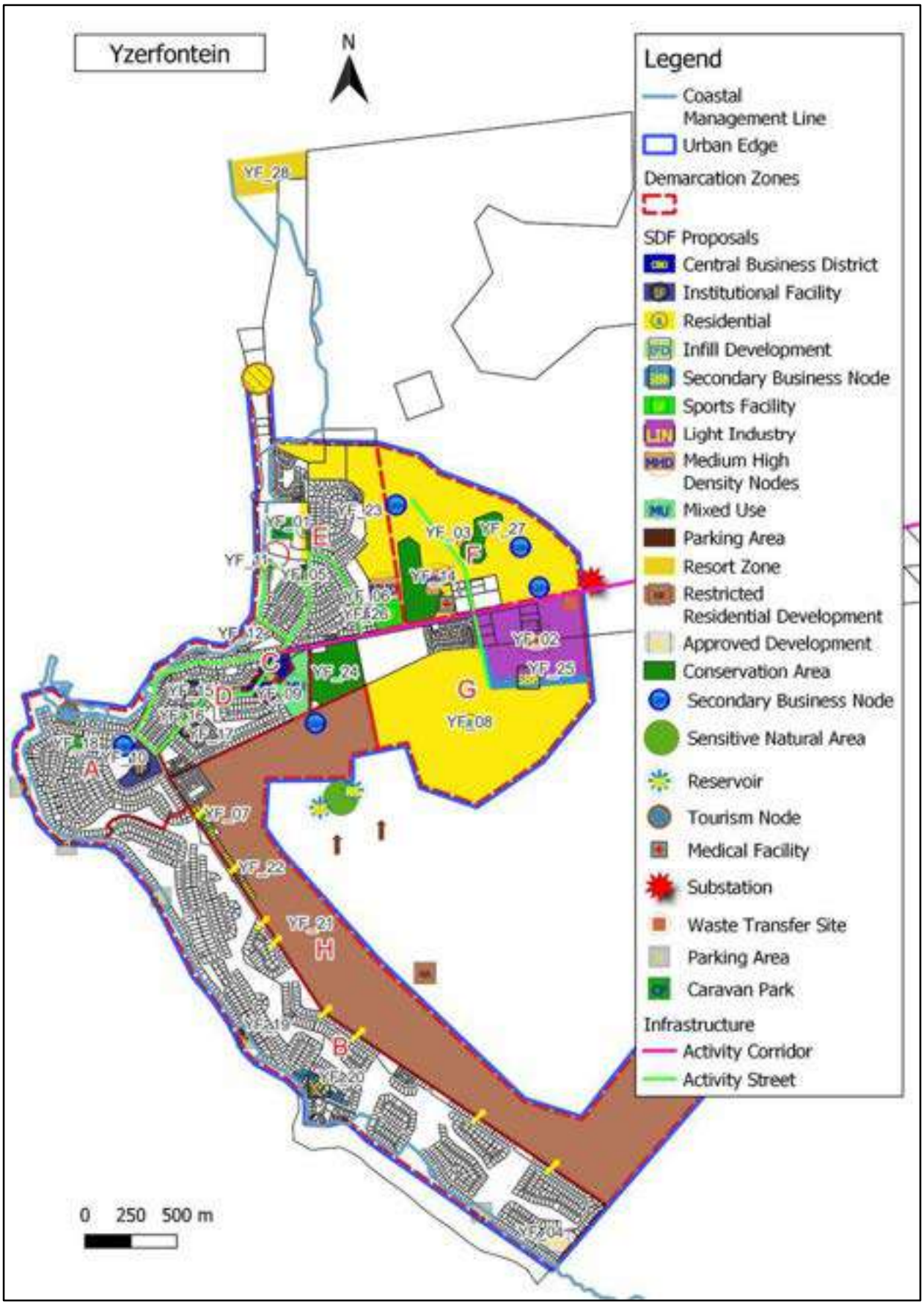

Moorreesburg
N
Legend
Urban Edge
Demarcation Zones
SDF Proposals
Industrial
Institutional Facility
Mixed Uses
Primary Business District
Residential
Secondary Business District
Service Industry
Transitional Zone With Possible Densification
Possible Future Interchange
Approved Development
Small Scale Agriculture
Activity Node
Sport Node
Commercial Activity Node
Infrastructure
Activity Corridor
Activity Street
N7 / Possible Future Interchange
Drainage
Moorreesburg
River Open Space Corridor
MR_18
MR_06
MR_07
MR_27
MR_19
MR_04
MR_09
MR_17
MR_08
MR722
MR101
MR_11
MR_03
MR_23
MR_02
N7
A
B
C
D
E
F
G
Detail 1
0 250 500 m


Ongegund
N
Legend
Urban Edge
Demarcatoin Zones
SDF Proposals
Public Open Space
Residential
Infill Development
Private Open Space
Nodes
Reservoir
Community Node
Educational Node
Existing Sports Field
Infrastructure
Activity Street
R 311
B
C
A
OG_01
OG_02
OG_03
OG_04
OG_05
OG_06
OG_07
OG_08
OG_09
RE
CN
ED
SP
0
100
200 m


Riebeek Kasteel
Detail 1
N
RK_01
RK_02
RK_03
RK_04
RK_05
RK_06
RK_07
RK_08
RK_09
RK_10
RK_11
RK_12
RK_13
RK_15
RK_17
RK_18
RK_19
RK_20
RK_21
RK_22
RK_27
RK_29
RK_30
RK_32
RK_34
RK_35
RK_108
A
C
D
D1
D2
E
F
G
I
J
K
L
M
N
RE
Legend
Urban Edge
Demarcation Zones
SDF Proposals
Central Business District
Industrial
Institutional Facility
Residential
Mixed Uses
Estate Erven
Secondary Business Node
Service Industry
Dam
Approved Development
Small Scale Agriculture
Infrastructure
Activity Axes
Activity Street
Proposed New Connection Routes
Railway Connection
Future Reservoir
Reservoir
0
250
500 m


Riebeek West
SSA
N
Legend
Urban Edge
Demarcation Zones
SDF Proposals
Cemetery
Central Business District
Industrial
Institutional Facility
Residential
Infill Development
Sports Facility
Medium High Density Nodes
Mixed Use
Approved Development
Infrastructure
Activity Corridor
Activity Street
Nodes
Tourism Node
Clinic
Reservoir
Urban Agriculture
0
250
500 m


N
Riverlands
Detail 1
Detail 1
Legend
Urban Edge
Demarcation Zones
SDF Proposals
Cemetery
Central Business District
Formalise & Contain Rural Settlement
Institutional Facility
Public Open Space
Residential
Service Industry
Sport Facility
Taxi Terminal
Small Scale Agriculture
Riverlands
River Open Space Corridor
Infrastructure
Activity Corridor
Activity Street
Nodes
SSA
Urban Agriculture
Conservation Ecological Corridor
RL_01
RL_02
RL_03
RL_04
RL_05
RL_06
RL_07
RL_08
RL_09
RL_10
RL_11
RL_12
RL_13
RL_14
RL_15
RL_16
RL_17
RL_18
RL_19
RL_20
RL_22
RL_23
RL_24
H2
0 100 200 m


Yzerfontein
N
Legend
Coastal Management Line
Urban Edge
Demarcation Zones
SDF Proposals
Central Business District
Institutional Facility
Residential
Infill Development
Secondary Business Node
Sports Facility
Light Industry
Medium High Density Nodes
Mixed Use
Parking Area
Resort Zone
Restricted Residential Development
Approved Development
Conservation Area
Secondary Business Node
Sensitive Natural Area
Reservoir
Tourism Node
Medical Facility
Substation
Waste Transfer Site
Parking Area
Caravan Park
Infrastructure
Activity Corridor
Activity Street
0 250 500 m

Annexure 6 Proposal Maps Key

SYMBOL	TITLE	DESCRIPTION			
OVERALL					
	Existing Use		Proposed Use	Colour	Use Type
F Facility	A single entity, complex or limited area accommodating a single or several activities.		**N** Node	Several entities accommodating several activities, highly accessible	
S, P Street / track /pathway	A continuous linear space enhancing mobility and if described, uses adjacent to the space, e.g. Activity street.		**C** Corridor	An extended continuous space enhancing use intensification.	
	Existing Infrastructure			Proposed Infrastructure	
PARAMETERS					
	Urban Edge	Means a line which may or may not follow cadastral boundaries, demarcating the outer limit of urban development according to interrelated policy, which serves to determine, manage, direct and control urban development.			
A	Approved Development	Means an area within the urban edge where land use rights were granted in accordance with LUMS and civil and electrical services capacities were allocated. A colour notation refers to a specific use according to spatial proposals.			
VVVVV	Sensitive Development	Development directed by conservation of environmental and/or visual and/or heritage character and informed by guidelines.			
	Floodline (i.e rivers, dams)	Is representing the highest elevation that would probably be reached during a storm with a return interval of 100 years and must be indicated on all plans for the establishment of townships in accordance with Section 144 of the National Water Act of 1998 (Act 36 of 1998),			
	River/ Drainage line	A R or water course is a ribbon-like body of water that flows downhill from the force of gravity. A river can be wide and deep, or narrow or shallow. The flowing body of water can be perennial or non-perennial.			

		A D line means a channel down which surface water naturally concentrates and flows, conveying water only during, or immediately after periods of heavy rainfall
	Wetland	Indicates an area of land that is either covered or saturated with water for most of the year, such as a marsh or swamp. The water is often groundwater, seeping up from an aquifer or spring or a nearby river or lake or the sea. These areas have unique ecological characteristics and are important habitats for many species of plants and animals.
	Coastal Management Line	A coastal management line is an established boundary that delineates the area of jurisdiction and responsibility for managing coastal resources. This line is established by coastal authorities to guide land use and development and to ensure the sustainable use of coastal resources.
	Expansion Possibilities	Means refers to a land use to be extended, limited or extensive, on the same or neighbouring land unit.
	Sterilisation Radius	Refers to a 300m to 500m buffer zone around Landfills, cemeteries and waste water treatment works, prohibiting the development of residential or other habitable structures within the buffer zone.
RESIDENTIAL		
	Residential	Indicates an area earmarked for residential use, where permanent dwelling units form neighbourhoods with various densities. Residential use areas include amenities and secondary business nodes according to industry norms.
	Medium or High Density Residential	Indicates areas earmarked for residential densities of up to 20 or more units per hectare that can accommodate Residential 2 and 3 and General Residential 1 and 2 zonings
	Residential Estate	Means an area where larger erven are located or can be created with some guidelines to establish a particular character and to direct residential development and related and supportive land uses.
	Rural Residential	Means an area where larger erven are located or can be created for agricultural use with or without some guidelines to establish a particular character and to direct residential development and related and supportive land uses.
	Restricted Residential	Refers to a designated area that has certain limitations or restrictions identified by special assessments on how the properties can be used or developed. It refers to the constraints that exist on the ability of a particular area or property to intensify its use or expand, whether due to physical or regulatory limitations. This might include things like zoning regulations, environmental protections, or physical factors like topography or geology.
	Restructuring Zone	Is an area designated for targeted investment establishing social housing to achieve social, spatial and economic restructuring . Security of tenure should be within walking distance form social amenities, business and employment opportunities.

RD	Residential Densification	Refers to the process of increasing the number of housing units in a built-up area, usually by subdivision and or rezoning, constructing multifamily buildings or adding additional floors to existing buildings.
TZ	Transitional Zone	Means an area between extreme densities (very low and high), presenting a zone within the lower dense area to subdivide according to a minimum erf size.
IFD	Infill Development	Infill development means an existing layout is cancelled and replaced with a layout with higher densities or vacant or underutilized land within an urban area is developed.
	DoHS	A delineated area earmarked for subsidised housing that were included in the tenure (housing) pipeline, gazetted or not.
BUSINESS/ COMMERCIAL		
CBD	Central Business District	Designated core area or primary business node of a town which concentrated commercial activity. Compatible non-business uses for example residential and service for example storage can be accommodated within the CBD.
NBS	Secondary Business District/ Node	Designate a business area within a town where there is a CBD, that concentrate commercial activity and services with less intensity than in the CBD or primary business node, and serves the immediate neighbourhood(s).
BN	Business Node	Business Nodes indicates an area with a higher concentration of business AND commercial activities but is not necessarily primarily zoned as such.
IMA	Informal Market Area	A designated area where informal enterprises (not incorporated and not registered for taxation) trade goods and services in all economic sectors.
MS	Market Square / Node	A central location within a town that serves as a market place for local merchants and vendors, where local produce and goods and services are sold to consumers.

INDUSTRIAL		
LIN	Light Industrial	Represent industrial uses and service trades that are exercised without being a nuisance to other land use or the general public. Such uses may be adjacent to business and residential areas, and do not present a potentially negative impact on the character or amenity value of such areas.
IND	Industrial	Represent factory uses where an article or part of such article is made, manufactured, produced, built, assembled, compiled, printed, ornamented, processed, treated, adapted, repaired, renovated, rebuilt, altered, painted (including spray painting), polished, finished, cleaned, dyed, washed, broken up, disassembled, sorted, packed, chilled, frozen or stored in cold storage or where a service or part of is rendered such as storage of perishables and non-perishables.
SI	Service Industry	Represents primarily the rendering of services rather than producing goods to the local community and can be establish in an industrial or business area. Services rendered include but is not limited to the repair of household appliances or the supply of household services, a builder's yard and allied trades, a laundry, bakery, dairy depot and similar types of uses, but does not include an abattoir, a brick-making site, sewage works, a service station or a motor repair garage; is not likely to be a source of disturbance and not liable, in the event of fire, to cause excessive combustion, give rise to poisonous fumes or cause explosions;

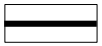
COMBINED USE		
MU	Mixed Uses	Mixed use development incorporates two or more land uses which are compatible either in the same area or precinct or building such as commercial and residential.
DN	Development Node	Means a specific location or area that is highly accessible and earmarked for development including collective and specialised economies, services, manufacturing, tourist attractions and social amenities. Such high-intensity land use activity is likely located along or at the start and end points of existing or emerging national or local corridors or zones and include areas of residence, industrial activity or trade that are either generators of transport and/or supporters of transport functions). (Along major national and major roads.)
	Activity Node	Indicates a neighbourhood node where high-intensity land use activity such as collective & specialised business, services, manufacturing, tourism activities are located at a street intersection that are highly accessible. It includes areas of residence, industrial activity or trade that are either trip generators and/or supporters of transport functions.

AGRICULTURE		
SSA	Small Scale Agriculture	Means agricultural activities that include intensive, extensive, alternative and lifestyle agriculture on a small scale. The land unit on which such activities take place can be demarcated by agreement, lease area or subdivision or any other means. Should such a land unit include critical biodiversity or threatened and endangered vegetation, agricultural activities will be limited to grazing and conservation. Agricultural activities that can be exercised without becoming a nuisance to other land use or the general public and do not present a potentially negative impact on the character or amenity value of an area, are encouraged.

AMENITIES/FACILITIES		
SF	Sports Facility	An in or outdoor facility designed for athletic activities and events, such as stadiums, arenas, fields, gymnasiums, or swimming pools.
POS	Public Open Space	Means municipal land, with or without access control, landscaped or kept natural and used primarily as òr a site for outdoor sports, play, rest or recreation and with or without access control, òr as a park, garden, or conservation area with limited activities and likely access control òr natural veld within a settlement being a conduit for services.
POS_PN	Picnic Area	A designated area within a park or a recreational area that is intended to be used for picnics and outdoor gatherings.
PROS	Private Open Space	Means land under private ownership, with or without access control, used primarily as a site for outdoor sports, play, rest or recreation, or play area or park or garden or for nature conservation and with likely access control.
PROS_GC	Golf Course	A private open spaces used for golfing and supporting uses.
NR	Nature Reserve (*Local)	An area where the preservation of the fauna, flora, soil, water, mineral and fossil deposits and, in general, of the natural environment is of particular importance. *Local means Local Authority, instead of provincial or national.
CBA	Critical Biodiversity Area	Indicates terrestrial (land) and aquatic (water) areas which must be safeguarded in their natural or near-natural state because they are critical for conserving biodiversity and maintaining ecosystem functioning, but have not been officially declared as a reserve.
RN	Recreation Node	A designated area, public or private, within a neighbourhood that provides for recreational facilities such as outdoor sportsfields, playgrounds, and picnic areas.

C	Cemetery	Means a place where the dead are buried and may include buildings that are necessary for the religious, administrative and clerical uses associated therewith, but does not include a crematorium.
	Gateway	A settlement entrance that is formalised.
	Resort node	Designated areas or points of interest to promote tourism and may include holiday facilities in areas with special environmental or recreational attributes, and to encourage access to these facilities by the general public.
CP	Caravan Park	A holiday facility for caravans, motor homes or similar recreational vehicles to encourage access to these facilities by the general public, being established within an open space or a resort.
	Tourism node/ area	Designated areas or points of interest that attract tourists or visitors to a particular location, city, or region.
IF	Institutional Facility	A social facility or amenity and may be public or private, operated for public purposes e.g. a court, school or church.
IF_SC	Integrated Sport & community facility	A community facility, public or private, where sporting events and social amenities and services such as meeting places, fitness classes, and educational programs are combined for the benefit of the community.
IN_SE	Sports & Educational Node	A node of sports and educational facilities and amenities, public or private, where programs that promote both physical activity and learning are combined.
IN_CC	Community Centre	A community facility, public or private, that accommodates a range of services and activities for a local community, such as health, education and training, social services, domestic affairs, administration, sports, events and a gathering space.
	Community Node	A central accessible location, where a range of public and private facilities and amenities is home to health, education and training, social services, domestic affairs, administration, sports, events and gatherings.
ED	Educational Node	An accessible location, where institutions and amenities that offer education are located and formal and or less formal educational activities are offered.
	Medical Facility	A facility, where a range of medical and related services can be practiced.
MED	Medical Precinct	An accessible location, where a cluster of practices provides medical and related services and include a clinic, hospital, dentist and prosthetics.

CORRIDORS AND BUFFERS		
RDC	Rural Development Corridor	Includes intensification of agriculture, tourism, freight, transport, agri-industrial development activities supportive of agriculture in a zone or linear space along a major road and enhanced by related and supportive services and infrastructure.
	Open Space / River Corridors	A dedicated track of land that is public or private within urban or rural areas that promotes conservation or recreational uses and connects destinations and or other natural areas. Rivers naturally have such tracks of land along their banks being labelled a river corridor.
	Activity Corridors	Streets or roads that have generally a very high level of vehicular, non-motorised and pedestrian traffic due to intensification of land use parallel to and on both sides of the street or road, and includes any higher order transport routes such as railway lines and thoroughfares.
	Activity Streets	Streets or roads that have a higher level of vehicular, non-motorised and pedestrian traffic due to adjacent land uses, such as residential, recreation, education or entertainment activities.
	Landscape Buffer Zone	A natural or man-made area that separates two different types of land uses for aesthetic or functional reasons.

ROADS/ROUTES		
	External Connector	A road connecting one location or destination to another or two or more major roads or highways, beyond the municipal boundary. It is usually a shorter route that helps to ease traffic congestion and facilitate easy movement of people and goods.
	Internal Connector	A road connecting various locations or destinations to another or two or more major roads, within municipal boundary.
	Proposed Connector	A proposed road to improve connectivity and access between different locations within a region or municipal area or settlement.
	Alternative Road	Being an alternate path or road that can be taken in case the primary or regular road is not travelable due to natural or man-made events (traffic congestion, roadworks, accidents, or weather conditions).

	Tourism Route	Refer to a road within a beautiful landscape and or cluster of attractions, designated for tourists to visit or explore the natural attractions, such as forests, rivers, lakes, and wildlife within the area.
	NMT/ Pedestrian Route	Refers to a pathway, designed for pedestrians and or non-motorized modes of transport such as bicycles and skateboards, and related infrastructure such as sidewalks, pedestrian-only roads and bridges. NMT or pedestrian routes aim to create safe and convenient access for pedestrians, reduce reliance on cars, and create more walkable neighbourhoods.
	Bus Route	A predetermined path with or without designated stops along the way where passengers can board and disembark the bus, that a bus follows to transport passengers from one location to another. Transportation authorities consider factors such as demand, population density, and traffic flow to inform the route.
	Railway line	A physical link or line of communication that connects different railway stations or tracks with each other to facilitate the movement of trains.
	One-way Traffic	A proposal to restrict the movement of vehicles in one direction only on a particular road, street, or intersection.
	Traffic Circles	Proposed roundabouts or circular traffic intersections that are designed to improve traffic flow, reduce accidents, and improve safety.
	Underpass	Proposed underpass along a provincial or national road also serving as a services conduit.
	Bridge widening	Proposed expansion of a bridge to accommodate additional vehicles or traffic flow over a river or other body of water.
T	Taxi Terminal	An amenity where taxis or other ride-sharing services can pick up and drop off and park to wait for passengers.
P	Parking Area	A designated area designed for vehicles to parked temporarily.

INFRASTRUCTURE		
	Renewable Energy	Means any wind, solar, water or organic matter facility or grouping of facilities that captures and converts wind, radiation of the sun, water or organic matter into energy for commercial gain irrespective of whether it feeds into an electricity grid or not, and includes any appurtenant structure or any test facility or related uses.
	Supply Network Strengthening	The process of enhancing the reliability, and efficiency of a supply network of services, such as electricity and water.
	Retention Facility	A structure designed to retain or temporarily store water/ sewage or other materials for future use or distribution.
	Reservoir	A large artificial or natural lake or structure created to store water that can be used for irrigation, drinking, or other purposes.
	Existing Substation	An electrical facility that transforms and distributes electrical energy from the power grid to dwellings, businesses and plants.
	Waste Management/ Landfill Site	A site designated for waste disposal with a 500m buffer zone, typically with regulations to prevent contamination and pollution of surrounding areas.
	Waste Transfer Site	A location where waste is temporarily stored and sorted before being transported to a permanent landfill site (Proposed and Existing).
	Waste Water Treatment facility	Indicates a facility for the treatment of sewerage.

Annexure 7 Description of proposed land uses for development zones

Description of proposed land uses in the identified Development Zones of the Swartland towns	
Proposed land uses	**Description**
Low density Residential uses	*Residential densities of up to 15 units per hectare within the Residential Zone 1, 3 and 5* zoning can be accommodated within these zones.*
Medium density Residential uses	*Residential densities of up to 20 to 50 units per hectare within the Residential Zones 2 and 3, General Residential Zones 1 and 2* can be accommodated within these zones.*
High density Residential uses	*Residential densities of above 50 units per hectare can be accommodated within these zones with proposed zonings Residential Zone 4 and General Residential Zone 3*.*
Secondary Educational uses	*Allow for educational uses such as Crèches, After Care facilities and Day Care Centres.*
Place of Education	*Allow for places of education (crèches, schools, colleges, universities, technical institututes, public art gallery, research institutions, public library, museums, or other centre of education and includes an associated hostel).*
Professional Use	*Means that kind of use which is normally and reasonably associated with professionals such as doctors, dentists, attorneys, architects, engineers and town planners, where services rendered, are separate from trading are one of the distinguishing factors as accommodated under Business Zones 1 and 2*.*
Business Uses	*Business uses that include business premises, restaurants, shops, supermarket, offices, service trade and other uses as included under Business Zone 1 (at CBDs), Business Zone 2 (where designated) and Business Zone 3* (where designated).*
Secondary Business Uses	*Allow for low intensity commercial and mixed uses to provide for the needs of the local neighbourhood in terms of consumer goods and personal services. This includes consent uses like House taverns and House shops. House Taverns will only be allowed at the discretion of the Municipality. Other uses include low impact uses under Business Zone 2*. These types of uses should be limited and must be able to integrate with surrounding residential areas without negatively impacting these areas.*
Place of Worship	*Means a church, synagogue, mosque, temple, chapel or other place for practising a faith or religion, and includes any building, including a residence, associated therewith, as allowed under Community Zone 2*, but does not include a funeral parlour, cemetery of crematorium.*
Institution	*Premises used as or intended to be used as a social, health or welfare facilities, or for the administration thereof and includes a hospital, clinic, pharmacy, home for the aged, indigent or handicapped, rehabilitation centre, reformatory or place of detention, whether of a commercial or charitable natdure that are allowed for as a primary use under the Community Zone 3* as well as allowed for as a consent use under General Residential Zone 3*, Business Zone 1*, Community Zones 1* and 2* and Transport Zone 1*.*
Guest Houses	*For the provision of guest accommodation as allowed for as a consent use under Residential Zones 1*, 2* and 5*, Agricultural Zones 1* and 3*, and as a primary use uder General Residential Zone 3* and Resort Zone*.*
Authority	*Uses that are related to national and provincial government departments and municipalities. The locality and alignment of authority uses should consider existing and planned future uses in the surrounding area. Uses as allowed under Authority Zone.*
Sport/Recreational Facilities	*Allow for sport facilities and other related recreational and tourism facilities like show grounds, picnic and camping areas.*
Industrial/Service Trade and Industries	*Allow for development of industries, service industries and service trade related uses, with the different types of industries considering the context and locality in the urban areas. Certain commercial uses including shops, restaurants, places of assembly, adult entertainment as well as funeral parlours and places of worship that are allowed for under these zones in accordance with the zoning scheme.*

** The proposed zonings areaccording to the Swartland Municipal Land Use Planning By-law 2020 or as may be amended in future. The proposed zonings only provide an indication of the zonings that can be allowed within the zones. Any land use application within the development zones area will still be subject to other regulations that are applicable to the specific areas and within the zoning scheme.*