CEDERBERG

SPATIAL DEVELOPMENT FRAMEWORK





CEDERBERG MUNICIPALITY



SPATIAL GOALS, GUIDELINES AND PROPOSALS FOR 2017-2022

CEDERBERG SPATIAL DEVELOPMENT FRAMEWORK 2017-2022

EXECUTIVE SUMMARY

Purpose & Vision

The purpose of the Cederberg Spatial Development Framework (SDF) is to guide growth and development in the municipal area or space in a sustainable manner. Hence, future growth, development and land use planning depart from a vision and principles that underscore the protection, development and change of integrated, sustainable settlements and liveable environments to enable economic and social prosperity.

Therefore the spatial vision for the Cederberg is:

To sustainably exploit the municipality's wide variety of agricultural, tourist and cultural resources including: • the West Coast; • the potato and grain lands of the coastal plain; • the fertile Olifants river valley with its dual purpose Clanwilliam dam feeding both agriculture and tourism; and, • the Cederberg mountain range offering scenic, biodiversity conservation and cultural tourism opportunities

Status of the Cederberg SDF

The Cederberg Spatial Development Framework (SDF), 2012-2017, approved as a component of the Cederberg IDP in terms of Section 26(e) of the Municipal Systems Act, Act 32 of 2000, has to be revised every five years as stipulated in the Municipal Systems Act and the Land Use Planning Act No 3 of 2014. Annual additions are also allowed for.

The amendment of the SDF bring about the alignment thereof in accordance with the National Spatial Planning and Land Use Act, Act 16 of 2013 (SPLUMA), Sections 12 and 21 and the Provincial Land Use Planning Act, Act 3 of 2014 (LUPA), Section 11. In order to ensure integration of IDP proposals and their spatial implications, the amendment forms part of Cederberg Integrated Development Plan (IDP) development cycle according to the prescribed procedure as per Section 7 of the Cederberg Municipality Land Use Planning By-Law.

Values and Principles

The eight Batho Pele principles are valued by Cederberg Municipality are:

- Consultation: citizens should be consulted about their needs
- Standards: all citizens should know what service to expect
- Redress: all citizens should be offered an apology and solution when standards are not met
- Access: all citizens should have equal access to services
- Courtesy: all citizens should be treated courteously
- Information: all citizens are entitled to full, accurate information
- Openness and transparency: all citizens should know how decisions are made and departments are run
- Value for money: all services provided should offer value for money

This set of principles together with structural principles creates patterns such as scale, flexibility and intensity of use of space that are desirable.

These values enable a set of principles that when applied to the built and social environment create structural patterns such as scale, flexibility and intensity of use of space that are desirable.

Structural Principles

The structural principles to be applied to all development proposals are as follows:

- Reinforcement – structural elements (i.e. transport modes) reinforcing one another, - use of space (densification, strategic – compact structures), - enhance and protect heritage resources, access and integrated public service
- Continuity- of public and natural open spaces and built form & integration between open spaces and built form, spatial integration (uses, people etc.).
- Connectivity within towns and between towns (movement networks & activity axis and streets), corridor development
- Discontinuity of movement and built form
- Homogeneity and Heterogeneity (same use and mixed use)(intensity of use: structural patterns)

Strategy

To strategically shape spatial planning in the Cederberg region, an understanding of the existing challenges and opportunities are required. A synthesis of the Status Quo report (as per SDF 2012 – 2017) as well as discussions with municipal departments and ward councillors outlined the following strengths, weaknesses, opportunities and threats:

Opportunities	**Threats**
Access value chains - IDZ in Saldanha - Access to Cape Town Access to information Governance and regulation (SPLUMA) Education - West Coast College Campus World economy World nature conservation initiatives	Economic Globalization Climate change Urbanization - population increased to 52 198 people (2015) of which 50% is urbanized Expensive Potable Water (Coastal Towns) Insufficient electricity provision Poverty
Strengths	**Weaknesses**
Settlements - Growth towns/ Service Centres (Clanwilliam - regional, Citrusdal - agricultural and Elands and Lamberts Bay – agricultural and agri - tourism) - Tourism nodes (Elands and Lamberts bay) Water Sources/ Courses - Oliphant's River Land Cover	Maintenance of Infrastructure Shelter - Housing backlog Unemployment - Low levels of income - School drop outs - Dependency on subsidies

- Mountains & Hills: Cederberg - Diversity in agriculture; - Unique produce i.e. Rooibos tea - Natural coastal belt (West Coast) Infrastructure - Roads (N7, R27) Economy - Agriculture is the highest contributor to employment - Agriculture is the highest contributor to GDP	

To strategically shape spatial planning in the Cederberg region, an understanding of the existing challenges and opportunities are required. A synthesis of the Status Quo report (as per SDF 2012 – 2017) as well as discussions with municipal departments and ward councillors outlined the following strengths, weaknesses, opportunities and threats:

The strengths and weaknesses include and represent the status quo of the Cederberg:

Settlements

- Growth towns/ Service Centres:
    - Clanwilliam as regional, Citrusdal as agricultural and Elands and Lamberts Bay as agricultural and agri - tourism) centre
- Grow tourism node: Elands and Lamberts Bay
- Urban Edges: guide and control orderly development of the built environment and are demarcated for five (5) and twenty (20) periods years in accordance with the planning principles as advocated in SPLUMA and LUPA. The urban edges of the towns in the Cederberg protect high value agricultural land and encourage compact urban form, spatial integration whilst providing for additional land to address the future urban growth.
- Water Sources
- The Oliphant's River supports agriculture and tourism activities along the river. The Riet River runs at the back (western side) of the Cederberg mountains.
- Land Cover
- Mountains & Hills: Cederberg, Oliphant's River Mountains and Skurwe mountain range
- Diversity in agriculture
- Natural coastal belt (West Coast)
- Infrastructure: Road infrastructure include major national (N7) and regional (R27, R45) road which improve movement and connectivity in the region
- 'Economy
- The three biggest economic sectors contributing to employment are Agriculture providing 35% of employment opportunities whilst General Government and Community, Social and Personal Services provides 27% employment opportunities followed by Commercial services providing 26%.
- The biggest contributors to Gross Value Added (and GDP) are Agriculture, Forestry and Fishing with 26.2%, Wholesale and Retail Trade, Catering and Accommodation Services with 17.4% and Finance, Insurance and Business Services with 15.4%. Intensive Agriculture takes place along the Oliphant's River and on the Sandveld plains.

The weaknesses in the Cederberg are:

- Maintenance of Infrastructure: To maintain and upgrade infrastructure and provide for future development including state subsidized housing requires a great deal of capital.
- Land Demand and Shelter: The 2006 Vacant Land Audit and the 2015 Human Settlement Plan concluded that land for future growth is under provided for with 746ha over the next 25 years (till 2030). Whilst sufficient provision was made in Clanwilliam and Lamberts bay for future expansion, there is a lack of land in Citrusdal as per the SDF proposals. The lack of land includes land for industrial uses. The housing backlog in 2015 was 5399 households in need of housing.
- Low levels of income: The most significant challenge in alleviating poverty is to achieve access to the economy as has been demonstrated by the 11.3% or 1673 households that earn less than R400 in 2015 Lower levels of household income increase the dependency on municipal support which strains municipal resources in an effort to provide free basic services. The Gini Coefficient reflecting income inequality is: 0.64 meaning the income generated in the Cederberg is mainly received by less than half of the households in the Cederberg. The Dependency ratio is 46.8% or 2:1 which reflects the number of working age population (aged 15 to 64) to dependants (aged zero to 14 and over the age of 65).
- Drop outs: With the average school dropout rate in the Cederberg being recorded as 41.6% in 2015, access to early childhood development for children aged seven and fourteen (7-14) becomes imperative.
  Note that the literacy rate (successful completion of a minimum of seven years of formal education for those 14 years of age and older) in the Cederberg is 72.6%. The Human Development Index in the Cederberg is 0.67 whilst 0.71 in the WC. The Human Development Index is based on measures of life expectancy, literacy and income where a maximum level of 1 indicates a high level of human development.

The threats to the Cederberg are:

- Economic Globalisation:
  Machination and technology require less labour and well skilled labour to stay competitive.
- Climate Change: Climate change causes changes to precipitation, seasons, micro-climates and habitat stability and it is projected that the changes will impact negatively on the region and thus on the economy, natural resources and social sectors in the Cederberg.
- Urbanization and thus housing: The Cederberg households increased from 13 978 (2011) to 14 808 (2015). As a high percentage of these households are dependent on state subsidized housing, the challenge is to create compact liveable urban areas.
- Affordable water: Providing affordable potable water is another challenge, as the coastal towns do not have sufficient water sources. Desalination has been introduced but the maintenance of such a plant is expensive.
- Sufficient electricity: Clanwilliam does not have sufficient electrical capacity and funding to secure electrical capacity is not forthcoming.
- Poverty and unemployment

The opportunities for the Cederberg are:

- Access value chains: The Cederberg Municipal area, although not next to the Cape Metropolitan Municipality (CPT) has easy access to ports (air and sea) as the N7 dissects the region, linking Namibia and Southern Africa, whilst the R27 links to the Saldanha Municipal area (WC014) with its eminent IDZ to the region.
- Access to information: Information is driving the economy of the future and in order to drive economic growth in the Cederberg, access to information should be to be prioritized.
- Governance and regulation: The proclamation of SPLUMA provided Cederberg municipality with delegated powers. As the Municipality was one of the forerunners to develop its own By-law and integrated Scheme Regulations, and are therefore in a position to govern and regulate development to enable economic growth and establish Cederberg as a place to invest.
- Education: Cederberg is home to a West Coast College Head satellite campus, which is located in Citrusdal. Supporting the development of a University in the region would be the next move to elevate education levels.
- World economy: Driven by globalization, Cederberg is home to several industries and business that export either to the rest of South Africa or to the world. Through its red tape reduction programme Cederberg can enable businesses to be internationally competitive and can regulate and manage the provision of sufficient industrial and commercially zoned land. There is a lack of industrial land particular in Citrusdal.
- World nature conservation initiatives: The Cederberg Conservation Area and future links to conservation areas outside the municipal area.

Cederberg Municipality will have to rely on partnerships to build on its strengths, turn around weaknesses and overcome threats and utilise opportunities:

These strengths, weaknesses, opportunities and threats translated into the spatial objectives.

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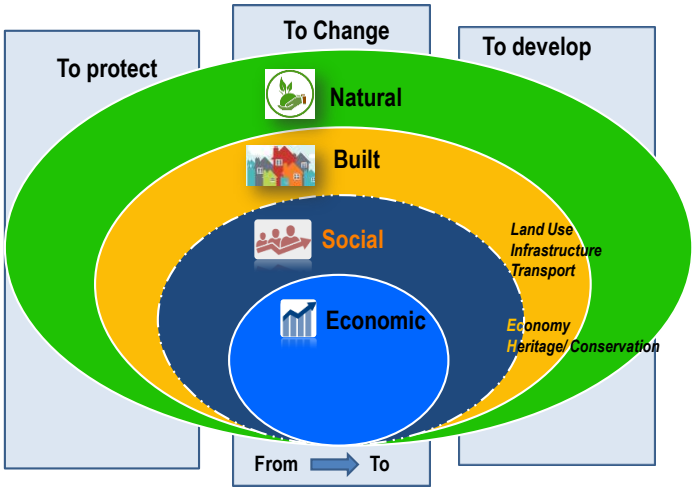
Spatial Objectives

The overall spatial objective of the Cederberg Municipality is **to develop and protect sustainable, liveable settlements and rural environments**. The following table provides the definitions and features to provide a clear directive of the terms liveable and sustainable.

Definition	Features
Liveable Environments *(Relationship between people and their settlements - present)* *A liveable settlement satisfies more than the basic needs of the communities – it refers to the extent to which the individual as well as the community's needs for social facilities and health facilities are met. It also is closely related to the quality of life and the level of*	*Liveable environments are recognized by:* • *Economic growth (economic) – creation of economic, social, cultural and recreational opportunities; provision of mixed uses; the availability of or opportunities to create a variety of services, educational facilities, recreational and job opportunities; provision of different housing typologies and densities.* • *Accessibility (social) – easy access to opportunities and facilities - work/education facilities/housing and*

satisfaction that is experienced by the residents of towns and settlements. (van Kamp et al, 2003)	*recreational facilities are easily accessible and close together; prioritise the incorporation of public transport and pedestrian friendly routes within the movement network to reduce the dependency on motor vehicles.* • *Place Identity (natural & built) – create urban environments with unique place identity that reflect the natural and cultural context that become part of people's perception of the place; access to open space areas of high quality, scale vs. locality are used to arrange elements to create a place identity (Behrens, R & Watson, V, 1996)*
Sustainable Settlements *(Relationship between settlement and environment – future)* *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 improve the liveability of a settlement by reducing the impact on the environment through reduced use of resources and the generation of less waste -*	*Balancing between the three pillars of sustainability:* • *Ecological integrity (Planet) – the continued ability of the natural and built environment to provide in, and continue to provide in all the earthly needs.* • *Social Justice (People) - material wellbeing (no poverty) and provision of physical and moral wellbeing in which a complex society and ecology can continue to exist and improve. Rectify the spatial legacy of Apartheid.* • Economical Effectiveness (Prosperity) – optimising benefits through reduced costs, which include social costs. 

The following spatial objectives for the different environments in the Cederberg emerged:

Bio-physical Environment:

To determine conservation and development borders, overlay zones for natural areas (valleys and mountains), agriculture, water catchment and sources, and heritage areas.

Socio-economic Environment:

To stimulate the economy and alleviate poverty by focussing on regional exports and the creation of tourist and agri-industrial corridors (i.e. rural development and climate change corridors).

To Encourage the social up-liftment in the Cederberg through the provision of housing and ownership, the creation of effective and safe living environments and supporting economic opportunities in the area.

Built Environment:

To provide sufficient bulk infrastructure to service the expanding housing and industrial demand.

To be supportive of the rural areas by encouraging transport networks, education and access to information through the electronic media.

To protect the integrity of the smaller towns.

To support the movement to seek alternative energy generation methods.

The spatial objectives translated into themes and strategies.

Spatial Themes and Strategies

To develop an implementation plan, six spatial themes were identified from the Status Quo report, SWOT analysis and the Overall Strategic Objective supporting the four pillars of sustainable development:

CEDERBERG SPATIAL DEVELOPMENT FRAMEWORK – 2017 - 2022	
SPATIAL THEMES	**STRATEGIES**
THEME 1 **Maximize Economic Opportunities and Comparative advantages** Facilitate economic sector growth (including mining, agriculture, tourism, commercial and industry) in accordance with their potential.	**Strategy 1**: Support growth in areas of economic potential. **Strategy 2**: Grow and diversify the agricultural sector through support of alternative and intensive uses like agri-processing, agri-tourism, product development and support of smaller agricultural units. **Strategy 3**: Support agri-industry corridors. **Strategy 4**: Development and support of urban and rural based Tourism development. **Strategy 5**: Spatially strengthen mobility and economic links.
THEME 2 **Enable sustainable Rural and Agricultural Development** Support the Cederberg as a primary agricultural	**Strategy 2**: Grow and diversify the agricultural sector through support of alternative and intensive uses like agri-processing, agri-tourism, product development and support of smaller agricultural units.

production area in the West Coast region and in Western Cape. Capitalize on existing agricultural activities and support diversification in the agricultural sector. Promote land reform and urban agriculture to support food security.	**Strategy 3**: Support agri-industry corridors. **Strategy 6**: Support food security through protection of agricultural resources, supporting smaller agricultural units, facilitation of land reform and urban agriculture.
THEME 3 **Enhance Environmental Conservation and Cultivation** Recognize and strengthening of the natural assets within the Cederberg and the role they play in the local ecosystem and economy of the region. Strengthening of the connectivity between natural habitat areas in rural and urban areas with support of open space corridors. Recognize and plan for the potential threat that climate change might have on the natural and manmade environment. Consider the sustainable utilization of the natural resources in effective way – allow for alternative energy generation (wind/sun/water), harvesting of wild flowers and wildlife in sustainable way, uses to support agri-tourism such as resort developments in conservation areas.	**Strategy 7**: Maintain the alignment of development with bio-regional land use initiatives and consider sustainable utilization of natural resources. **Strategy 8**: Ensure integrated management, strengthening and protection of the natural and cultural visual landscape in the Cederberg. **Strategy 9**: Protection of water resources and water catchment areas in the Cederberg.
THEME 4 **Protection of Cultural and Heritage Resources** Recognize and protect the historical and scenic landscape of the Cederberg and the historical fabric of urban settlements. Acknowledge the importance of heritage resources and manage the impact of development and support the potential that these resources have on the local economy (for example support cultural festivals and open days in rural areas)	**Strategy 8**: Ensure integrated management, strengthening and protection of the natural and cultural visual landscape in the Cederberg. **Strategy 10**: Protect and develop the potential of Cultural and Heritage significant features in urban and rural areas.
THEME 5 **Spatially enable Sustainable Settlements** Provide integrated employment opportunities to support sustainable livelihoods. Facilitate sustainable growth of urban areas in accordance with their growth potential. Effective planning of	**Strategy 11**: Provision of sustainable infrastructure and services. **Strategy 12**: Facilitate the smart growth of Cederberg towns (vibrant activity streets, integration, restructuring, densification, facilitate the provision of business and industrial opportunities, promote clustering and integrated

bulk infrastructure to support urban growth. Promote social development, safe communities, and integrated facilities through the sustainable delivery of social facilities, open spaces, recreational opportunities and housing.	provision of public sport facilities, create liveable and safe neighbourhoods). **Strategy 13**: Facilitate the provision of adequate development areas for public and private residential development.
THEME 6 **Support Safe, Healthy and Sustainable Communities** Promote social development in all areas to create safe and sustainable community life. Support risk management and law enforcement to provide safe living environments.	**Strategy 12**: Facilitate the smart growth of Cederberg towns (vibrant activity streets, integration, restructuring, densification, facilitate the provision of business and industrial opportunities, promote clustering and integrated provision of public sport facilities, create liveable and safe neighbourhoods). **Strategy 14**: Provide for adequate social infrastructure to support communities (and bulk infrastructure and sewerage). **Strategy 15**: Effective management of and reducing natural and man-made disaster risks.

Development proposals per Cederberg towns:

The themes and strategies translate into the following development proposals for Cederberg towns

- Clanwilliam: As regional and service centre development proposals include
  a) Provide sufficient zoned land for industrial and commercial development,
  a) Provide sufficient zoned land for residential development
  c) Balance protection of heritage resources and industrial development
  d) Enhance tourism and agri-tourism
- Citrusdal: As agricultural service centre development proposals include:
  a) provide sufficient zoned land for industrial and commercial development and enhance agri-processing
  b) provide sufficient zoned land for residential development
  c) protect heritage and culture of the Cederberg as the citrus capital of the Western Cape,
  d) capitalise on N7 connectivity
- Graafwater: As small rural town and its surrounding to be enhanced as agricultural service centre and the enhancement of agri-processing.
- Leipoldtville: A rural settlement enhanced as agri-tourism node
- Elands and Lamberts Bay: A coastal town that change from a fishing village to potato processing: and development proposals include:

a) Enhance tourism and agri-tourism

b) Rejuvenate fishing industry and enhance industrial activity.

c) Conserve natural resources and protect heritage resources

- Wuppertal: As agricultural mission station:

  a) Strengthen agricultural service activity;

  b) Strengthen tourism and agri-tourism in the surroundings.

  c) Enhance the integration of agriculture and conservation.

Development proposals for the Cederberg region:

- Develop the N7 rural and intensive agricultural corridor along the Oliphant's River.
- Expand the Cederberg Nature Reserve Area.
- Develop a precinct plan for the Verlorenvlei.
- Develop the biodiversity corridor between the Cederberg Nature reserve area and the coast and a second corridor along the coast.
- Develop rural and urban tourism.

These proposals conclude the spatial plan for the Cederberg.

Using SDF document

The document should not be read in isolation as the SDF consist of a package of documents:

THE SDF PACKAGE OF PLANS		
Cederberg ***Integrated Development Plan*** *2017-2022*	***Sector Plans****:* • *Cederberg Human Settlement Plan, 2014* • *Infrastructure Master Plan* • *Local Economic Development Plan, 2016* • *Concept Safety Plan.* • *Risk Management Plan* • *Transport Master Plan*	
	Cederberg ***SDF Status Quo*** *Report, 2016* *Cederberg* ***SDF Report****, 2017-2022*	***SDF Addendums*** • *Cederberg Vacant Land Audit, 2006.* • *Cederberg Climate Change and Hazard Risk Areas Study, 2014.* • *Draft Coastal Management/Setback lines for the West Coast District, June 2014.*

The documents listed above should also be considered when and should any major development proposals being planned or considered.

Cederberg Spatial Development Framework 2017 – 2022

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF MAPS

LIST OF GRAPHS

CHAPTER 1: SDF Purpose, Principles and Project Plan

This chapter states the purpose of the Spatial Development Framework, detail the principles required to be applied to achieve the desired spatial form and outlined the project plan to compile the SDF.

1.1 Purpose

The purpose of the Cederberg Spatial Development Framework (SDF) is to guide growth and development in the municipal area or space in a sustainable manner. Hence, future growth, development and land use planning depart from a vision and principles that underscore the protection, development and change of integrated, sustainable settlements and liveable environments to enable economic and social prosperity.

The purpose of the amendment of the Cederberg SDF is to align the SDF with new legislation, policies and plans i.e.

a) With National and Provincial legislation and policy, including the regulations as provided in the national Spatial Planning and Land Use Act, Act 16 of 2013 (SPLUMA) and the Provincial Land Use Planning Act, Act 3 of 2014 (LUPA).

b) With the third generation Cederberg Integrated Development Plan to ensure the depiction of the IDP proposals with spatial implications

The amendment of the SDF follows the development cycle of the third generation IDPs.

1.2 Status of the Cederberg SDF

The Cederberg Spatial Development Framework (SDF), 2012-2017, approved as a component of the Cederberg IDP in terms of Section 26(e) of the Municipal Systems Act, Act 32 of 2000, has to be revised every five years as stipulated in the Municipal Systems Act and the Land Use Planning Act No 3 of 2014. Annual additions are also allowed for.

The amendment of the SDF bring about the alignment thereof in accordance with the National Spatial Planning and Land Use Act, Act 16 of 2013 (SPLUMA), Sections 12 and 21 and the Provincial Land Use Planning Act, Act 3 of 2014 (LUPA), Section 11. In order to ensure integration of IDP proposals and their spatial implications, the amendment forms part of Cederberg Integrated Development Plan (IDP) development cycle according to the prescribed procedure as per Section 7 of the Cederberg Municipality Land Use Planning By-Law.

On completion, the amended Cederberg SDF will be approved in accordance with Section 20 (1) of SPLUMA.

The amendment process consists of five phase:

a) Update of status quo report.

b) Revise spatial concept and vision

c) Conduct Spatial Analysis (Policy, Sector Plans and Status Quo) and Synthesis

d) Develop Conceptual Framework, revise strategies and implementation actions

e) Achieve support for draft SDF & Integrate public comment

f) Obtain approval for SDF

The table below provide a visual representation of the SDF Package of Document.

<table>
<tr><td colspan="4">PACKAGE OF DOCUMENTS</td></tr>
<tr><td colspan="4">Integrated Development Plan 2017 – 2022</td></tr>
<tr><td colspan="4">Status Quo Report 2016</td></tr>
<tr><td colspan="4">Sector Plans</td></tr>
<tr><td>Human Settlement Plan, 2015</td><td>Local Economic Development Plan</td><td>Infrastructure Master Plan</td><td>CEDERBERGSDF 2017 - 2022</td></tr>
<tr><td>Financial Plan</td><td>Concept Safety Plan</td><td colspan="2" rowspan="2">SDF Addendums
1. Cederberg Vacant Land Audit, 2006
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<tr><td>Integrated Master Transport Plan</td><td>Risk Management Plan</td></tr>
</table>

Table 1: SDF Package of plans

1.3 Spatial Context

Cederberg Municipality (WCO12) is located on the West Coast of the Western Cape Province and form part of the West Coast District Municipality. The municipal area is eight thousand square kilometres (8,007 km²) in extent in extent, constituting 25.7% of the West Coast District.

The Cederberg Municipal area stretches from the Atlantic seaboard on the west to the Cederberg on the east.

Cederberg Municipal area (WCO12) is divided into 6 six Wards, of which some ward boundaries were adjusted by the Municipal Demarcation Board for the 2016 elections.

Figure 1 identifies the new 2016 ward demarcation.

Figure 1: Cederberg Wards

The Cederberg municipal area has 6 town and some rural settlements (refer to Figure 1 and the table below). Clanwilliam (the administrative centre of the municipality, (Ward 3), Citrusdal as a major town and gateway into the municipality (Ward 2), Lamberts Bay and Elands Bay as coastal towns and tourism nodes (Both Ward 5), Graafwater as an agricultural service centre (Ward 4), Paleisheuwel and Sandberg as former sidings (Ward 4) and Wuppertal and Algeria as rural and forestry settlements (Ward 6), Leipoldtville as agricultural settlement (Ward 5), and Elandskloof (Ward 1) as rural settlement.

Ward 1	Elandskloof and Citrusdal Farms
Ward 2	Citrusdal
Ward 3	Clanwilliam
Ward 4	Graafwater and Sandveld
Ward 5	Elands Bay, Lamberts Bay and Leipoldtville
Ward 6	Wupperthal and Algeria

On the boarders of Cederberg are Bergrivier (WC013) and Witzenberg Municipalities, south, Matzikama (WC011) north and Hantam Municipality, east.

Cederberg links the most northern part of the West Coast Region to the municipalities in the Southern part of region i.e. Bergrivier, Saldanha and Swartland, not only spatially but by means of good transport routes such as the R27 along the West Coast, the N7 main route to Northern Cape and Namibia.

1.4 Vision of the IDP

The vision of Cederberg Municipality is: "A development-centred municipality committed to the eradication of poverty, rural development and excellence in service delivery."

1.5 Values and Principles

1.5.1 Values

The eight Batho Pele principles are valued by Cederberg Municipality are:

- Consultation: citizens should be consulted about their needs
- Standards: all citizens should know what service to expect
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This set of principles together with structural principles creates patterns such as scale, flexibility and intensity of use of space that are desirable.

1.5.2 Structural Principles

The structural principles to be applied to all development proposals are as follows:

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- Connectivity within towns and between towns (movement networks & activity axis and streets), corridor development
- Discontinuity of movement and built form
- Homogeneity and Heterogeneity (same use and mixed use)(intensity of use: structural patterns)

1.5.3 Spatial Bioregion Planning Categories

The Spatial Bioregion Planning Categories have its origins in the Bioregion Planning framework that are endorsed by UNESCO. Bioregions can occur across local authority areas in order to provide meaningful geographical areas with common interest. An example of such a bioregion is the Oliphant's River that flows through various local authorities within the Western Province, with the total length of the river from its origin to the mouth that can be accommodated within one bioregion. 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.

These Bioregional Planning Categories, as adopted and adjusted by the Department of Environmental Management and Development Planning to Spatial Planning Categories, will also be adopted in the Cederberg SDF. All urban and rural areas within the Cederberg will be categorised using the following spatial bioregional planning categories.

Core		Buffer		Transition			Intensive	Human Settlement
Core 1	Core 2	Buffer 1	Buffer 2	Transition 1	Transition 2	Transition 3		

Figure 2: Spatial Bioregional Planning Categories

A description and recommended land use activities of the Spatial Planning Categories (SPC) and subcategories that can be applied follows:

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

Category	Description	Recommended Land use activities
Core	Areas with high conservation value and area located within the rural landscape that has to comply with biodiversity patterns and ecological processes. These areas contain habitat areas that are irreplaceable as well as critically threatened areas in the rural landscape that include vlei, river, wetlands and marine habitats. A distinction is made between Core 1 and Core 2 areas	
Core 1	Areas with formal conservation status: • National Parks and Provincial Nature Reserves. • Mountain Catchment areas and Forest areas. • Critically endangered areas and biodiversity	Essentially 'no go' areas from a development perspective. Accordingly they should, as far as possible, remain undisturbed by human impact. • Only non-consumptive activities are permitted, for example, passive recreation and tourism (hiking trails, bird watching) religious ceremonies, research and environmental education. • Only non-impact directly related activities such as research, outdoor recreation and environmental education should occur within Core 1 areas. Buildings directly related to the permissible activity should be confined to the minimum required to accommodate those activities that cannot be located outside the Core 1 areas. • No further extensions of Intensive Agriculture into Core 1 areas should be permitted.

	areas.	• No further development in Core 1 areas may be permitted except that fine scale delineation of Spatial Planning Categories in national parks, provincial nature reserves and private nature reserves should identify areas where buildings, including for accommodation and staff residence, should be located. • Land consolidation should be encouraged and subdivision prohibited.
Core 2	Critically endangered habitat areas and which contain: • Ecological Corridors: linking existing Core 1 areas with each other to form an ecological network, e.g. West Coast Corridor. • River Corridors: the main streams of all rivers and tributaries that need to be protected from urban development and agricultural cultivation by maintaining a 30 meter river corridor.	Biodiversity compatible and low impact conservation land uses as per Core 1areas, but allowing for a limited increase in scale of development in less sensitive areas. • Where existing agricultural activities (e.g. livestock) occur in Core 1 and Core 2areas, it needs to be subject to: ✓ Lower impact practices; ✓ Lower than standard stoking rates; ✓ Rotational grazing; ✓ Wetland & river bank protection to avoid overgrazing, trampling and destabilization; ✓ Avoid areas containing red data species; ✓ Limit "value adding" to nature based tourism; • No further extensions of intensive or extensive agriculture
Buffer	Buffer areas consist of large areas where natural vegetation is still in place but which is not defined as critical biodiversity areas and ecological support areas.	
Buffer 1	Consist of threatened areas or biodiversity areas that are not seen as Core areas. These areas can be utilised for limited extensive agriculture.	Conservation activities as per Core 1 and 2 areas including sustainable consumptive or non-consumptive uses. • 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 comprising extensive game and livestock farming, subject to the following: ✓ Lower impact practices be favoured (e.g. indigenous game farming as opposed to domestic livestock farming) ✓ Lower than standard stocking rates are employed. ✓ Resting cycles ✓ Wetland & river bank protection to avoid overgrazing, trampling and destabilization ✓ Avoid areas containing red data species

		✓ Strictly limited "value adding" through intensified tourism (e.g. resort or recreational facilities or consumptive uses e.g. hunting) • Extension of extensive agriculture may be accommodated if accompanied with biodiversity offsets.
Buffer 2	Vulnerable and less threatened biodiversity areas where extensive agricultural uses are allowed.	Activities and uses directly related to the primary agricultural enterprise, including a homestead, agricultural buildings and worker accommodation. • Additional dwelling units including: ✓ units approved under the agricultural-land policy equating to 1 additional non-alienable dwelling unit per 10ha to a maximum of 5 per agricultural unit ✓ Units permissible in terms of rural residential development. • Additional land uses to facilitate diversification and value-adding including: ✓ small scale holiday accommodation (farm stay, B&B, guesthouse, boutique hotel); ✓ restaurant, lifestyle retail, venue facility ✓ farmstall & farm store; ✓ home occupation; ✓ local product processing (e.g. cheese making), and ✓ Tourist and recreational facilities (e.g. hiking trail, 4x4 routes). • Limit fragmentation of farms with rezoning and consent uses to be utilized to accommodate non-agricultural uses. • On-farm settlement of farm workers, using existing housing stock or upgraded hostels. • Buffer 2 areas within the "fringe" of urban settlements to accommodate the following uses not suited to locate within the urban edge: ✓ space extensive requirements (e.g. regional sports & recreation facilities tourist facilities) ✓ nuisance and buffer requirements (waste water treatment plants, cemeteries, solid waste disposal sites, airports, feedlots, quarries and mines, truck stops, renewable energy projects)
Intensive Agriculture	Represent existing intensive agricultural uses and possible future intensive agricultural use areas. Consist of areas with homogenous agricultural uses that include cultivated land. The intensive agricultural uses include: • Production under	Activities and uses directly related to the primary agricultural enterprise • Farm buildings and associated infrastructure (e.g. homestead, barns, farmworker accommodation, etc.). • Additional dwelling units approved under the policy of 1 additional non alienable dwelling unit per 10ha, up to a maximum of 5 per farm. • Ancillary rural activities of appropriate scale that do not detract from farming production , that diversify farm income, and add value to locally produced products, e.g.: ✓ small scale rural holiday accommodation (e.g. farm stay, B&B, guesthouse, boutique hotel); ✓ restaurant, rural lifestyle retail, function venue facility, farmstall and farm store;

	irrigation, • Dryland production areas, • Plantation.	✓ home occupation (farm product processing); ✓ local product processing (e.g. winery, olive pressing), and ✓ Rural recreational facilities (e.g. riding school). • Large scale resorts and tourist and recreation facilities should not be accommodated within Intensive Agriculture SPC as they detract from the functionality and integrity of productive landscapes. • Intensive feed-farming should not be accommodated in Intensive Agriculture SPC due to their operational impacts (e.g. odour and traffic).
Human Settlement	Include all the large and smaller towns as well as all other forms of human settlement.	• Agricultural activities of excessive scale 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". These activities include: ✓ Off-farm residential development and farm worker accommodation; ✓ Agricultural industry (e.g. wine bottling plant) and regional product processing (e.g. fruit cannery); ✓ Institutions (e.g. jail, rehabilitation centre); ✓ Agricultural colleges and schools; ✓ Large scale tourist accommodation; ✓ Service trades; ✓ Renewable energy projects; ✓ Footloose business, including farming cooperatives, agricultural requisites and filling stations; • Where possible, existing settlements should be used to accommodate non-agricultural rural development activities and facilities. This is for reasons of. ✓ Local economic development, consolidating, integrating and reinforcing settlement structure, improving service delivery, strengthening rural-urban linkages, promoting socio-economic development and increasing thresholds for service delivery and social facilities.

(Source: Department of Environmental Affairs and Development Planning)

1.5.4 Coastal Management Lines

Long term and intensified impacts of continuous economic growth, population growth and climate change will have the most prominent impacts along the coastline. Despite climate change increasing the abrasive nature of wave action and storm event, the onshore areas will remain host to the majority of the Western Cape's population. The coast has become a space of growing conflict between the need for human habitation and natural resources protection. As a result a coastal set-back or management line (by Royal Haskoning DHW, 2014) was developed for the West Coast District as one of the strategies through which responsible coastal management can be promoted. This line is applicable to Cederberg's Ward 5.

The use of coastal management/setback lines protect against risk, force proactive planning of future development and how existing development is maintained. It cannot address historical decisions that have locked in development along potentially risky coastal areas.

The following coastal features were considered along the costal risk zone in order to determine the costal management/setback line:

- *Environmental buffers* required inland 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 Mussel and Baboon Point and Doorspring/ Soopjeshoogte.

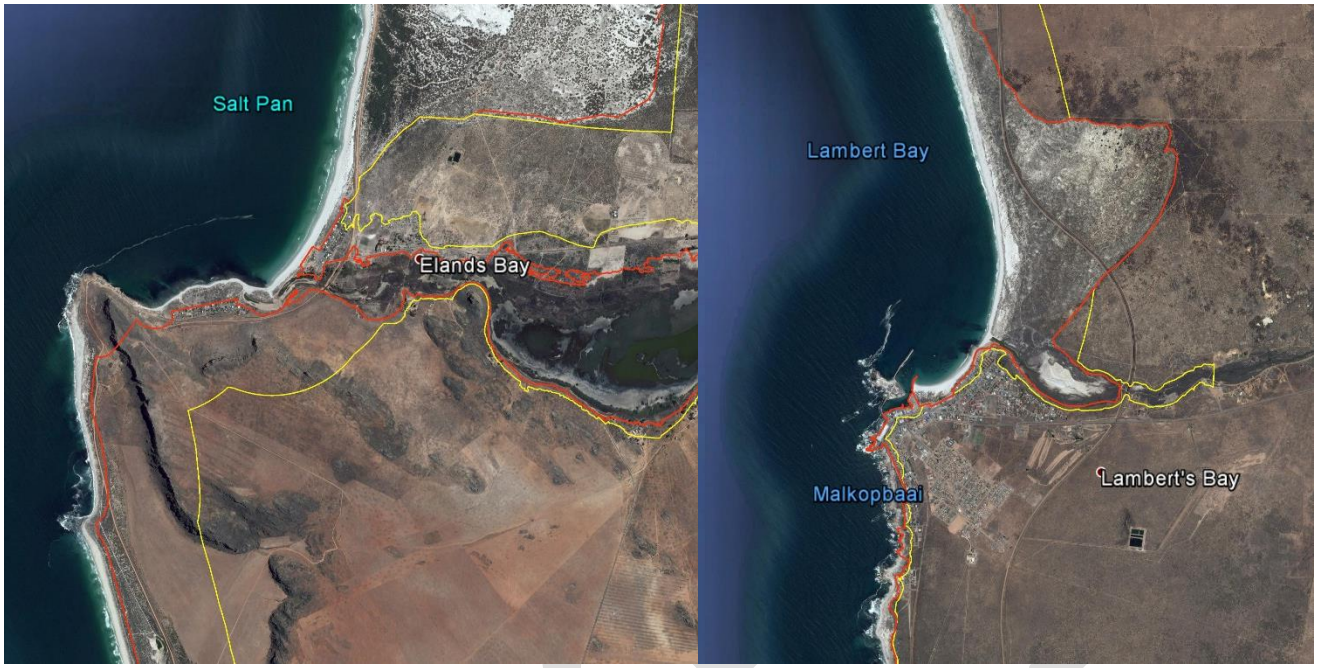
Social Buffers			
Heritage resource	**Description**	**Location**	**Action/comment**
Mussel Point Midden & Baboon Point	Archaeological and rock art sites	Baboon Point, Elands Bay	CML to run landward of proclaimed heritage area Further heritage assessments required before CML is amended to include Mussel Point sites
Doorspring / Soopjeshoogte	Shell middens x3 Soopjeshoogte	Private Nature Reserve, north of Lamberts Bay	Not a concern. The heritage impact assessment from 1994 for the northern part of the development recommended that development proceed.

**CML - Coastal Management Line*

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

This Concept Coastal management/setback line for the West Coast region is included in the Cederberg SDF in order for the municipality to take informed decisions when considering development proposals along the coastline of the Cederberg.



Map 1: Coastal Management Setback line and zone in Elands Bay and Lamberts Bay

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

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.***

Figure 3: Examples of application of risk zone overlay

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.

1.5.5 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,

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.

With the integration of the proposed Coastal Management lines in the Cederberg SDF the municipality is starting the effective process of implementing the management lines with further inclusion in the Cederberg Integrated Zoning Scheme with identification and adoption of the Coastal Overlay Zone that is required.

1.6 Structure of the Report

The SDF provides the Municipality with the appropriate instrument to shape its spatial form through effective management of future development in a balanced and sustainable manner. The SDF comprises of the following five chapters:

- Chapter 1: Purpose and Scope of SDF, Spatial Principles and Project Plan
- Chapter 2: Strengths, Weaknesses, Opportunities and Threats, Spatial Vision and Goals
- Chapter 3: Spatial Analysis (Policy Informants, Sector Plans, Status Quo – Structuring elements) and Synthesis (Spatial Planning Patterns)
- Chapter 4: Objectives, Strategy and Conceptual Framework
- Chapter 5: Spatial Proposals, Sub-Area Proposals and Implementation Plan

CHAPTER 2: Issues, Vision and Goals

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

2.1 Priorities of Cederberg Ward Committees

Cederberg conducted a need survey in 2016, with the needs identified listed below:

Priority	No	Priority	No
Housing		Parks and public amenities	
Health		Agriculture	
Education		Sewerage	
Business and local economic development		Electricity	
Public safety / law enforcement		Street lighting	
Sport and recreation		Conservation (natural & built environment)	
Roads and storm water		Public transport	
Community development		Refuse removal	
Cemeteries		Water	
Fire and emergency services		Social amenities	

Table 3: Ward Issues

The five priority issues for each ward are listed below:

Ward 1 & 2	
CITRUSDAL	
Local Government	**Provincial & National Government**
1. Low Cost Housing	1. Economic Development
2. Roads & Storm water	2. Education
3. Economic Development	3. Crime/Safety & Security
4. Gap Housing	4. Health
5. Electricity	5. Sports

Ward 3		Ward 4	
CLANWILLIAM		GRAAFWATER	
Local Government	**Provincial & National Government**	**Local Government**	**Provincial & National Government**
1. Low Cost Housing	1. Economic Development	1. Economic Development	1. Economic Development
2. Economic Development	2. Health	2. Low Cost Housing	2. Health
3. Roads & Storm water	3. Education	3. Roads & Storm water	3. Education
4. Electricity	4. Crime/Safety & Security	4. Electricity	4. Sports
5. Gap Housing	5. Sports	5. Gap Housing	5.Support Emerging Farmers

Ward 5			
ELANDS BAY		**LEIPOLDTVILLE**	
Local Government	**Provincial & National Government**	**Local Government**	**Provincial & National Government**
1. Low Cost Housing	1. Economic Development	1. Low Cost Housing	1. Health
2. Economic Development	2. Health	2. Economic Development	2. Economic Development
3. Gap Housing	3. Education	2. Electricity	3. Sports
4. Roads & Storm water	4. Crime/Safety & Security	2. Sewerage	4. Education
5. Electricity	5. Sports	5. Gap Housing & Roads & Storm water	5.
LAMBERTS BAY			
Local Government	**Provincial & National Government**		
1. Low Cost Housing	1. Crime/Safety & Security		
2. Roads & Storm water	2. Education		
3. Gap Housing	3. Economic Development		
4. Economic Development	4. Health		
5. Electricity	5. Sports & Support Emerging Farmers		
Ward 6			
WUPPERTHAL			
Local Government	**Provincial & National Government**		
1. Electricity	1. Health		
2. Economic Development	2. Economic Development		
3. Roads & Storm water	3. Education		
4. Low Cost Housing	4. Sports		
5.Gap Housing & Potable Water	5.		

Table 4: Five priorities per Ward

2.2 Strengths, Weaknesses, Opportunities and Threats

To strategically shape spatial planning in the Cederberg region, an understanding of the existing challenges and opportunities are required. A synthesis of the Status Quo report (as per SDF 2012 – 2017) as well as discussions with municipal departments and ward councillors outlined the following strengths, weaknesses, opportunities and threats:

Opportunities	**Threats**
Access value chains - IDZ in Saldanha - Access to Cape Town Access to information Governance and regulation (SPLUMA) Education - West Coast College Campus World economy World nature conservation initiatives	Economic Globalization Climate change Urbanization - population increased to 52 198 people (2015) of which 50% is urbanized Expensive Potable Water (Coastal Towns) Insufficient electricity provision Poverty

Strengths	Weaknesses
Settlements - Growth towns/ Service Centres (Clanwilliam - regional, Citrusdal - agricultural and Elands and Lamberts Bay – agricultural and agri - tourism) - Tourism nodes (Elands and Lamberts bay) Water Sources/ Courses - Oliphant's River Land Cover - Mountains & Hills: Cederberg - Diversity in agriculture; - Unique produce i.e. Rooibos tea - Natural coastal belt (West Coast) Infrastructure - Roads (N7, R27) Economy - Agriculture is the highest contributor to employment - Agriculture is the highest contributor to GDP	Maintenance of Infrastructure Shelter - Housing backlog Unemployment - Low levels of income - School drop outs - Dependency on subsidies

Table 5: SWOT Analysis

The strengths of the Cederberg are:

Settlements

- Growth towns/ Service Centres:
    - Clanwilliam as regional, Citrusdal as agricultural and Elands and Lamberts Bay as agricultural and agri - tourism) centre
- Grow tourism node: Elands and Lamberts Bay
- Urban Edges: guide and control orderly development of the built environment and are demarcated for five (5) and twenty (20) periods years in accordance with the planning principles as advocated in SPLUMA and LUPA. The urban edges of the towns in the Cederberg protect high value agricultural land and encourage compact urban form, spatial integration whilst providing for additional land to address the future urban growth.

- Water Sources
- The Oliphant's River supports agriculture and tourism activities along the river. The Riet River runs at the back (western side) of the Cederberg mountains.

- Land Cover
- Mountains & Hills: Cederberg, Oliphant's River Mountains and Skurwe mountain range
- Diversity in agriculture
- Natural coastal belt (West Coast)

- Infrastructure: Road infrastructure include major national (N7) and regional (R27, R45) road which improve movement and connectivity in the region

- 'Economy

- The three biggest economic sectors contributing to employment are Agriculture providing 35% of employment opportunities whilst General Government and Community, Social and Personal Services provides 27% employment opportunities followed by Commercial services providing 26%.
- The biggest contributors to Gross Value Added (and GDP) are Agriculture, Forestry and Fishing with 26.2%, Wholesale and Retail Trade, Catering and Accommodation Services with 17.4% and Finance, Insurance and Business Services with 15.4%. Intensive Agriculture takes place along the Oliphant's River and on the Sandveld plains.

The weaknesses in the Cederberg are:

- Maintenance of Infrastructure: To maintain and upgrade infrastructure and provide for future development including state subsidized housing requires a great deal of capital.
- Land Demand and Shelter: The 2006 Vacant Land Audit and the 2015 Human Settlement Plan concluded that land for future growth is under provided for with 746ha over the next 25 years (till 2030). Whilst sufficient provision was made in Clanwilliam and Lamberts bay for future expansion, there is a lack of land in Citrusdal as per the SDF proposals. The lack of land includes land for industrial uses. The housing backlog in 2015 was 5399 households in need of housing.
- Low levels of income: The most significant challenge in alleviating poverty is to achieve access to the economy as has been demonstrated by the 11.3% or 1673 households that earn less than R400 in 2015 Lower levels of household income increase the dependency on municipal support which strains municipal resources in an effort to provide free basic services. The Gini Coefficient reflecting income inequality is: 0.64 meaning the income generated in the Cederberg is mainly received by less than half of the households in the Cederberg. The Dependency ratio is 46.8% or 2:1 which reflects the number of working age population (aged 15 to 64) to dependants (aged zero to 14 and over the age of 65).
- Drop outs: With the average school dropout rate in the Cederberg being recorded as 41.6% in 2015, access to early childhood development for children aged seven and fourteen (7-14) becomes imperative.
  Note that the literacy rate (successful completion of a minimum of seven years of formal education for those 14 years of age and older) in the Cederberg is 72.6%. The Human Development Index in the Cederberg is 0.67 whilst 0.71 in the WC. The Human Development Index is based on measures of life expectancy, literacy and income where a maximum level of 1 indicates a high level of human development.

The threats to the Cederberg are:

- Economic Globalisation:
  Machination and technology require less labour and well skilled labour to stay competitive.
- Climate Change: Climate change causes changes to precipitation, seasons, micro-climates and habitat stability and it is projected that the changes will impact negatively on the region and thus on the economy, natural resources and social sectors in the Cederberg.
- Urbanization and thus housing: The Cederberg households increased from 13 978 (2011) to 14 808 (2015). As a high percentage of these households are dependent on state subsidized housing, the challenge is to create compact liveable urban areas.
- Affordable water: Providing affordable potable water is another challenge, as the coastal towns do not have sufficient water sources. Desalination has been introduced but the maintenance of such a plant is expensive.

- Sufficient electricity: Clanwilliam does not have sufficient electrical capacity and funding to secure electrical capacity is not forthcoming.
- Poverty and unemployment

The opportunities for the Cederberg are:

- Access value chains: The Cederberg Municipal area, although not next to the Cape Metropolitan Municipality (CPT) has easy access to ports (air and sea) as the N7 dissects the region, linking Namibia and Southern Africa, whilst the R27 links to the Saldanha Municipal area (WC014) with its eminent IDZ to the region.
- Access to information: Information is driving the economy of the future and in order to drive economic growth in the Cederberg, access to information should be to be prioritized.
- Governance and regulation: The proclamation of SPLUMA provided Cederberg municipality with delegated powers. As the Municipality was one of the forerunners to develop its own By-law and integrated Scheme Regulations, and are therefore in a position to govern and regulate development to enable economic growth and establish Cederberg as a place to invest.
- Education: Cederberg is home to a West Coast College Head satellite campus, which is located in Citrusdal. Supporting the development of a University in the region would be the next move to elevate education levels.
- World economy: Driven by globalization, Cederberg is home to several industries and business that export either to the rest of South Africa or to the world. Through its red tape reduction programme Cederberg can enable businesses to be internationally competitive and can regulate and manage the provision of sufficient industrial and commercially zoned land. There is a lack of industrial land particular in Citrusdal.
- World nature conservation initiatives: The Cederberg Conservation Area and future links to conservation areas outside the municipal area.

Cederberg Municipality will have to rely on partnerships to build on its strengths, turn around weaknesses and overcome threats and utilise opportunities:

These strengths, weaknesses, opportunities and threats translated into the spatial objectives.

2.3 Vision

The SDF (2012 -2017) was: To sustainably exploit the municipality's wide variety of agricultural, tourist and cultural resources including: • the West Coast; • the potato and grain lands of the coastal plain; • the fertile Olifants river valley with its dual purpose Clanwilliam dam feeding both agriculture and tourism; and, • the Cederberg mountain range offering scenic, biodiversity conservation and cultural tourism opportunities

2.4 Goals

The goals of the SDF will be informed by the IDP strategic objectives:

SO 1 Sustainable basic service delivery and infrastructure development

SO 2 Implement strategies to ensure that the municipality is financial viable

SO 3 Mainstreaming sustainability and optimising resource efficiency

SO 4 Facilitate economic growth in the municipal area

SO 5 Good Governance, community development and community participation

CHAPTER 3: Spatial Analysis and Synthesis: Legislation and Sectoral Plans

3.1 Legislative and Sectoral Plan Directives

Several national acts and policy documents provide a framework for the Cederberg SDF and are tabulated below. The alignment between the different national, provincial and local laws, policies, and strategies provide a spatial planning agenda, direction and intent for the Cederberg municipal area.

Planning Legislation and Policy Frameworks	
National Sphere	
Constitution of the Republic of South Africa, Act 108 of 1996 **Purpose:** To define parallel powers between national, provincial and local authority in terms of planning and development. To establish the principle of cooperative management and control between national, provincial and local level. To ensure in terms of Section 153 that municipal planning is developmental to ensure that the goals of local government are met and fundamental rights as set out in the constitution are adhered to.	**Spatial directives:** Provide services to the community in a sustainable manner. Support social and economic development and ensure that structuring and management of administration, spending and planning is done accordingly. Support safe and healthy environments; Take part in national and provincial development programs.
Municipal Systems Act, Act 32 of 2000 **Purpose:** To provide for the mechanism to enable municipalities to support the social and economic up-liftment of progressive communities and the provision of universal access to quality and affordable services.	**Spatial directives**: The adoption of an Integrated Development Plan with an SDF to form a key component (Sector Plan) to allow spatial implementation of the IDP goals. The SDF should contain the development priorities and goals of geographical areas and indicate how development strategies should be co-ordinated. The Municipal Integrated Development Plan should be reviewed every 5 years.
National Spatial Development Plan, 2006 **Purpose**: To act as the instrument to co-ordinate national actions and to bring them in line with social, economic and environmental goals.	**Spatial directives:** • Focus state investment on areas with economic growth; • Address past and present social inequalities; • Focus economic and settlement growth along nodes and activity corridors.
Integrated Coastal Management Act, Act 24 of 2008 **Purpose:** To protect the unique character of the coastal areas of South Africa and to address and manage the social and economic advantages of these areas	**Spatial directives**: Integrate the ecological processes with the demands of the communities to allow for the sustainable development of the coastal areas. Regulate the dumping of refuse and pollution in the coastal zone.

	Manage potential uncontrolled negative impacts. Adhere to the Coastal setback lines that were determined.
National Environmental Management Act for Biodiversity, Act 10 of 2004 **Purpose:** Integrate biodiversity conservation with land use planning.	**Spatial directives:** • Integrate conservation and development in national and bio regional context; • Support bio regional planning; • Listed threatened ecosystems should be categorized as Critical Biodiversity areas and protected ecosystems and should be included/reflected in SDF and IDP documents.
National Environmental Management Act for Protected areas, Act 57 of 2003 **Purpose:** Make provision for the protection and conservation of ecologically sustainable areas that present the biodiversity, natural landscape and coastline	**Spatial directives:** • Create a registry for national, provincial and local conservation areas; • Manage the conservation areas in accordance with national norms and standards.
National Environmental Management: Waste Act, Act 59 of 2008	**Purpose:** To protect the health of the environment through the implementation of different measures to prevent ecological degradation. Provide the vehicle for the creation of national norms and standards, specific waste management systems, and the licensing, control and remediation of contaminated land.
National Forest Act, Act 84 of 1998 **Purpose:** To ensure the sustainable management and development of forest areas. To provide measures for the protection of forest areas. Support the sustainable use of forest areas and to support creation of community forests.	**Spatial Directives:** • To demarcate forest areas through formal declarations; • Management of deforested areas; • To ensure access to state forests for recreation, education and cultural activities; • To provide resources for community forests.
Mountain Catchment Areas Act, Act 63 of 1970 **Purpose:** To regulate the conservation, use and management of land in mountain catchment areas to ensure healthy water systems.	**Spatial directives:** Declare mount catchment area and provide management guidelines for these areas, for example fire control.
National Environmental Management Act, Act 107 of 1998 **Purpose:** Provide a framework and guidelines for all relevant developments that will have an impact on the environment.	**Spatial directives:** Development should be sustainable The disturbance of ecosystems should be avoided, minimised or rectified. Responsible use of non-renewable resources. The development and use of non-renewable resources should be should not exceed the determined limits. Any activity in terms of mining, infrastructure, planning or business that has an impact on the environment should conform to the regulations of the National

	Management Act.
National Heritage Resources Act, Act 25 of 1999 **Purpose:** To allow for the establishment of the South African Heritage Resources Agency (SAHRA). To set up an integrated and interactive management system for national heritage resources and to enable communities to conserve these resources for future generations. Develop general principles for heritage resources	**Spatial directives:** Evaluate the heritage resources in municipal areas. According to Section 30(5) of the Act the municipality is responsible for the compilation of an inventory of the heritage resources in the area and submission of the inventory to the relevant provincial heritage authority as part of the compilation of the SDF. In terms of Section 31(1) of the act the municipality should investigate the potential for the identification of a heritage conservation area as part of the review of planning scheme.
Conservation of Agricultural Resources Act. Act 43 of 1998 **Purpose:** The conservation of natural agricultural resources in South Africa - support the production potential of agricultural land through the prevention of erosion and degradation of the water resources. Conservation of natural vegetation through the effective management of invasive plants and weeds.	**Spatial directives:** • No uncultivated natural areas will be cultivated without the written consent of the minister; • Land with a slope of more than 20% will not be cultivated without the written consent of the minister; • Cultivated land should be effectively managed to prevent water and wind erosion. • Vegetation within a vlei, wetland and marsh or within a flood areas will not be utilised if the use intended will result in damage to or destroy the agricultural resources in the area.
Subdivision of Agricultural Land Act, Act 70 of 1970 **Purpose:** To prevent the unsustainable subdivision and abuse of agricultural land	**Spatial Directives:** Agricultural land should not be unnecessarily fragmented but should be maintained as viable economic entities.
Sustainable use of Agricultural Land, Draft law.	This will replace Act 70 of 1970 and Act 43 of 1998 with the purpose to ensure food security and land reform.
National Water Act, Act 36 of 1998 **Purpose:** To ensure the protection of all the water resources in South Africa as well as the regulations regarding the use, development and management of these resources.	**Spatial Directives:** Provision of basic human water demands at present and in the future. To ensure equal access to water provision, to promote the effective sustainable and beneficial us of water in the interest of the public. Provision in the growing demand for water. To protect aquatic and associated ecosystems and their biological diversities. Prevent the pollutions and degradation of water resources. Management of floods and droughts.
Spatial Land Use Management Act, Act 16 of 2013 (SPLUMA) **Purpose:** Seek to promote consistency and uniformity in	**Spatial directives**: SPLUMA provide the framework for spatial planning documentation and development guidelines/ principles

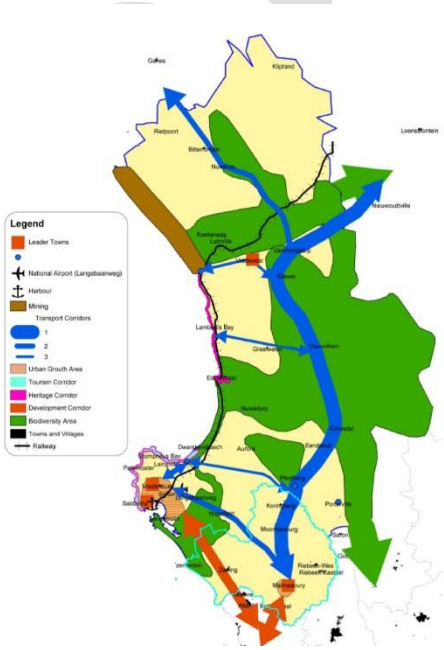
procedures and decision-making. Other objectives include addressing historical spatial imbalances and the integration of the principles of sustainable development into land use and planning regulatory tools and legislative instruments.	for future development in South Africa to ensure spatial imbalances of the past is actively address and to ensure future developments are done in a sustainable and cost effective manner through a supportive and transparent administrative framework.
National Development Plan 2030 (2011) **Purpose:** Offers a long-term perspective on development. It defines a desired destination and identifies the role different sectors of society need to play in reaching that goal. The NDP aims to eliminate poverty and reduce inequality by 2030.	**Spatial directives:** Improvement of infrastructure provision through investment and reversing spatial inequalities. Transformation of human settlements and space economy to allow more people to live closer the their places of work to reduce travel distances and cost, provide more job opportunities in townships and improve public transport to allow for safe, reliable and energy efficient transport. Prevent the development of housing in marginal areas and increase urban densities. The plan also suggests the protection of the natural environment that will support sustainability and resilience. Plan for the impacts of climate change and improve energy efficiency. • The plan sets out six interlinked priorities: Uniting all South Africans around a common programme to achieve prosperity and equity. • Promoting active citizenry to strengthen development, democracy and accountability. • Bringing about faster economic growth, higher investment and greater labour absorption. • Focusing on key capabilities of people and the state. • Building a capable and developmental state. • Encouraging strong leadership throughout society to work together to solve problems.

Provincial Sphere	
Land Use Planning Act, Act 3 of 2014 (LUPA) **Purpose:** Seek to promote consistency and uniformity in procedures and decision-making. Other objectives include addressing historical spatial imbalances and the integration of the principles of sustainable development into land use and planning regulatory tools and legislative instruments.	**Spatial directives**: LUPA provide the provincial framework for spatial planning documentation and development guidelines/ principles for future development in the Western Cape to ensure spatial imbalances of the past is actively address and to ensure future developments are done in a sustainable and cost effective manner through a

	supportive and transparent administrative framework. 5 Principles drive spatial form: - Spatial Justice - Spatial Sustainability - Spatial Efficiency - Spatial Resilience - Good Administration
Western Cape Provincial Development Framework, PSDF, 2014 **Purpose:** The WCPSDF promotes the targeting and implementation of the National Development Framework goals in the Western Cape.	**Spatial Directives:** • To guide provincial and municipal IDP's and SDF's. • To prioritise and guide investment and infrastructure plans of provincial departments and parastatals. • Provide distinct guidelines to the private sector to ensure the desired outcome of development. • Increase the predictability of the environment for development by providing clear guidelines for potential development and no go areas. • Address the spatial legacy of apartheid. • Provide spatial guidelines for land uses to restructure areas and allow for more equal and sustainable communities. • Support development that is socially more equable, economically viable and environmentally sustainable. Provide in the development need of the current generation without jeopardising the ability of future generations to do the same. The three pillars of sustainable development that is referred to as " *the triple bottom line*" should be considered in planning, decision making and implementation, and is as follows: ➢ Ecological Integrity (the Planet) ➢ Social justice (the People) ➢ Economic effectiveness (the Market) The WCPSDF sets out our five Strategic Goals to maintain continuous improvement in the lives of citizens. These are: • Strategic Goal One: Creating Opportunities for Growth and Jobs; • Strategic Goal Two: Improving Education

	Outcomes and Opportunities for Youth Development; • Strategic Goal Three: Increasing Wellness, Safety and Tackling Social Ills; • Strategic Goal Four: Enabling a Resilient, Sustainable, Quality and Inclusive Living Environment; and • Strategic Goal Five: Embedding Good Governance and Integrated Service Delivery through Partnerships and Spatial Alignment.
Western Cape Provincial Growth and Development Strategy, 2006 (iKapa Elihlumayo) **Purpose:** The WCPGDS promotes five investment categories based on growth potential (greatest impact for spending) and need (greatest social benefit): • Town investment: high development potential and low people development needs • Social investment – low people development needs and high development potential • Social and town investment – high development potential and high people development needs • Leading towns – highest growth potential Minimal investment – low development potential and low needs	**Spatial directives:** The spatial economy of the province is characterised by four spatial components that are key areas for economic growth and opportunities: • Regional growth drivers: Cape Town Metropole, Saldanha-Vredenburg and Southern Cape; • Regional development corridors: Oliphant's River Valley (small) and Breede River Valley (large); • Regional transport corridors: N1, N2 and N7; • Leading towns (growth potential).

Regional Sphere	
West Coast District Municipality Integrated Development Plan for, 2012-2016	**Purpose:** To provide a better quality of life to all its residents in terms of community life and facilities. **Spatial directives:** Each strategic objective is supported by a strategy which documents the strategic approach the municipality will embark on in order to address the particular theme or issue in the district municipal area. These strategies include District SDF, Integrated transport plan, Regional economic development plan, Disaster management plan, environmental integrity, Community outreach programme, Waste management Plan, Water Master Plan The following projects is indorsed by the IDP: • Promote the conservation of CBA's by

	implementing sustainable agricultural activates and urban development where impacts on biodiversity is lowest. • Development of the Industrial Development Zone in Saldanha Bay, • Promote development of Agri-parks to alleviate rural poverty - The concept involves the use of collective farming, farmer-incubator projects, Agri-clusters, and eco-villages. At the same time it assists with land conservation and preservation. It also evokes the traditional model of an agricultural business hub, where multiple tenants and owners operate under a common management structure where for example a range of Agri-Horticultural enterprises may exist. The model must have a strong social mobilization component so that Black farmers and agri-business entrepreneurs are actively mobilised and organised to support this initiative. • Smart Agri projects – adapting to the potential impacts of climate change on the agricultural sector in the West Coast District.
West Coast District Spatial Development Framework (2012-2016)  Current (2007) Conceptual WCSDF Composite Spatial Plan	**Purpose:** Provide guidelines for district spatial planning in the West Coast region under the authority of the West Coast District Municipality. The West Coast SDF aims to concentrate investment in settlements in areas with economic and resource potential and the settlements' contribution on regional level. (Check review 2016/2017). **Spatial directives:** • Link the natural environment within the legal entity of the Cederberg municipal area to a larger network of natural areas, reserves and conservation areas. • Ensure that productive agricultural land is maintained as such. • Spatial planning and development decisions need to consider the potential environmental impact and comply with the provisions of the NEMA; • The implications of climate change should be carefully considered and mitigating measures implemented;

	• Enhance the capacity and quality of infrastructure in the areas with the highest economic growth potential, while ensuring continued provision of sustainable basic services to all residents in the District. • To facilitate and create an enabling environment for employment, economic growth and tourism development, while promoting access to public amenities such as education and health facilities. • Enhance and protect the key biodiversity and agricultural assets in the district and plan to minimize the human footprint on nature, while also mitigating the potential impact of nature The function of the WCDM covers the following five spheres: Environmental, Health, Practitioners, Alignment of planning processes and Water services provision.
West Coast Economic Development Strategy, 2012	**Purpose:** Support economic growth in the West Coast District region. **Spatial Directives:** • Give special attention to special aspects for job creation; • Provide the necessary road infrastructure and areas where local products can be produced; • Identify suitable areas for small farmers; • Identify land in towns where development and expansion of agricultural markets and links can take place; • Make use of existing infrastructure for other uses during off seasons; • Facilitate the coordinated marketing of regional growth points.

Municipal Sphere	
Cederberg Integrated Development Plan, Final IDP Review 2016-2017	**Purpose:** To govern municipal budget and priorities, assets, land management, social and economic development and institutional transformation (monitoring and performance management) through a strategic plan: **Spatial Directives:** The IDP serves as an overhead strategic development plan that guides spatial development in the Cederberg

	area. The strategic objectives are: SO 1 Sustainable basic service delivery and infrastructure development SO 2 Implement strategies to ensure that the municipality is financial viable SO 3 Mainstreaming sustainability and optimising resource efficiency SO 4 Facilitate economic growth in the municipal area SO 5 Good Governance, community development and community participation
Cederberg Sector Plans	
Financial Plan	**Purpose:** To provide a financial sustainability plan for the municipality that includes a three (3) year budget plan. **Spatial directives:** Municipality to strive for continuous better its financial position to generate the required revenue to continue to provide and improving the quality of services delivery at affordable levels. Municipality continuously evaluate the ability of its citizens to pay for services and evaluate the services levels and types of services rendered against the ability to pay for such services.
Disaster Management Plan	**Purpose:** Strategically address the risks in the Cederberg. In this plan each line function within the municipality will be given specific tasks during a disaster e.g. Finance: to assist with emergency procurement; Human Resources: to employ temporary staff to assist with tasks. **Spatial directives:** The following risks were identified for the Cederberg municipal area: • Fire; Drought; Floods; Road accidents; Wind; HIV/Aids; TB. The activities to be performed within the different departments include participation in risk reduction as well as preparedness and response.
Integrated Housing Plan 2014-2017, July 2015	**Purpose:** Provide a medium (5 years) and long term (10 years) delivery plan for the provision of housing opportunities, that also address the challenges ad provide input in the council's budget. **Strategic directives:** • Future delivery of housing opportunities limited

	to leader towns of Clanwilliam, Citrusdal, Lamberts and Elands bay. • Determine future housing demand and land required based on growth rates to identify areas within the towns for housing delivery. • Assess infrastructure capacity and identify upgrade requirements to meet the future housing demand. • Provide a housing pipeline for planning and implementation.

As Cederberg Municipality is a role player within the national and provincial local authority arena, all the relevant national, provincial and local legislation, policy documentation and strategies were considered to focus the spatial planning agenda, direction and intent for the Cederberg municipal area.

The SDF, as multi-sectoral policy document, integrates and interprets these laws and policies spatially at local level.

3.2 Political Mandate

Each municipality has a political mandate, their pledge to the electorate. This mandate also informs the spatial domain. An analysis of the various directives follows in two tables.

Political Themes	Political Mandate	NDP 2030	SPLUMA/ LUPA Principles	WCPSDP	Cederberg	
					SDF Foci	IDP
Jobs & Opportunities	• 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	Spatial Resilience	SO 1: Create opportunities: jobs & growth So 3: Access to safer & efficient transport SO 6: Develop integrated & sustainable human settlements SO 7: Mainstream efficiency & sustainability SO 11: Increase opportunities for growth & development in rural areas	Major Infrastructu Projects Major Touris Destinations Rural nodes, markets & settlement hierarchy & structure	SO 4 Facilitate economic growth in the municipal area
Responsive local government	• Graduate recruitment appointments • Access drug addiction treatment	11 Building capable state	Efficiency & Good Administration	SO 12: Best run regional government	Urban related development Rural nodes, markets & settlement hierarchy	SO 5 Good Governance, community development and community participation
Better service delivery	• Maintain roads (potholes) • Access to electricity, water & sanitation • Regular maintenance of infrastructure	7 Improve education, training & innovation 8 Health care for all	Efficiency & Spatial Sustainability	SO 2: Improve education outcomes SO 10: Integrate service delivery for maximum impact	Major Infrastructu Projects	SO 1 Sustainable basic service delivery and infrastructure development
Stop corruption	• Effective systems: complaints processing • Staff appointed: add value • Exclude councillors from recruitment • Open tender adjudication • Open council meetings	12 Fighting Corruption	Good Administration		Spatial Planning Categories for Land Use Management	SO 2 Implement strategies to ensure that the municipality is financial viable
Meaningful redress	• 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	Spatial Justice	SO 8 & 9: Social inclusion & reduce poverty	Bio-Regions Land Reform	SO 3 Mainstreaming sustainability and optimising resource efficiency
Making communities safer	• Prevention units: gang & drugs • Law enforcement service: traffic & crime	9Social protection 10 Safer Communities	Spatial Justice	SO 4: Increase wellness SO 5: Increase safety		SO 3 Mainstreaming sustainability and optimising resource efficiency

National Outcomes	National Development Plan (2030)	Western Cape Strategic Plan (2014-2019) (*2015*)	District Municipal IDP (2012)	Municipal Outcomes (2016)
1. Quality basic education	9. Improving education, training and innovation	Strategic Goal 2: Improving Education Outcomes and Opportunities for Youth Development		
2. A long and healthy life for all South Africans	10. Promoting health	Strategic Goal 3: Increasing Wellness, Safety and Tackling Social skills		SO 3 Mainstreaming sustainability and optimising resource efficiency
3. All people in South Africa are and feel safe	12. Building safer communities	Strategic Goal 3: Increasing Wellness, Safety and Tackling Social Ills		SO 5 Good Governance, community development and community participation
4. Decent employment through inclusive growth	3. Economy and employment	Strategic Goal 1: Create Opportunities for Growth and Jobs	2 Pursuing economic growth and facilitation of jobs opportunities	SO 1 Sustainable basic service delivery and infrastructure development
5. A skilled and capable workforce to support an inclusive growth path	9. Improving education, training and innovation			SO 3 Mainstreaming sustainability and optimising resource efficiency
6. An efficient, competitive and responsive economic infrastructure network	4. Economy infrastructure –The foundation of social and economic development		4. Providing essential bulk services in the region	SO 4 Facilitate economic growth in the municipal area
7. Vibrant, equitable, sustainable rural communities contributing towards food security for all	8. Transforming human settlement And the national space economy			SO 3 Mainstreaming sustainability and optimising resource efficiency
8. Sustainable human settlements and improved quality of household life		Strategic Goal 4: Enabling a Resilient, Sustainable, Quality and Inclusive Living Environment		
9. Responsive, accountable, effective and efficient local government			5. Ensuring good governance and financial viability	SO 2 Implement strategies to ensure that the municipality is financial viable
10. Protect and enhance our environmental assets and natural resources	5. Environmental sustainability - An equitable transition to a low-carbon economy		1. Ensuring environmental integrity for the West Coast	
11. Create a better South Africa and contribute to a better Africa and a better world	15.Transforming society and uniting the country		3. Promoting social wellbeing of the community	
12. An efficient, effective and development-oriented public service	13. Building a capable and developmental state 14. Fighting corruption	Strategic Goal 5: Embedding Good Governance and Integrated Service Delivery through Partnerships and Spatial Alignment.		SO 2 Implement strategies to ensure that the municipality is financial viable
13. A comprehensive, responsive and sustainable social protection system				
14. A diverse, socially cohesive society with a common national identity				

CHAPTER 4: Spatial Analysis and Synthesis: Status Quo

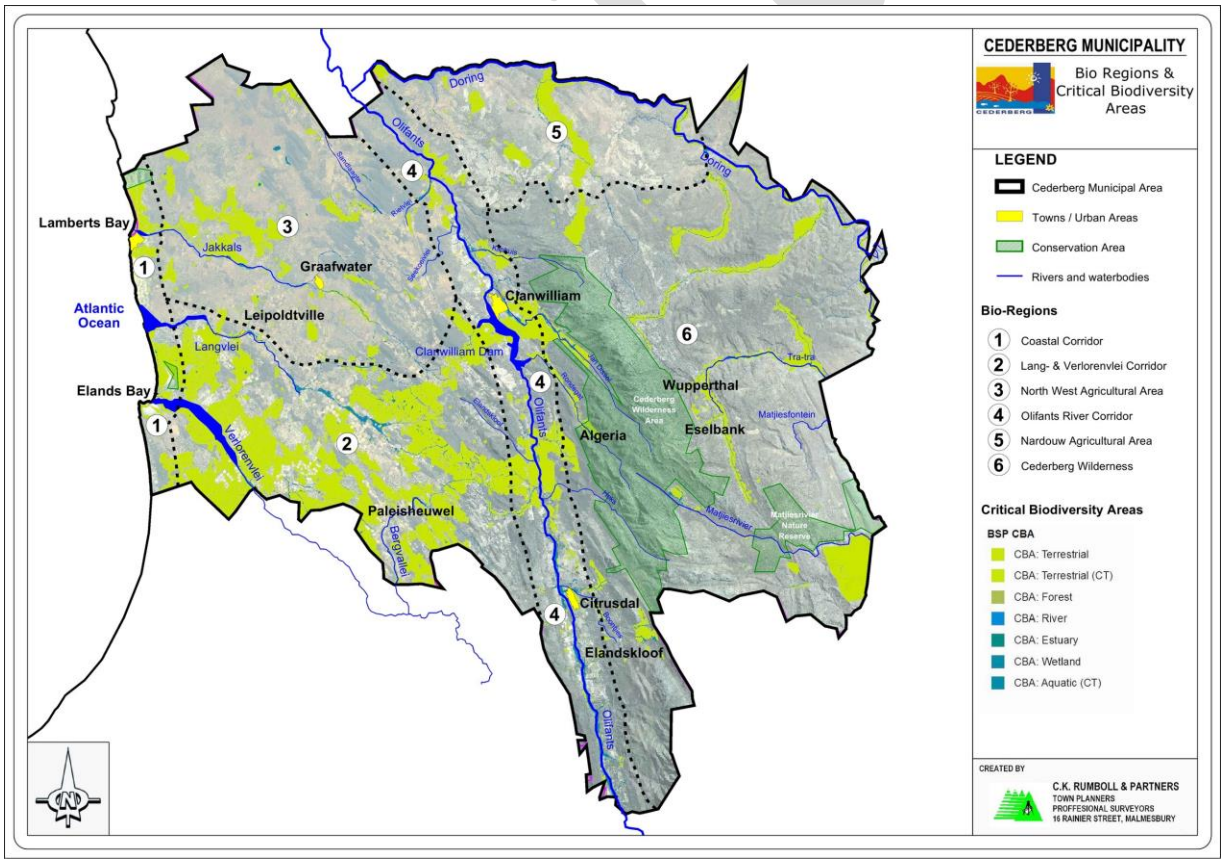
4.1 Biophysical Environment

The Cederberg Municipal area includes the Cederberg & Pakhuis Mountains, Oliphant's River Corridor and the Sandveld plains up to the West Coast.

The Cederberg mountains extend about 50 km north-south by 20 km east-west. They are bordered on the west by the Sandveld, the north by the Pakhuis Mountains, the east by the Springbok Flats and the south by the Kouebokkeveld Mountains and the Skurwe Mountain. The main access road, the N7, runs to the west of the range. The nearest towns are Citrusdal to the southwest and Clanwilliam to the north. The area is sparsely populated.

The Oliphant's River is approximately 285 km long with a catchment area of 46,220 km^2 and flows into the Atlantic Ocean at Papendorp, 250 km north of Cape Town. The upper and main catchment area of the Oliphant's River is around Ceres and the Cederberg mountains. The Clanwilliam and Bulshoek dams are located on the river and provide water for the towns and farms along the watercourse.

The Sandveld plains stretch from the Mountains up to the West Coast. Here rooibos tea, potatoes and irrigated crops are produced. The Sandveld plain is replaced as it reaches the West Coast by the Atlantic Ocean which is rich in seafood and a destination for holiday makers.



Map 2: Bio Regional & Conservation areas

Six bio-regions can be distinguished in terms of the natural environment and economy. They include:
• Coastal corridor – West coast intersected by Verlorenvlei, Wadrifsoutpan and Jakkalsvlei estuaries and containing the coastal villages of Elands Bay and Lamberts Bay;
• The North Western coastal plain and, separated by the Oliphant's River Corridor, the North Eastern plains containing most of the municipality's intensive agriculture;
• Southern coastal pain between Verlorenvlei and Langvlei rivers contains large areas of Endangered Sand and Sandstone Fynbos identified as Critical Biodiversity Areas (CBAs) as well as the Verlorenvlei Conservation Area;
• Oliphant's River Corridor, main ecological (River and dam) and economic (infrastructure, settlement and tourism) lifeline through the municipality);
• Nardouw Sub-region; and,
• Cederberg Mountains: High wilderness area with a few historic hamlets focused on Wupperthal.

Geology and Soils

The schematic diagram of an approximate 100 km west-east (left to right) geological cross-section through the Cederberg (a portion of the Cape Fold Belt to which Table Mountain on the Cape Peninsula also belongs) guides one through the geological layers of the area. The rocky layers (in different colours) belong to the Cape Super group. The green layer is the Pakhuis Formation sediment, called

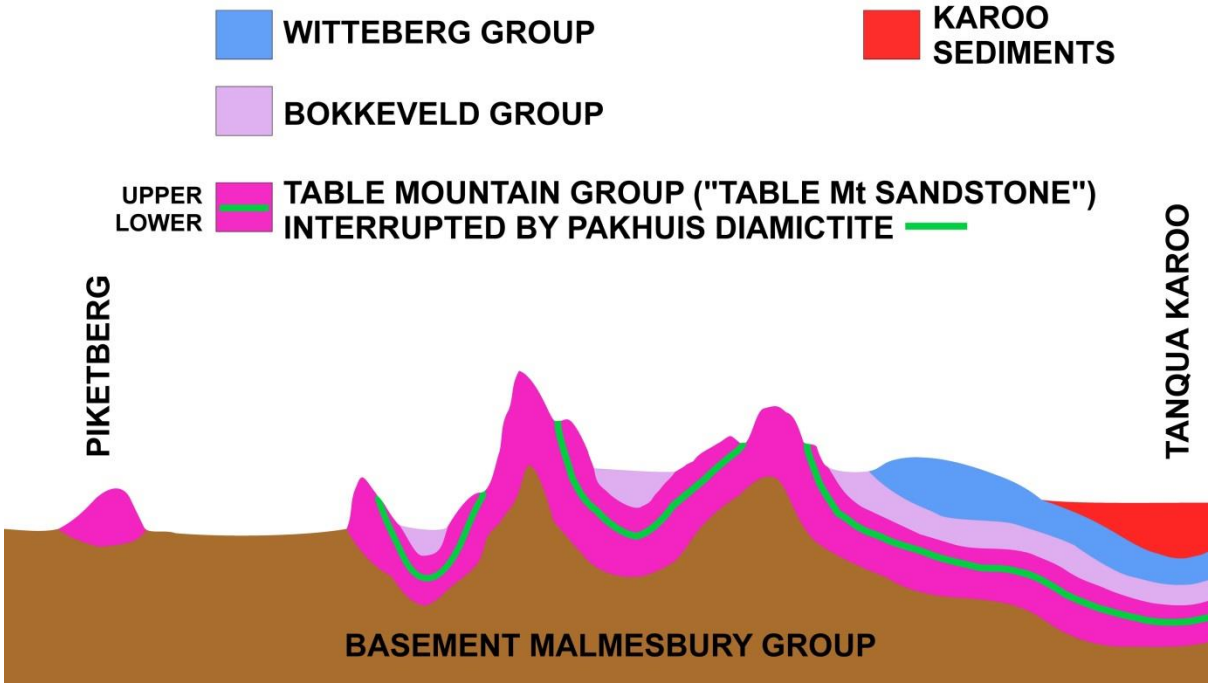


Figure 4: Geological cross section: Cederberg by Oggmus - by Own work, CC BY-SA 4

"Tillite", left by glaciers which for a short time crossed this area about 450 million years ago). It divides the Peninsula Formation Sandstone (or Table Mountain Sandstone) (magenta layer) into a Lower and Upper portion. It is the Lower (older) portion that is particularly hard and erosion resistant, and, therefore, forms most of the highest and most conspicuous peaks in the Cederberg and elsewhere in the Western Cape. The Upper Peninsula Formation, above the Pakhuis tillite layer, is considerably

softer and more easily eroded than the lower Formation. In the Cederberg it has been sculpted by wind erosion into many fantastic shapes and caverns, for which these mountains have become famous. The bottoms of the valleys are covered by the Bokkeveld mudstones on which the Western Cape's vineyards and fruit orchards thrive. The Witteberg Formation further inland is the topmost layer of the Cape Super group, and is only exposed in the Karoo - the Swartruggens hills in the very arid Tangua Karoo, in this case

The dominating characteristic of the area is sharply defined sandstone rock formations (Table Mountain Group), often reddish in colour. This group of rocks contains bands of Shale and in recent years a few important fossils have been discovered in these argillaceous layers. The fossils are of primitive fish and date back 450 million years to the Ordovician Period

Soils and sediments are characterized by sandy loam to clay soils generally derived from shales and mudstones of the Cederberg Formation. Cederberg soils are highly leached acid sands, low in nutrients with a low moisture retaining capacity. The soils on the sandstone slopes are typically unstratified and sandy, often with high grit content in places.

Climate

The summers are very hot and dry, while the winters are more wet and cold with typical annual rainfall in the low-lying areas of less than 700 mm. The higher peaks receive a dusting of snow in winter. Summer days are typically clear and cloudless. Due to the clear skies most of the year, it makes an excellent site for sky watching and has its own amateur observatory.

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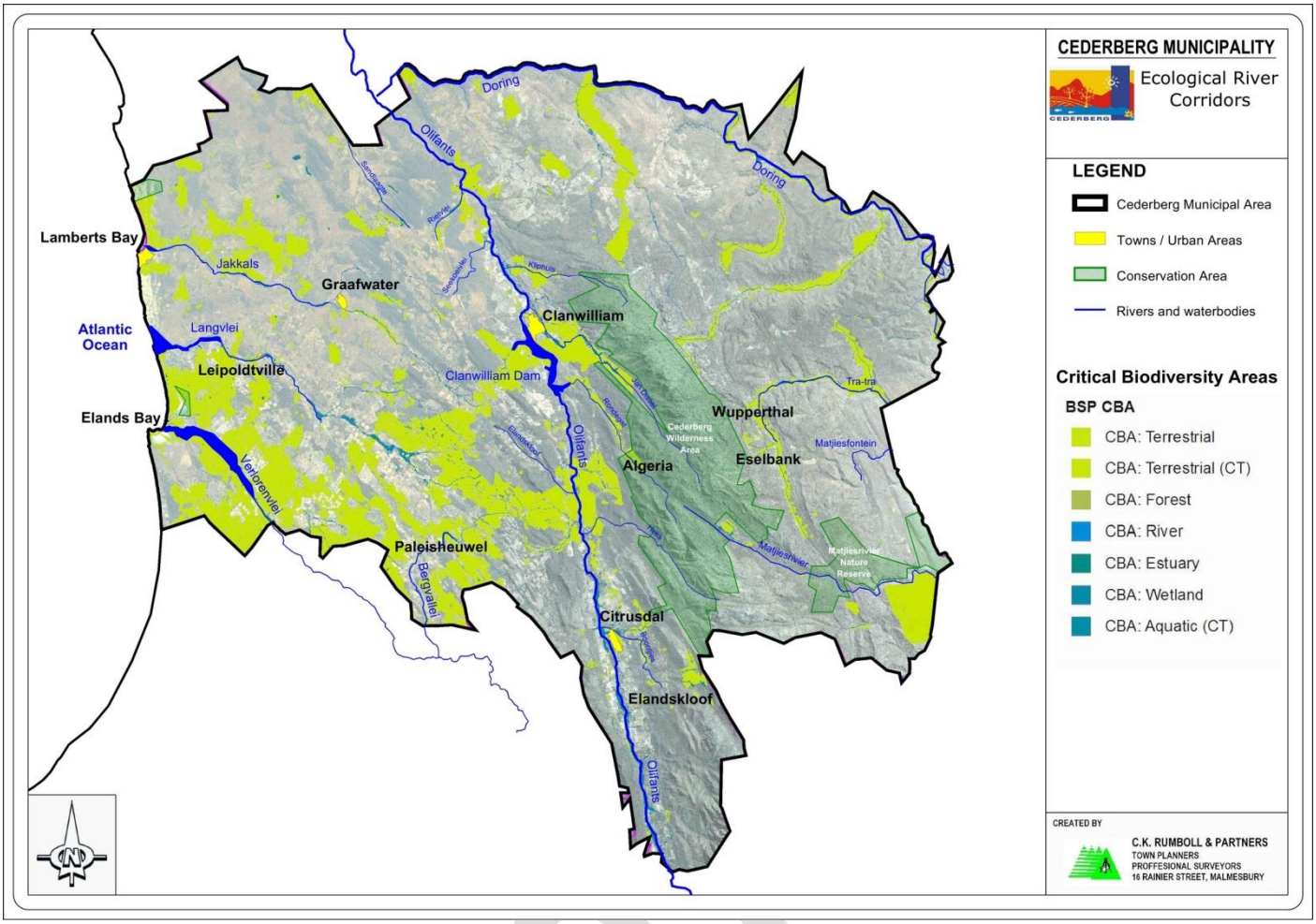
Hydrology and aquatic ecosystems

The Oliphant’s River upper and main catchment area is around Ceres and the Cederberg mountains. The Oliphant’s River rises in the Winterhoek Mountains north of Ceres. The mainstream is about 265 km long with a catchment area of 46,220 km^2 and flows into the Atlantic Ocean at Papendorp, 250 km north of Cape Town. The river flows to the north-west through a deep, narrow valley that widens and flattens into a broad floodplain below Clanwilliam. At the mouth the Oliphant’s river is split in two by an island that exhibits interesting rock formations.

The Oliphant’s River’s main tributary is the Doring River, changing name as Melkboom/ Oudrif before it joins the Oliphant’s. The tributaries flowing from the east, such as the Thee River, Noordhoek River, Boontjies River, Rondegat River and the Jan Dissels are typically perennial, except for the Sout River. Those flowing from the west, such as the Ratels River, Elandskloof River and the Seekoeivlei River are smaller and seasonal, not contributing much to the flow in the system.



Map 3: Ecological River Corridors

There are two dams in the catchment area of the Oliphant's River:

- Clanwilliam Dam, with a storage capacity of 127,000,000 cubic meters (4.5×10^9 cu ft.)
- Bulshoek Dam, with a storage capacity of 7,500,000 cubic meters (260,000,000 cu ft.)

The major towns in the Oliphant's/Doring river catchment dissecting Cederberg are Clanwilliam and Citrusdal in the middle catchment areas.

Topography and slopes

The Cederberg Municipal area includes the Cederberg & Pakhuis Mountains, Oliphant's River Corridor and the Sandveld plains up to the West Coast.

The Cederberg mountains extend about 50 km north-south by 20 km east-west. They are bordered on the west by the Sandveld, the north by the Pakhuis Mountains, the east by the Springbok Flats and the south by the Kouebokkeveld Mountains and the Skurwe Mountains.

There are several notable mountains in the range, including Sneeu Mountain (2026 m) and Table Mountain (1969 m). Table Mountain should not be confused with Table Mountain in Cape Town. Notable landmarks include the Maltese Cross, Wolf mountain Arch and Wolf mountain Cracks.

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Biodiversity

The Cederberg Nature Reserve Complex is comprised of the Cederberg Wilderness, Matjies River Nature Reserve and Hexberg State Forest. The Cederberg Nature Reserve Complex includes 79 735 ha of land.

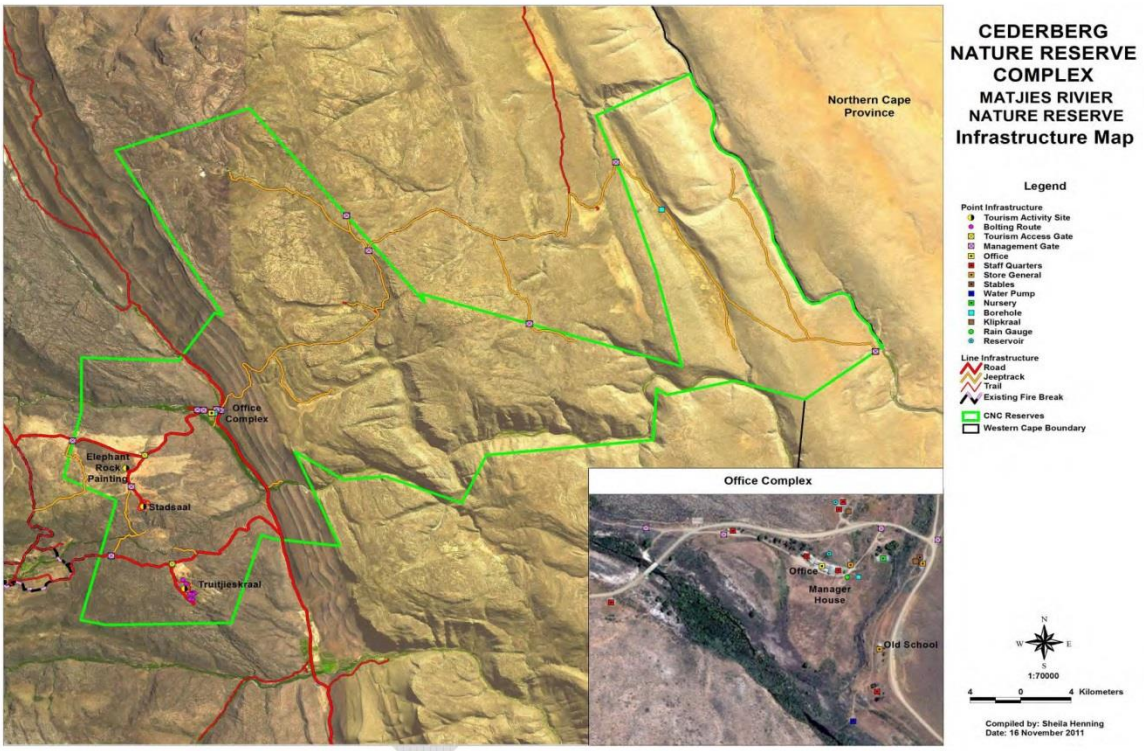


Figure 5: Matjies Rivier Nature Reserve

The Cederberg Nature Reserve Complex falls within the Greater Cape Floristic Region, spanning two biodiversity hotspots namely the Fynbos and Succulent Karoo (Mucina and Rutherford, 2006).

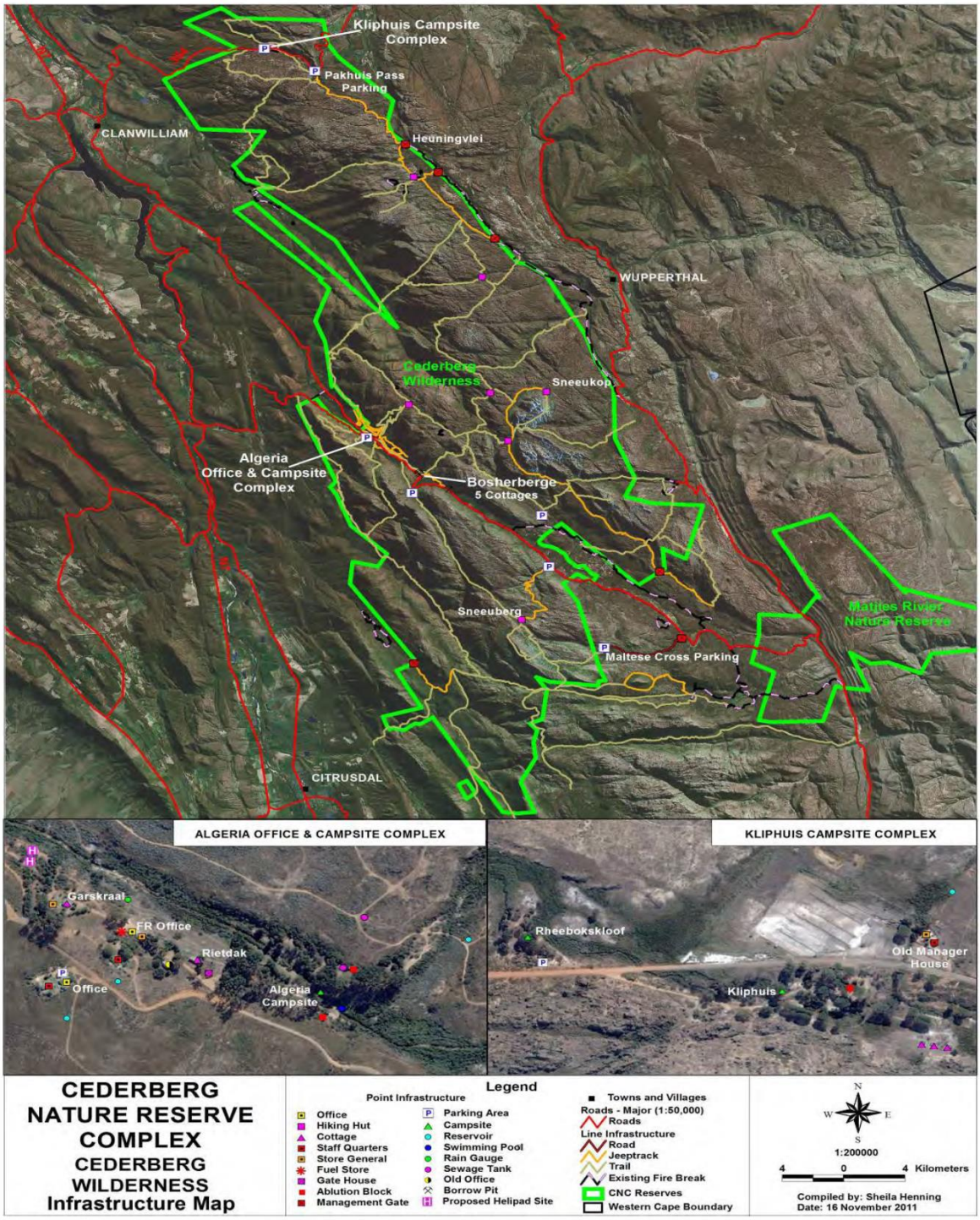


Figure 6: Cederberg Wilderness Complex

Vegetation

The predominant vegetation is fynbos in the wetter south and west (winter rainfall), changing to semi desert scrub in the north and east. The endangered Clanwilliam cedar (*Widdringtonia cedarbergensis*) of the family Cupressaceae and the snow protea (Protea cryopphila) of the Proteaceae are endemic to the area, found only in more remote areas high up in the mountains.

Six vegetation types occur in the Cederberg Wilderness i.e. Oliphant's Sandstone Fynbos, Cederberg Sandstone Fynbos, Western Altimontane Sandstone Fynbos, Northern Inland Shale Band vegetation, Swartruggens Quartzite Karoo and Agter Sederberg Shurbland.

Conservation, Heritage and Sense of Place

The sense of place of the Cederberg can be described as abundance within ruggedness interwoven between mountains, plains and the sea. The indigenous Widdringtonia Cedarbergensis (Cedar tree) and the rooibos tea illustrate the character of place perhaps the best. The character is expressed as spatial patterns. The spatial patterns in the Cederberg are informed by the exiting landscapes:

- Wilderness Landscapes: Coastal (coast – dunes and beaches; and wilderness – formal and informal conservation);
    - The coast and costal dunes from the southern boundary of the municipal area to the northern boundary of the municipal area;
    - Shifting dunes north east of Elands Bay, Dunes along most southern coastline and Bobbejaan Punt

    Prohibit coastal erosion and storm damage.

- Wilderness Landscapes: Mountains (mountains and wilderness – formal and informal conservation);
    - The Cederberg Nature Reserve Complex is comprised of the Cederberg Wilderness, Matjies River Nature Reserve and Hexberg State Forest. The Cederberg Nature Reserve Complex includes 79 735 ha of land.

    Protect against Microclimatic changes and prohibit erosion of steep slopes.

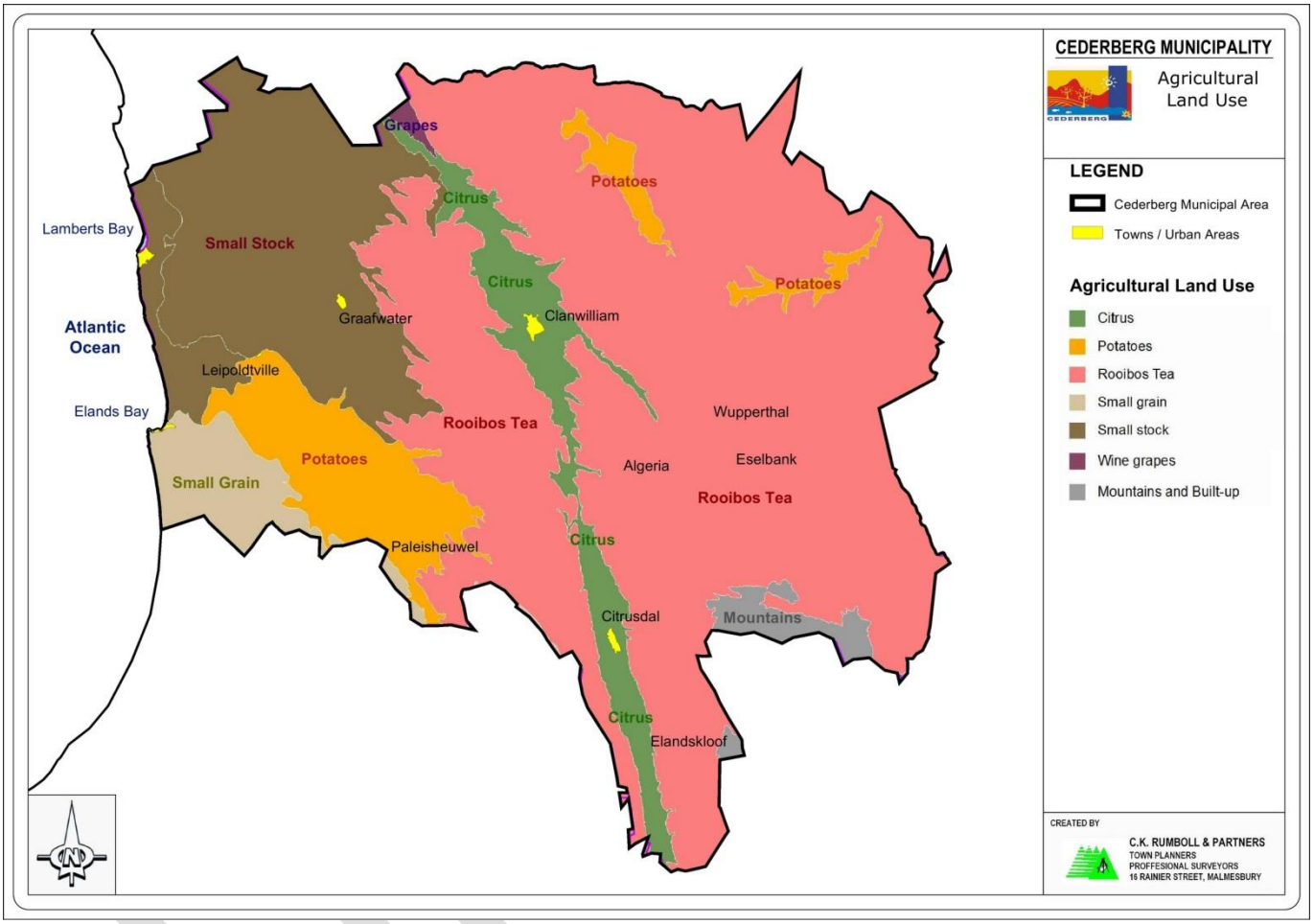
- Waterways and connections (rivers and wetland);
    - Verloren-, Lang- and Jakkalsvlei ebb out on to the coast
    - The Oliphant, Jan Dissel, Doring and Matjies rivers represents water source for agricultural, sport, recreational and domestic use. These rivers form important corridors for agriculture and tourism which need to be cultivated and used with sensitivity to keep the landscape intact.

    Protect water availability, prohibit flooding and pollution.

- Connection routes and belts (informal and formal conservation;
    - The Cederberg Wilderness Area
    - The corridor running east west from
- Agricultural Landscapes (arable land);
    - The Oliphant's Valley where citrus and tropical fruit is cultivated
    - The Verlorenvlei Valley and around Paleisheuwel where potatoes is cultivated.
    - The balance of the land where rooibos tea is cultivated and small stock is kept.
- Social Foci and community landscapes, and
- Cultural historical landscapes.

Agriculture

The agricultural economy mostly comprises of citrus and potato farming, grape and wine farming, rooibos tea plantations, livestock farming and tourism. Furthermore, the area is predominantly situated within the winter rainfall region, with sections in the east also receiving rain in summer.



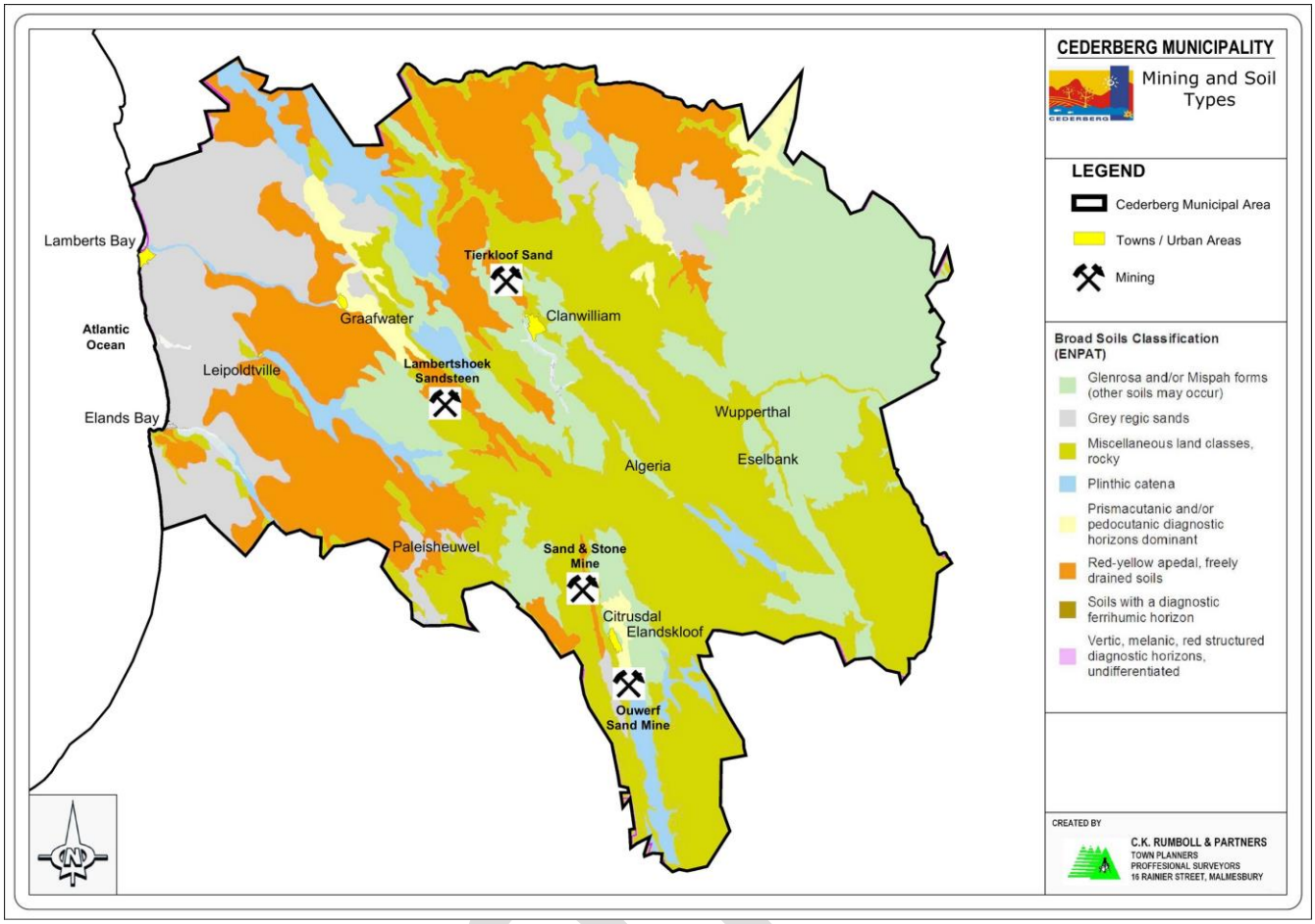
Map 4: Agricultural Land use

The Cederberg area includes one winery, the highest in South Africa. Around the Wuppertal area are a number of subsistence farms. Some commercial pine plantations remain around the Algeria forest station.

Proteas and other fynbos plants are also grown. A number of farms have become predominantly guest farms catering for the local and international tourist market.

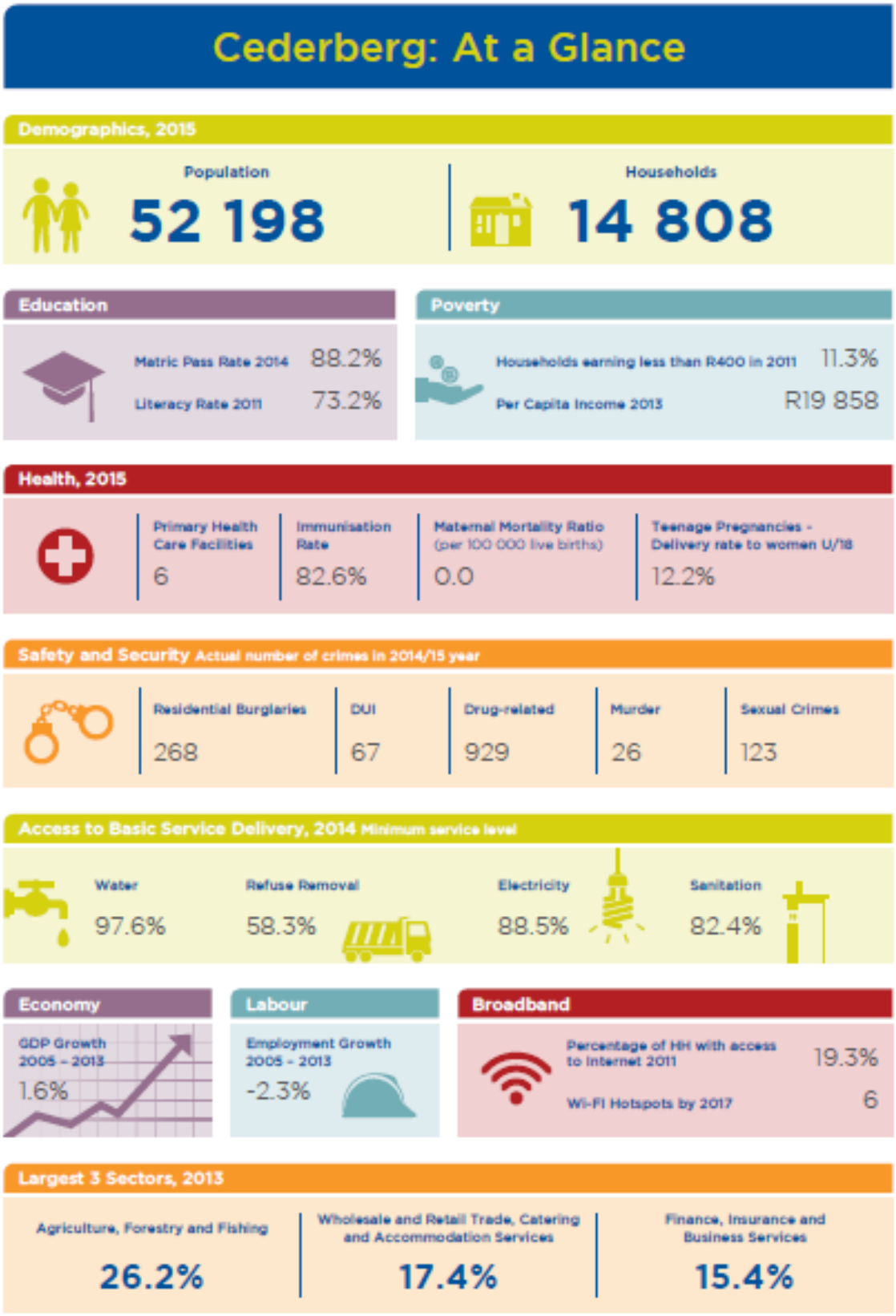
Building Materials and mining

There are limited sand and gravel mining activities in the Cederberg municipal area which include the mining of building sand.



Map 5: Mining and Soil types

4.2 Socio –economic conditions



4.2.1 History and Heritage

The **Cederberg** mountains and nature reserve is named after the endangered Clanwilliam cedar (Widdringtonia cedarbergensis), which is a tree endemic to the area. The mountains are noted for dramatic rock formations and San rock art. Their art is evidence of the earliest human inhabitants. European settlement brought forestry and some agriculture, and led to massive destruction of the local cedar trees, with thousands felled for telephone poles, furniture and housing. The European arrival pushed the San population out of the region. In the north, the old Moravian mission station of Wuppertal still remains, the heart of a small subsistence farming community, and home to a local industry producing *velskoene*, traditional soft leather shoes.

The Cederberg was possibly the southernmost battleground of the Second Boer War. A small band of Boer soldiers led by Jan Smuts, penetrated into this area from the Boer republics, hundreds of kilometres to the north. Legend had it that the Boer commandos were confronted in the Cederberg by a lone Englishman, who ordered them to surrender. In the end he was shot dead and today the ravine is called *Engelsmanskloof*.

4.2.2 Demographic profile

Cederberg has the smallest population estimated at 52 198 (2015) and 14 808 households, which represents 12.7% of the total population in the West Coast. The table below represents the population numbers in Cederberg from 2001 to 2016 and projected to 2020. The population growth rates projected over the next five year until 2020 is 1.1 percent per annum or 5.4 percent for the five years.

Municipal Area	Census 2001	2007 Household Survey	Census 2011	2016 Community Survey
Cederberg Population	39 326	31 944	49 768	52 949
Cederberg Households			13 513	14 808
Agricultural Households			2 031	
West Coast District	282 672	286 746	391 766	43 6403
% of WCDM	14	11	12.7	12.1
Black African	3 132	-	6 308	6260
% of population	13			12
Coloured	30 764	-	37 651	40111
% of population	75.6			75.8
White	5 403	-	5 462	6578
% of population	11		12	12
Other	27	-	346	0

Cederberg	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
Population	52 198	52 782	53 355	53 917	54 464	54 999

Table 6: Cederberg Demographic profile

Source: Western Cape Department of Social Development, 2015

The average household size is 3.5 persons and there are 32% female headed households.

The distribution of population groups in the Cederberg Municipal Area is relatively heterogeneous: Black African (12%), Coloured (76%) and White (12%). The tables below indicate the spatial distribution of the population groups in the Cederberg region per ward. The population is predominantly Coloured in the Cederberg region and also in each ward. In Elands Bay and Graafwater the Black African and White populations are nearly equally distributed within the Cederberg region.

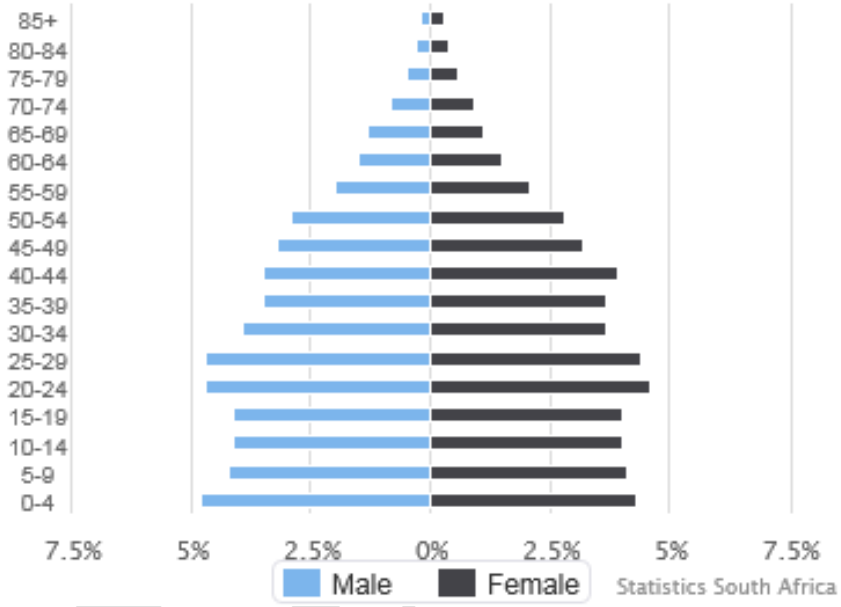
Ward	Areas	Population Group					Total Population
		Black	Coloured	Indian	White	Other	
1	Citrusdal farms						
3	Clanwilliam	1734	5 250	36	451	52	7 523
4	Elands Bay & Graafwater	1 265	7 477	53	1 216	30	10 041
5	Lamberts Bay & Leipoldtville	668	5 643	21	1 260	23	7 616
6	Wupperthal	682	6 300	21	874	14	7 890
Total		6 308	37 651	171	5 462	175	49 768

Table 7: Cederberg Race profile

The Black African population group experienced a decrease of 1% from 2011 to 2016. The Coloured and White population groups both experienced a slight increase in population numbers

The Cederberg population is nearly equally distributed between men (50.6%) and women (49.4%) Source: Statistics SA (2016)

Graph 1: Cederberg Gender and Age Distribution



According to the Cederberg IDP (2016:32) the 2011 population composition of Cederberg constituted 33.6% children and youth (0 – 19 years), 59.9% economically active population and 6.5% persons aged 65 and older of as per Statistics South Africa 25% children (0-14 years), working age 68% (15 -64 years) and the aged 7% (65+ years). The 2016 population composition of Cederberg constituted 37% children and youth (0-19 years), 63% economically active persons and 5% of the population was aged 65 and older. The increase in children and youth causes a strong dependency ratio and also a high demand for educational facilities and employment opportunities. The increase in birth rate after a decline for the previous ten years implies that growth is stimulated from in-migration and not from the residing residence.

The majority (86.3 %) of the Cederberg population speaks Afrikaans as a first language. This is followed by Sesotho (5.2%) and English (4.9%). The proportion of the population speaking Afrikaans increased by 1%, while the proportion of the population speaking English increased by 3.9%.

From 2011 to 2016 Cederberg municipal area experienced an increase in population numbers which `can mainly be attributed to migration from other provinces to look for better economic opportunities and improved living conditions.

The table below sets out three population projections per ward, one based on the current growth rate per ward, one based on the average current municipal growth rate and one based on the municipality's current drive to enhance the economy of the municipal area. The current household size per ward is used to determine the number of additional households in 2031, which represent the number of housing units that would be required per ward. The population growth projected according to different models is tabulated below:

		2011		Current Growth Rate Projections			Municipal Growth Rate Projections			Proposed Growth Rate as per Municipal Economic Foci Area		
Ward	Household Size	2011 Population	2011 Households	Ward Growth Rate	Projected 2031 Population	Projected 2031 Households	Municipal Growth Rate	Projected 2031 Population	Projected 2031 Households	Projected Ward Growth Rate	Projected 2031 Population	Projected 2031 Households
1 & 2 Citrusdal	4& 4	10 424 & 6 274	2 549 & 1 570	3% & 2.5%	18 827& 10 281	4 707& 2 570	2.3%	9 887	2 472	2.3%& 5%	16 427& 16 647	4 107& 4 164
3 Clanwilliam	3.3	7 523	2 295	-0.4%	6 943	2 104	2.3%	11 855	3 592	5%	19 961	6 049
4 Graafwater	3.6	10 041	2 679	4.2%	22 863	6 351	2.3%	15 823	4 395	2.3%	15 823	5 281
5 Lamberts Bay	3.3	7 616	2 155	2.3%	12 002	3 637	2.3%	12 002	3 637	5%	20 208	6 123
6 Wuppertal	3.5	7 890	2 267	4.7%	19 770	5 649	2.3%	12 433	3 552	2.3%	12 433	3 552
Total		**42 245**	**13 513**		**90 686**	**25 017**		**78 427**	**21 755**		**101 498**	**29 274**

Table 8: 20 Year growth projections - 2031, Cederberg

The Cedarberg is still a rural municipality with 6 persons per km².

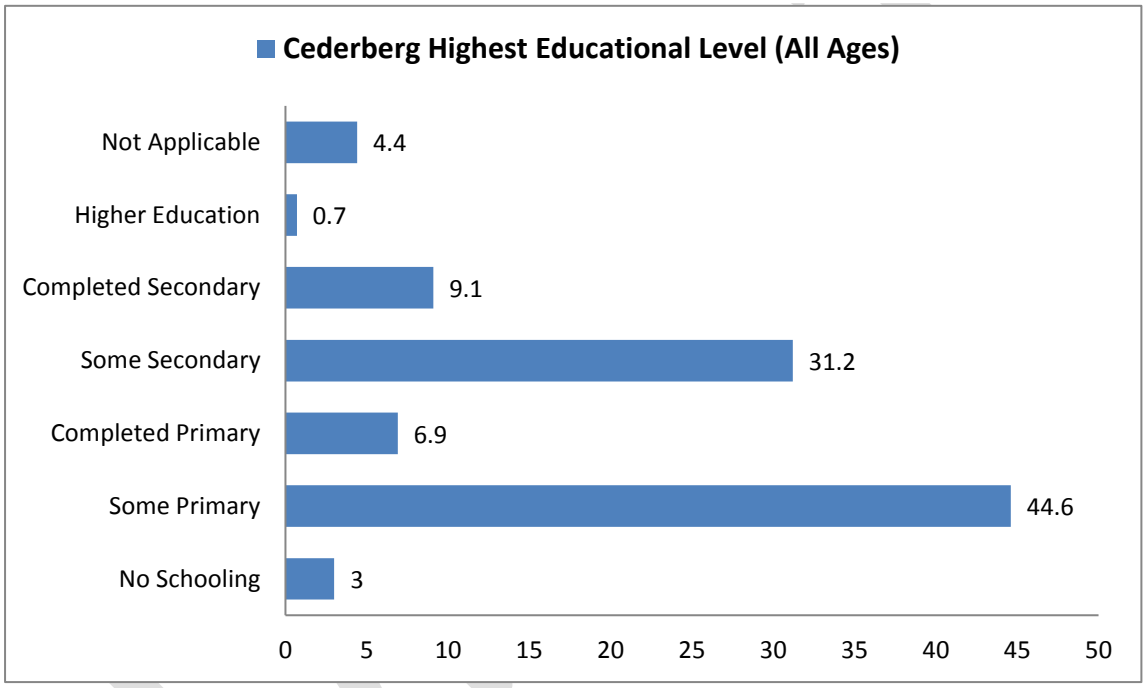
4.2.3 Health

The first point of contact would be at the primary healthcare level. Primary healthcare facilities include Community Health Centres (CHC'S, Community Day Centres (CDC's) and clinics (including satellite and mobile clinics). The table below indicates the amount of primary health care facilities in Cederberg from 2010 to 2015 (*Source: Cederberg Draft IDP Revision 2016-2017)*

In 2015 the Cederberg Municipal area had a total of 13 primary health care facilities including 6 clinics, 2 district hospitals, no satellite clinics, no health post and 5 mobile clinics.

The immunisation rate is 82.6%, the maternal mortality rate (per 100 000 live births) is 0%, and the teenage pregnancies-delivery rate to women under 18 is 12.2%.

4.2.4 Education



Graph 2: Educational Level

The successful completion of 7 years of formal schooling at the age of 14 or older, is equated to being literate. The literacy rate in Cederberg Municipal area is 73.2%, lower than the Western Cape literacy rate of 87, 2%. The number of learners enrolled at school (G1 -12 + ELSEN) was the lowest in the West Coast region during 2013 and 2014. Cederberg also experienced a very high dropout rate of 41.6%, the highest in the West Coast District. Cederberg however had the lowest learner teacher ratio of 28 learners per teacher which is similar to the rest of the district. The matric pass rate dropped sharply from 91.6% to 88.2% between 2013 and 2014. It is argued that this drop in pass rate is attributed to stricter assessment and marking criteria.

The educational levels translate broadly into skills levels: 47.3% of the population is semi- and unskilled, 21.9% of the population is skilled and 9.2% highly skilled. Looking at it slightly differently

nearly 8% (7.7%) of people age twenty and older have no schooling, 19.4% age twenty and more have matric and 5.1% aged twenty and older have a higher education qualification.

The table below illustrates the labour profile of Cederberg from 2005-2013

Sector composition	Number	Growth per annum	% of Total Employment
Highly –skilled	1193	0.7%	9.2
Skilled	2838	-0.6%	21.9
Semi-and unskilled	6128	-5.4%	47.3
Informal	2791	4.4%	21.5
Total employment	12 958	-2.3%	

Table 9: Labour profile

Source: Cederberg Draft IDP 2016-2017

The Cederberg Labour profile is characterized by job losses amongst skilled and semi- and unskilled labour. Semi- and unskilled (6 136) comprises of more than 50% of the labour force with Informal sector labour accounting for 2 791 jobs across the period 2005 – 2013.

In 2014 there are 25 schools in the municipal area of which 80% is no fee schools. There are 8 schools with libraries or media centres. There are 7 FET college sites.

4.2.5 Employment, Occupation and Levels of Income

In 2011 nearly 37.2% of the population were employed, 4.3% indicated they were unemployed, 25% were not active economically and 1% were discouraged work-seekers.

Unemployment is mainly concentrated amongst the youth (15 - 34 years) as the youth accounts for 64% of the unemployed in 2011. The age group 25 - 34 years is particularly vulnerable at 30% of the total unemployed. In 2011 the unemployment rate was 10.5% and the youth unemployment rate was 13.8%. The unemployment rate increased slightly 0.31% from 2001 to 2011. The unemployment rate for males decreased from 5.44% to 5.26%. Consequently the unemployment rate for females increased from 4.81% to 5.29% from 2001 to 2011.

Nearly sixty percent (57.9%) of the households, given their income of less than R3 500 per month, qualify for subsidized housing, whilst over a third of the households (31.7%) fall into the GAP housing category.

	No income – R38 200	**R38 201 – R153 800**	**R153 801+**
Cederberg	57.9	31.7	10.7

Table 10: Income Distribution

Source: Socio-economic profile, Cederberg (2015)

In 2011 11.3% of the households earned less than R400 per month whilst the per Capita Income in 2013 was R19 858.

Gini Coefficient:, a statistic of income inequality, is 0.64 (2011) which indicates fewer household earns all the income and other households earn little As Cederberg Municipality's Gini Coefficient is the highest in the West Coast District it confirms high poverty levels within the municipal area (Cederberg Draft IDP Revision 2016-2017). According to the Socio-economic profile of Cederberg (2015:12) the per capita income in the Cederberg Municipality is the lowest compared with other local municipalities within the West Coast District. The Municipality is therefore well behind its peers to achieve the 2030 NDP target of R110 000 per person, per annum

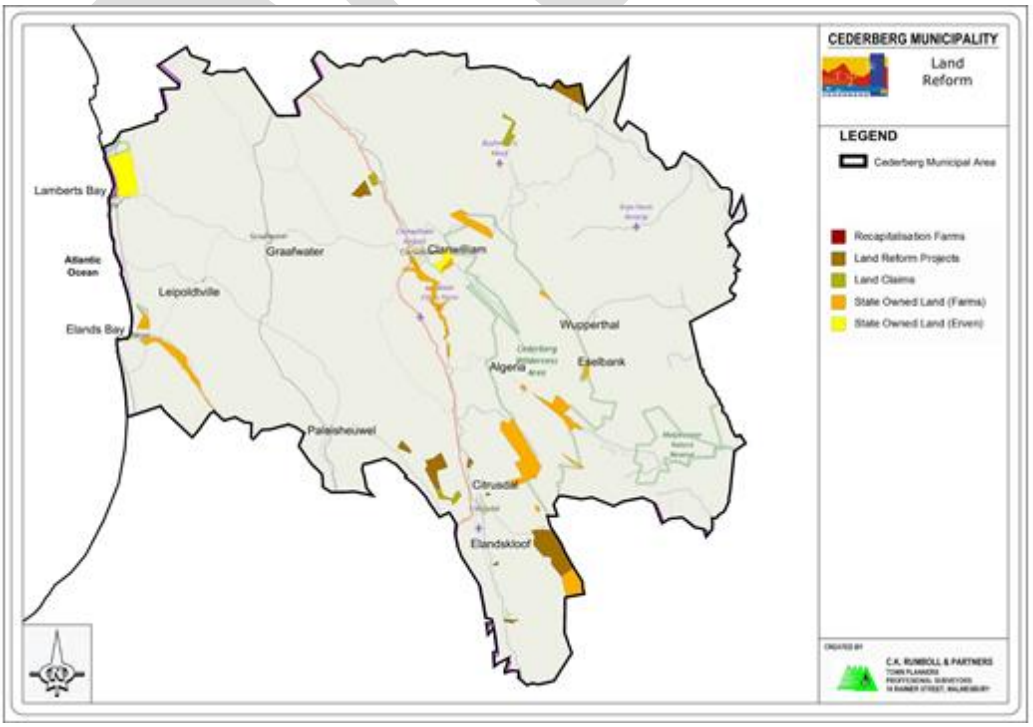
Ninety percent (90.3%) or 47 799 of the population receive and is dependent on social grants. Slightly more than 24 234 residence received Child Support Grants, translating to 50.7% of all grant recipients in the municipal area. A total of 28, 3% of residents on social assistance receive old-age pensions and 19, 4% receive disability grants. 5150 people do not receive social grants. There are five major social security grants in South Africa and each grant is dependent on an income-based means test. Grants are implemented and administered by a separate national government agency, the South African Social Security Agency (SASSA).

The poverty rate is the percentage of people living in households with an income less than the poverty income. The poverty income is defined as the minimum monthly income needed to sustain a household and varies according to household size. The larger the household the larger the income required to keep its members out of poverty.

The poverty rate for the Cederberg was 42.7% (2011). The levels recorded in Cederberg are approximately 10% higher than the levels recorded for the West Coast District for the same period.

4.2.6 Land Reform

Elandskloof, south east of Citrusdal, was the first land reform project where people were resettled on agricultural land. More than fifty years later shelter of these very people is still a challenge.



Map 6: Land reform

4.2.7 Cemeteries

Most of the towns and settlement in the Cederberg have their own cemetery. There is no regional cemetery.

4.2.8 Crime

Given the high unemployment rate and particularly where people have lost access to natural resource generating economic activity, residential burglaries and drug-related crime are dominant and on the increase. The social vulnerability of some communities is much higher along the West Coast than inland.

The Constitution upholds the notion that everybody has the right to freedom and security of the person. The safety of persons and property is therefore vitally important to the physical and emotional well-being of people and business. Without the respect of person and property, it would be impossible for people to live peacefully, without fear of attack and for businesses to flourish.

Peoples' general impressions, as well as official statistics on safety and crime issues, mould perceptions of areas as living spaces or place in which to establish businesses.

4.2.9 Property market patterns and growth pressures

Nearly ninety percent (87.1%) of households inhabit formal dwellings, whilst half (48.95) of the population in formal dwellings owned the house or is in the process of paying it off.

4.2.10 Municipal finance

The following table is an overview of the revenue and expenditure framework against the strategic objectives:

STRATEGIC OBJECTIVE	2016/2017 CAPITAL	2016/2017 REVENUE	2016/2017 EXPENDITURE
SO1: Sustainable basic service delivery and infrastructure development.	R 48 531 850.00	R 194 813 211.00	R 132 123 459.00
SO2: Implement strategies to ensure that the municipality is financial viable	R 240 000.00	R 45 787 594.00	R 38 954 980.00
SO3: Mainstreaming sustainability and optimising resource efficiency	R 455 000.00	R 917 182.00	R 21 104 460.00
SO4: Facilitate economic growth in municipal area.	R -	R 22 981 651.00	R 28 899 494.00
SO5: Good Governance, community development and community participation	R 1 333 900.00	R 1 293 001.00	R 9 023 475.00

Table 11: Municipal Budget

Total operating revenue will grow over the MTREF period. Total operating expenditure for the 2016/17 financial year has been determined to be R 219 million which translates into a budgeted deficit of R 10m. The municipality also budgeted R18million for depreciation and R10 million for debt impairment in the 2016/17 year. This trend is also relevant to the outer years as reserves is needed to replace infrastructure assets with own funds and be lesser grant depended in year 2017/2018. The 2016/17 capital budget of about R 50.5 million is mainly for upgrading of water and electricity infrastructure and waste water management.

4.3 Built Environment

The built environment in the Cederberg was and is shaped by the Landscape Framework and its elements:

Table 12: Landscape Framework and Elements

Landscape Framework and Elements		
Agricultural Landscape: - Agricultural cultivation; production; storage; - Traditional hunting and grazing areas;	- Mineral resources - Ocean and aquaculture - Cadastral patterns	- Citrus along Oliphant's river - Rooibos Tea - Potatoes
Wilderness Landscape: - untouched scenic beauty in the rural areas;	- Corridors (green belts)/ connector routes in rural areas - Regional landscape patterns	- Cederberg - Skurwe mountain reserve - Coast line
Water Landscape: - Waterways and connections	- Dams	- Clanwilliam Dam - Bulshoek Dam
Route Landscape: - Connector routes and transport	- Truck routes - Movement routes	- N7 - R27
Cultural-historical landscape: - Education, - Religious landscape, - Regional architecture, - Rituals and traditions, - Historical town landscape, - Historical routes	- Landscape of indigenous trade and contact and international trade and contact - Landscape of conflict - Slavery - Palaeontology (Fossils), - Archaeology, slavery	- West Coast College - San rock art - Wupperthal - Cederberg
Social landscape: - Community facilities, - Social identity,	- Recreation - Civil and administrative - Displacement, relocation and separation	- Fishing communities - Elandskloof

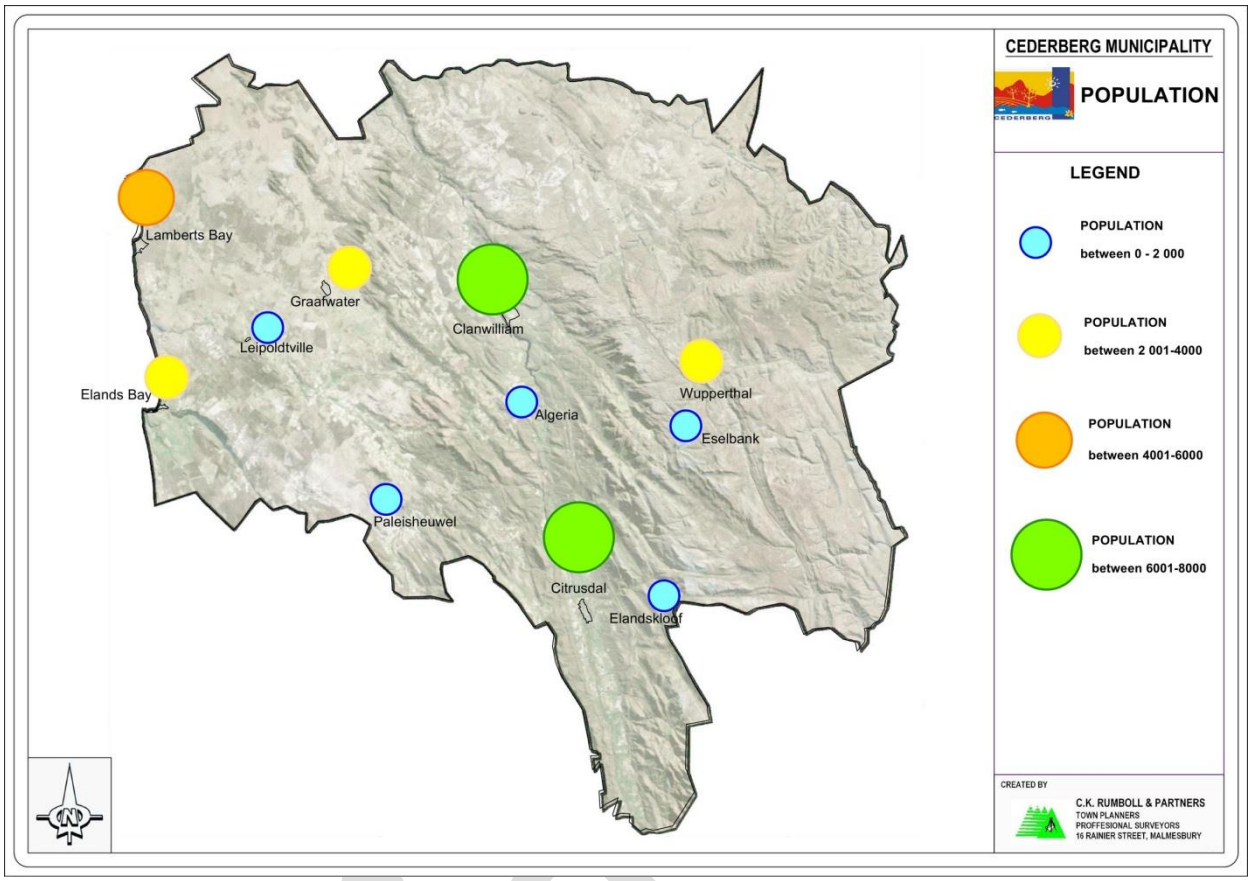
4.4 Hierarchy and role of settlements

The hierarchy of towns in the Cederberg municipal area are determined by human capital, infrastructure availability, economy, physical attributes, institutional capacity.

Table 13: Development potential of Cederberg Settlements (WDC SDF p72)

	Human Capital	Economy	Physical attributes	Infrastructure	Institutional	Composite Growth potential index
Clanwilliam	Medium	Low	Medium	Low	High	Low
Citrusdal	Medium	Low	High	Low	High	Low
Graafwater	High	Very low	Low	Medium	Medium	Low
Lambert Bay	Medium	Very low	Very low	High	High	Low
Elands Bay	Medium	Low	Medium	Medium	High	Medium
Cederberg municipal area	Low	Low	Medium	Low	High	Low

The map illustrates the population concentration in the settlements of the Cederberg.



Map 7: Population

Cederberg Municipal towns in hierarchical order are:

Sub-regional Node: Clanwilliam
Local Node: Citrusdal, Graafwater, Lamberts Bay and Elands Bay
Rural Settlement: Wupperthal, Leipoldtville, Paleisheuwel (access through R365)

Types of Settlements		
Town	Form	Function
Clanwilliam **Sub-regional node**	- Cederberg mountain wilderness - Olifantsriver and Jan Disselsriver - Fertile valley soil composition - N7 - Historic buildings	- Main administrative town - Agricultural service and commercial centre - Cultural history - Tourism - Light industrial (Rooibos tea, leather shoes)
Citrusdal **Local node**	- Cederberg mountain wilderness - Olifantsriver - Fertile valley soil composition	- Agricultural service centre - Citrus industry - Tourism

	- N7	
Graafwater **Local node**	- Rail way line - R364 - Biodiversity areas	- Local service centre - Agriculture
Lamberts Bay **Local node**	- Coast line - Harbour - Bird Island	- Tourism - Agriculture - Fisherman village (lobster) - Vacation destination
Elands Bay **Local node**	- Coast line - Verlorenvlei - Baboon mountain	- Low order service centre - Fisherman village - Vacation destination
Wupperthal **Rural settlement**	- Cederberg Mountain wilderness - Isolated - Historical buildings	- Local service centre - Locally produced products - Agriculture
Leipoldtville **Rural Settlement**	- Sandveld character - R365	- Local service centre - Social functions

4.5 Settlement densities

The urban to rural ration is nearly equal: 50,3% and 49,7%. The in-migration and urbanisation patterns to the Cederberg Municipal area in 2016 are indicated in the tables below.

Year moved to current place	2012	2013	2014	2015	2016	Total
Number of people moved into municipal area	609	797	897	1089	512	52 949
Eastern Cape					88	0.17%
Northern Cape					14	0.03%
Free state					25	0.05%
North West					16	0.03%
Outside SA					337	0.64%
52 949					480	

Table 14: In-migration into Cederberg

From the tables above in-migration to the Cederberg Municipal area is indicated at approximately 1% of the total population in 2016. Most of the in-migration occurred from outside South Africa. The towns of Clanwilliam and Citrusdal are the recipients of urbanisation due to the provision of services and likelihood of work.

To provide for sustainable and liveable environments in settlements, future densities proposed are as follows:

Town	Current Density du/ha	Proposed density du/ha
Clanwilliam	7 – 8	13
Citrusdal	6 – 8	15
Lamberts Bay	9 – 10	12
Elands Bay	11 – 12	15
Graafwater	11 – 12	15
Wupperthal	5	5
Leipoldtville	3.5 – 4.5	7

Table 15: Density of Residential areas

The urban edge of each of the various towns was determined and provide for vacant land for residential development purposes with due consideration to the densities proposed.

4.6 Land Use Management Issues

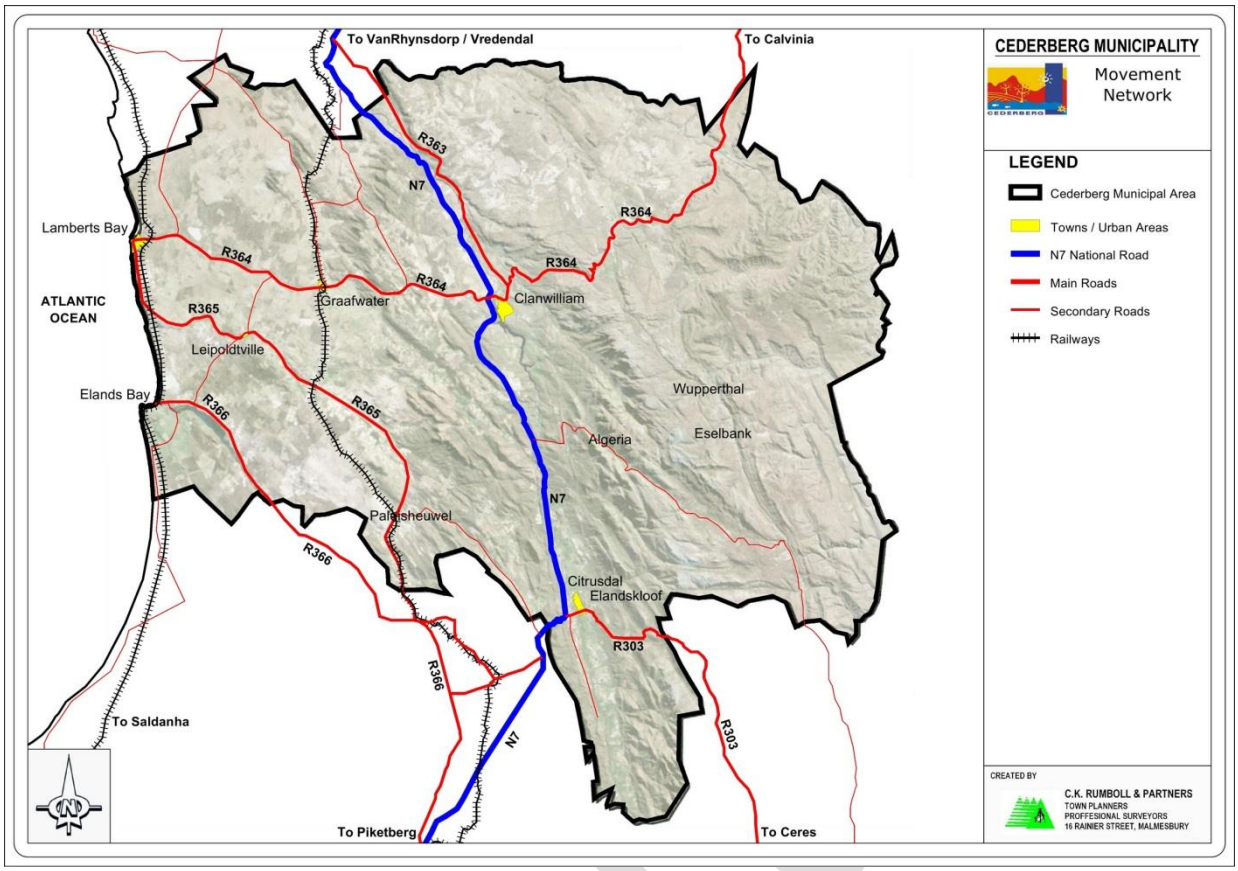
Provision of land for social amenities should be kept in mind (as per standards of provincial social amenities) when planning settlement extensions:

- 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/ 2 500 dwellings – 2.6ha
- 1 library/ 10 000 persons of 2 500 dwellings – 0.1ha
- 1 church/ 1 000 people – 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

4.7 Transportation

The Cederberg has two main routes i.e. the N7 and the R27 linking the municipal area to Namibia and to ports (air and water) in Cape Town and Saldanha.

Smaller routes i.e. the R 363, 364, 365 and 366 traverse the region from east to west connection the N7 to the coast.



Map 8: Movement network

4.8 Infrastructure

A summary of all service infrastructure compare to the demographics, housing need and existing service provision according to StatsSA follows. The summary includes an assessment of each service type making use of the traffic light system:

Additional Capacity: can accommodate demand over the next 20 years	
Adequate/ Sufficient: can accommodate existing demand and units planned in pipeline	
Limited capacity / Making provision: can accommodate existing demand, but experience problems, cannot accommodate units planned in pipeline or capacity is created as projects are planned, budgeted and implemented	
Insufficient capacity: cannot accommodate existing demand	
Very high need for services as earmarked for settlement development	
High need for services as earmarked for limited settlement development	
Low need for services as not earmarked for settlement development	

4.9 Water Infrastructure

Nearly seventy five percent (74.6%) have access to piped water, and 20% have access to water on the stand (erf). (97.6% in 2014) The municipality does not have blue drop status as yet, but scored 80.4% in 2013/2014.

An overview of the bulk water infrastructure and supply capacity is summarized below:

Towns	Bulk Water Supply	Supply Capacity	Reticulation Capacity	Notes
Clanwilliam	Adequate (Oliphant's' dam) (Designs of new pump station & water purification plant completed)	Require Upgrade 2.5Ml	Require improvement (Phase 1 (pressure management) of improvement plan (network and pipes) implemented)	R62 million required (including replacement of pipe to purification works)
Citrusdal	Insufficient Source (2 boreholes & taking from river –dependent on boreholes)	Require Upgrading 3Ml (existing 3Ml reservoir)	Require upgrade (pressure sustaining valve & asbestos pipes)	Adequate supply from boreholes but no reserves; Occasional non-supply from Oliphant's River R15 million required
Lamberts Bay	Insufficient, desalination plant in construction. Existing boreholes.	Borehole balancing dam capacity insufficient. Upgrade borehole reservoir (3ML)	Upgrade pump station, standby pump and reservoirs (Wadrift)	At least R3.5 million required for reticulation; (R12 million co-funding for desalination plant)
Elands Bay	Boreholes sufficient	Require Upgrade 1Ml (48h spare capacity)	Spare Capacity on reticulation as diameter of pipes is sufficient	R5 million required
Graafwater	Adequate, additional boreholes in process	Require Upgrade 1.5Ml (existing 1ML)	Sufficient	R5.4 million required.
Wuppertal	Adequate source from rivers to all settlements. Insufficient during peak season.	Sufficient, need maintenance	Require upgrade between source and dam from where reticulation takes place	R8 million required.
Leipoldtville	Iron content of source high. Requires alternative source.	Require new reservoir (0.5Ml)	Require upgrade	R5 million required
Paleisheuwel	Sufficient	Sufficient	Requires Upgrading	R0.25million required
Algeria	Adequate, no purification as community prefers untreated water. Need additional borehole capacity	Adequate	Adequate	

Table 16: Water infrastructure

4.10 Waste Water Treatment (Sanitation)

Just over eighty percent (82.4%) of the household have access to flush toilets (connected to sewerage or septic tanks). Fourteen percent (14%) of households did not have access to sanitation and 3% make use of the bucket system.

An overview of the bulk treatment capacity and infrastructure is summarized below:

Towns	Bulk Treatment	Capacity	Pipe Capacity	Notes
Clanwilliam	Require Upgrade	Main pump station requires upgrade	Upgrade pump station & feeding lines	R21.4 million required
Citrusdal	Relocation and upgrade in process	Inadequate	Inadequate	Municipality to contribute R15 million
Lamberts Bay	Inadequate	Inadequate	Inadequate	R22.3million required
Elands Bay	Inadequate, needs upgrade	Inadequate	Require network & pump station upgrade	Overload during summer R15 million required
Graafwater	Oxidation ponds require upgrading	Inadequate	Inadequate	R23.4 million required
Wuppertal	Oxidation ponds sufficient (Partially waterborne, Partially UDS (Heuningvlei, Moddervlei, Eselbank)	Sufficient	Sufficient	Moravian Church is responsible
Leipoldtville	None	Individual septic tanks/ few buckets remaining	Need pipe capacity to develop network & bulk treatment	R10 million required
Paleisheuwel	Conservancy Tanks, Municipality pumps out tanks when required	Conservancy tanks needs maintenance	None	R0.15million required
Algeria	Existing sewerage station Sludge pumps needs upgrading	Needs upgrading	Adequate	R1 million required
Elandskloof	Require a system	None	None	

Map 9: Waste water infrastructure

4.11 Solid Waste Management

Nearly sixty percent (58.3%) of households has refuse removed once a week. Thirty percent (30.6%) of households have their own rubbish dump. These are most likely rural households or households on farms.

4.12 Energy

Nearly ninety percent (88.5 %) of households have access to electricity.

An overview of the bulk electricity capacity and infrastructure is summarized below:

Towns	Supplier	Capacity	Reticulation Capacity	Notes
Clanwilliam	Cederberg Municipality	Insufficient_3 MvA	Sufficient	Require 5MvA. Eskom has no spare capacity and Cederberg Municipality has to provide. Require R13 million to create the required capacity and an additional R8.5 million as security waver
Citrusdal	Cederberg Municipality	Adequate_1Mva, using 0.5MvA	Sufficient	
Lamberts Bay	Cederberg Municipality	Require upgrade from 2.7MvA to 3.5MvA	Sufficient	Upgrade will take place alongside subsidized housing development.
Elands Bay	Cederberg Municipality	Adequate _ 1MvA, using 400KvA	Sufficient	
Graafwater	Cederberg Municipality	Require Upgrade from 0.75MvA to 1MvA	Sufficient	Upgrade will take place alongside phase II of subsidized housing development.
Wuppertal	Eskom	Adequate	Sufficient	
Leipoldtville	Eskom	Adequate	Sufficient	
Paleisheuwel	Eskom	Adequate	Sufficient	
Algeria	Eskom	Adequate	Sufficient	
Elandskloof	Eskom	Adequate	Sufficient	

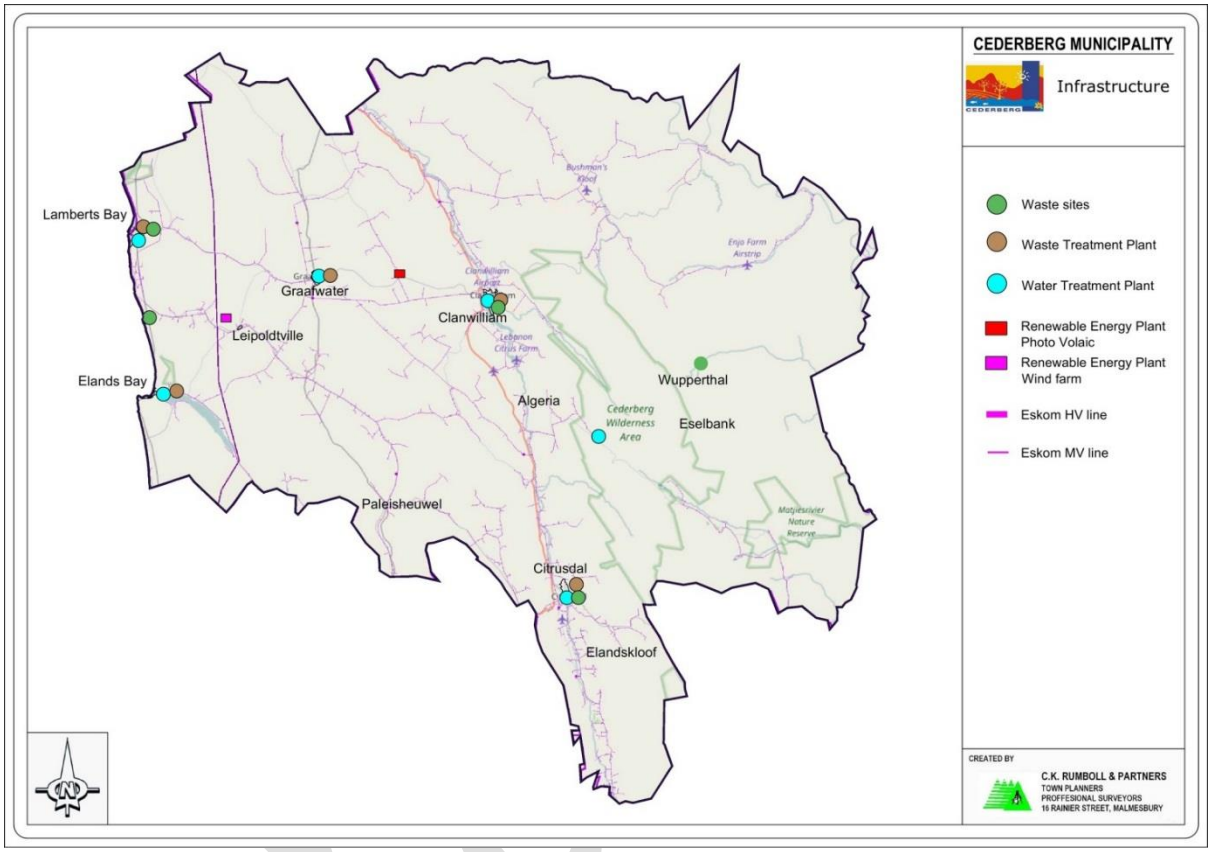
Table 17: Electrical Infrastructure

Table 18: Overview of infrastructure

	Ward 1	Ward 2	Ward 3	Ward 4	Ward 5	Ward 6
Population	10 424	6 274	7 523	10 041	7 616	7 890
Number of households	2 549	1 570	2 295	2 679	2 155	2 267
Population growth rate	3%	2.5%	-0.4%	4.2%	2.3%	4.7%
Dependency ratio	2.5	2.9	2.7	2.5	2.7	3.9
Unemployment rate	4.3%	5.3%	12.6%	4.2%	10%	2.7%
Waiting list	1937		1398	702	1333	29
Existing engineering services						
Lighting	77%	96%	84%	92%	96%	91%
Piped potable water	22%	97%	94%	46%	84%	15%
Sewerage	71%	91%	79%	89%	65%	58%
Infrastructure Status quo in settlements						
Electricity supply	Adequate		Insufficient	Insufficient	Insufficient	Sufficient
Bulk water supply	Adequate, except in summer		Adequate	Adequate	Adequate	Adequate
Sewerage	Inadequate		Adequate	Inadequate	Inadequate	Inadequate
Wards demonstrating the highest need for service delivery	High	Very high	Low	Medium	Very High	Medium

The provision of services is summarised in the table below:

The map below illustrate the regional infrastructure: power line, waste water treatment plans, water purification plans and waste sites and renewable energy sites.



Map 10: Regional infrastructure

4.13 Telecommunications

Nearly twenty percent (19.3%) of households have access to internet and it is anticipated that in 2017 there will be 6 Wi-Fi hotspots in the Cederberg.

4.14 Human Settlements

The housing need within the Cederberg Municipality exists primarily for lower income groups. The table below shows the housing backlog (HSP, 2012) and the current waiting list. The Municipality is busy updating the current waiting list to capture backyard dwellers, individuals that have received houses or are deceased. These figures are thus subject to change. The table below shows a 31% increase in the number of people on the waiting list since 2012 and should be updated accordingly.

Town	Housing Backlog (2012)			Housing Backlog (2014)		
Type	Sub	GAP	Total	Sub	GAP	Total
Clanwilliam	908	39	1083	1177	199	1376
Citrusdal	1488	45	1648	1487	132	1617
Lamberts Bay	550	35	709	881	109	992
Elands Bay	152	14	213	324	19	343
Graafwater	219	16	280	665	37	702
Leipoldtville	-	53	58	-	-	-
Wuppertal	-	-	-	4	0	4
Outside	-	-	6	22	0	22
Algeria	-	-	-	25	-	25
Elandskloof	120	-	120	320	-	320
Total	3437	202	4117	4905	496	5401

Table 19: Waiting list 2012-2014, Cederberg (Source: Cederberg HSP, 2015)

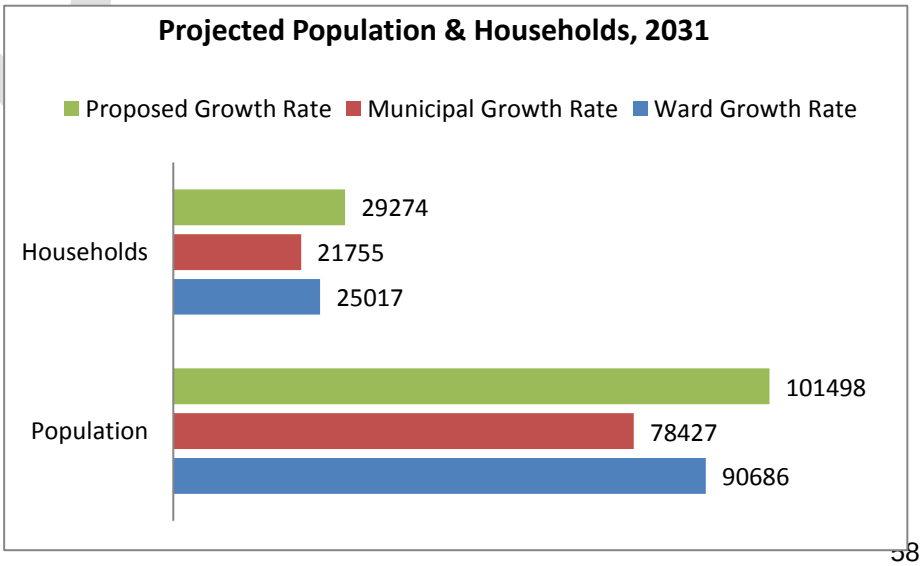
The greatest need for subsidized housing exists in Clanwilliam and Citrusdal. It has also been established in consultation with municipal officials, that in the higher income groups, there is a lack of affordable housing in the market. A real need has been identified within the GAP housing market, which is not currently provided for by either the private or the public sector. As a result there is an associated lack of rental stock available to this middle income group.

4.15 Land: Projected Future Housing and Land Demand (2031)

Observing the changes over the past ten years, the municipality is of the opinion that the proposed economic enhancement strategy will provide impetus for the towns of Clanwilliam, Citrusdal, Lamberts and Elands Bay to grow faster than the ward and municipal growth rate. Hence the growth rate of the wards accommodating these towns, Wards 2, 3 and 5, is proposed to be 5%. It is anticipated that the growth in the rural wards, such as Wards 1, 4 and 6 will be absorbed in the growth of the four towns mentioned and the proposed growth rate for these wards is the municipal growth rate of 2.3%. Applying the proposed growth rate results in approximately 10 000 more people and 4 000 more households over the next 20 years compared to applying the ward growth rate.

The combination of the above growth rate referred to as the proposed growth rate, forms the basis of assessing the land provision of the SDF.

Graph 3: Cederberg Projected Population & Households, 2031



4.16 Secondary Sectors: Manufacturing, Construction and Transport

The sectoral growth for the three dominant sectors across the West Coast including Cederberg indicates slow growth and regression in some areas which has significant influence on the local economy of Cederberg. The table below displays the growth per industry from 2005 till 2013.

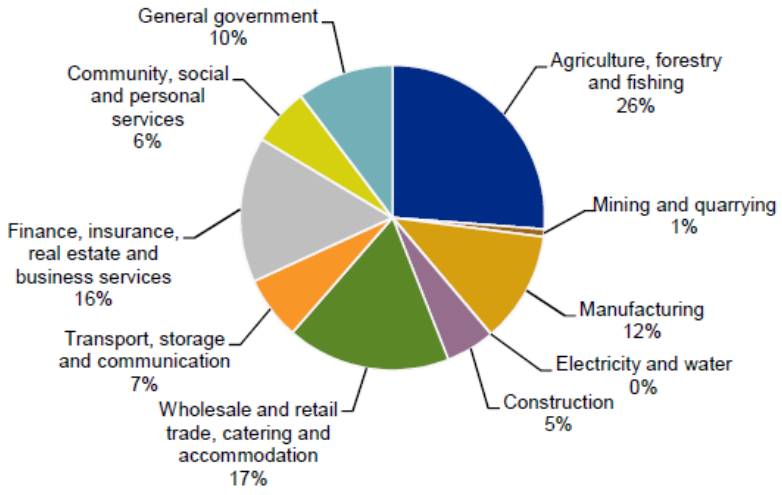
	Growth per industry from 2005 till 2013	Contribution per industry 2013
Agriculture, forestry & fishing	-1.5%	26%
Manufacturing	-1.9%	12%
Construction	10	5%
Wholesale and retail trade, catering and accommodation		17%
Commercial services	4	
Finance, insurance, real estate an business services		16%
General Government, social and personal services	4.3	10%
Community, social and personal services		65
Mining and quarrying		1%
Electricity and water		0%
Other	-1.1	
Total	1.6%	
Source: Cederberg Draft IDP 2016-2		

Table 20: Economic sector growth

Agriculture which is a major contributor to economic growth and employment alike is contracting at 1.5% for the assessed peri[illegible]while manufacturing displays similar regression at 1.9%. The highly skilled commercial services sector remains robust at 4%.

Agriculture, Forestry and Fishing contributes 26.2% to the economy, Wholesale and Retail Trade, Catering and Accommodation Services contributes 17.4% and Finance, insurance and Business Services contributes 15.4%.

Graph 4: Sectoral composition 2013

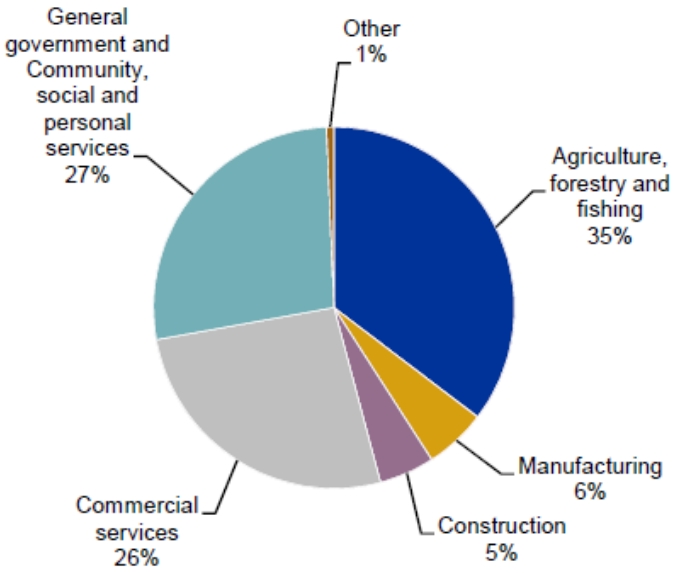


Source: Municipal Economic Review and Outlook (MERO), 2015

The sectoral employment composition of Cederberg confirms agriculture, forestry and fishing (26%) as dominant economic driver. Wholesale and retail trade, catering and accommodation (17%) also features prominently but this particular sub-sector is

not sustainable in achieving high and constant levels of economic growth as its dependent on primary economic sectors to a large extent. Manufacturing which is generally related to Agro-processing features strongly at 12% while the highly skilled segment of the economy, Finance, Insurance and Business Services accounts for 16%.

Graph 5: Employment by sector 2013



Source: Municipal Economic Review and Outlook (MERO), 2015

Again, the importance of the agriculture sector (35%) to Cederberg's overall welfare cannot be emphasised enough. Commercial services (26%) appears to be equally influential in terms of the overall labour profile but given the skills profile of Cederberg and the burning need in terms of socio-economic development, the challenge remains to gear the economy and associated municipal and provincial strategies to target the primary sector activity of agriculture and its connected value chains. General government and Community, social and personal services provide for 27%, Manufacturing 6% and Construction 5% of the job opportunities.

4.17 Tourism

The **Cederberg** Mountains and nature reserve are located near Clanwilliam, approximately 300 km north of Cape Town, South Africa. The mountain range is named after the endangered Clanwilliam cedar (Widdringtonia cedarbergensis), which is a tree endemic to the area. The mountains are noted for dramatic rock formations and San rock art. The Cederberg Wilderness Area is administered by Cape Nature. As a wilderness area, the primary activity is eco-tourism, including camping and rock climbing and hiking. The main campsite, Algeria, is operated by Cape Nature while others such as Sanddrif, Driehoek, Jamaka and Kromrivier are privately operated. There are various 4x4 routes.

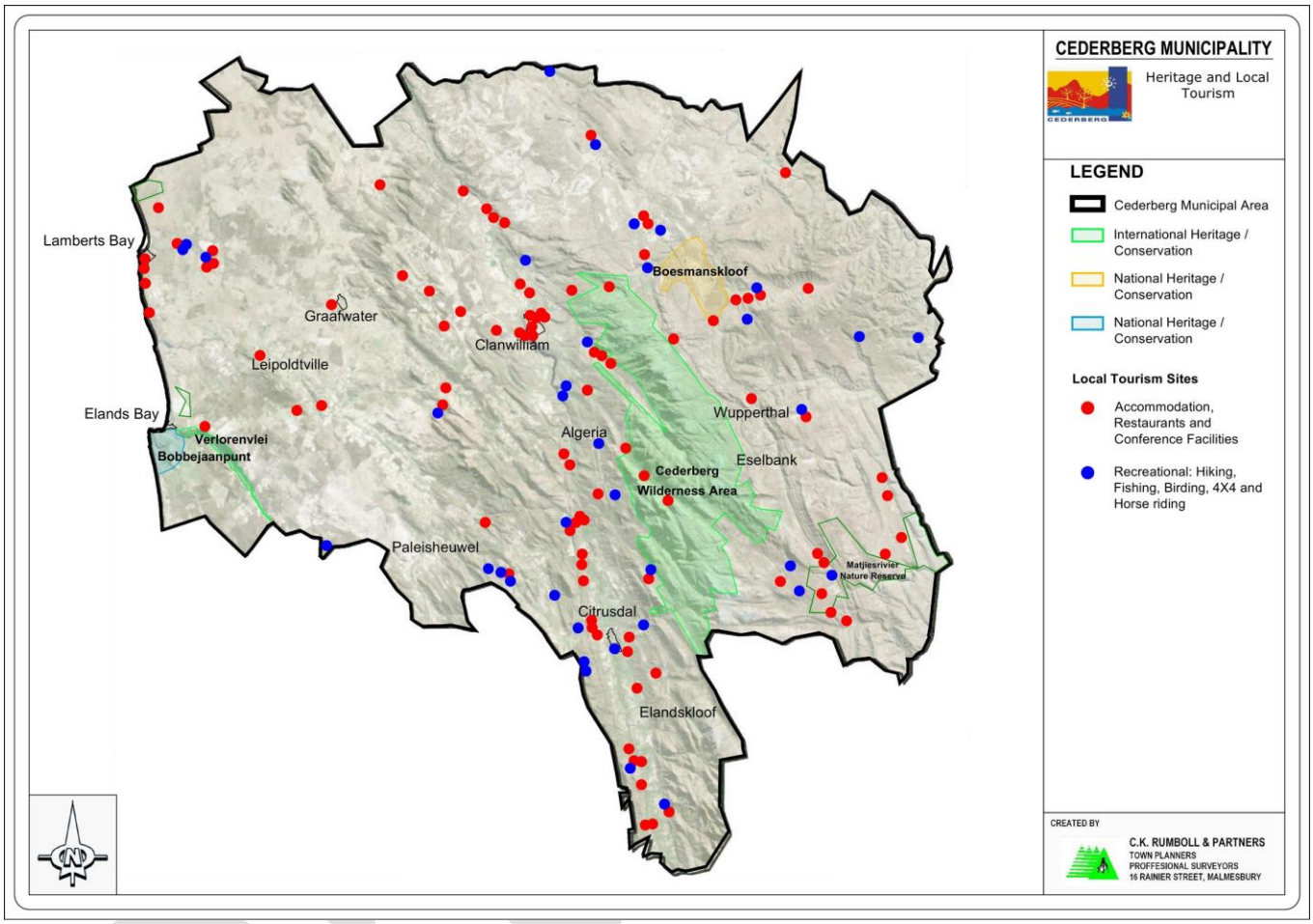
The Cederberg is renowned for its quality of rock climbing routes particularly around the Krakadouw and Table mountain peaks. The Table Mountain Sandstone creates ideal conditions for spectacular routes. There are numerous day and overnight hikes including the popular and spectacular Wolf mountain Arch, Wolf mountain Cracks and the Maltese Cross.

The area is also home to an amateur astronomical observatory, which regularly hosts open evenings for the public.

A large tract of the northern Cederberg is owned by the Moravian Church. The quaint village of Wuppertal forms part of a mission station route that provides visitors with an interesting view of rural life. The village is also a well-known centre for hand-made leather shoes and boots. One of the "buite stasies" (directly translated as outer stations) is Heuningvlei, a small picturesque hamlet that is in the process of developing a donkey cart trail from the summit of Pakhuis Pass to the hamlet.

The Cederberg is also the site of the Senior Scout Adventure, a 12-day event for Scouts run every second year by the South African Scout Association.

The map illustrates accommodation and recreational activities and the heritage site of the Cederberg.



Map 11: Heritage and Tourism

CHAPTER 5: Spatial Analysis and Synthesis: Synthesis

The directives generated by the foregoing analysis and thus informed by the relevant legislation and policies are outlined below according to the following categories:

- Bio-Physical Environment
- Socio-Economic Environment
- Built Environment

5.1 Biophysical Environment

The directives for the biophysical environments are:

Agriculture: Protect and Preserve agricultural resources
• No uncultivated natural areas will be cultivated without the written consent of the minister; • Land with a slope of more than 20% will not be cultivated without the written consent of the minister; • Cultivated land should be effectively managed to prevent water and wind erosion. • Reserve productive agricultural land for agricultural purposes. • Vegetation within a vlei, wetland, and marsh or within flood areas will not be utilised if the use intended will result in damage to or destroy the agricultural resources in the area.
Support different sizes of agricultural entities: • Retain the rural character of the area; • Increase the variety of agricultural related land uses including tourism; • Subdivision of agricultural land to create 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; • Increase production; • Settlement of new farmers; • Creation of community forums in the smallholding areas to discuss development issues and establish development parameters for these areas. Re-assess development parameters in smallholding areas. • Support the development potential of the Intensive Rural Corridor(s). • Approval of facilities such as tourist facilities and farm stalls as consent uses on farms. • Support nodal development in agricultural areas along prominent transport links and intersections.
Natural Environment: Support the expansion of the statutory wilderness areas in the Cederberg region.
• Link the natural environment in the Cederberg Municipal area to that larger network of reserves and conservation areas in the larger region. • 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) should be included in the SDF.
- Create a register for all the national, provincial and local conservation areas.
- Manage conservation areas in accordance with national norms and standards.

The disturbance of ecosystems should be avoided, minimized or restored.

Integrate ecological processes with the needs of the communities to ensure the sustainable use of resources in and around the coastal areas (bioregional planning). Sustainable development of coastal areas based on bioregional planning principles.

Create marine reserves to consolidate and expand natural habitat of animal communities.

Any activities being mining, planning or business that have an impact on the environment need to comply with regulations of the National Environmental Management Act.

Mining :

Determine all mineral and geological resources. Rehabilitation of existing mining areas and the management of mining activities to limit ecological and aesthetic damage.

Water

Water:

- Provide in the current and future basic human water needs.
- Provide equal access to water.
- Address the results of race and gender discrimination on access to water.
- Promote the effective and sustainable use of water in the interest 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.

Water for Recreation: Proactively stimulate the local economy through the preservation of the rural character around dams and water resources.

- 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.

Heritage:

Municipalities are responsible for the grading of the heritage resources within their municipal areas to ensure the effective management and preservation of these resources. Grading 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 are done 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.

The local authority can:

- Declare special heritage planning areas;
- Protect heritage resources;
- Can issue a no-development instruction.

The inventory of heritage resources in an area under the management of the municipality must be submitted to the relevant provincial heritage authority as part of the SDF process.

Heritage areas should be identified and preserved as part of the review of the zoning scheme, review of the spatial development framework or on initiative by the provincial heritage authority.

Support the preservation of historic buildings and structure, as well as agrological resources on state and private land

5.2 Socio Economic Environment

The spatial directives for the socio- economic environment are:

Demography:

- Correct the past and current social inequalities by focusing on people rather than places.
- Provide a variety of education opportunities that is accessible for all age groups.

Economy:

- Settlement and economic growth potential must focus on activity corridors and nodes within the main growth centres.
- Maintain sustainable agricultural entities and prevent the fragmentation of agricultural land. Poor quality agricultural land can be considered for development opportunities.
- Spatially indicate opportunities for job creation and economic up-liftment within the local and regional level.
- Provide for the relevant road infrastructure and identify areas where local production can take place.
- Support regional growth points.
- Identify suitable areas for settlement of small and upcoming farmers.
- Identify land in urban areas where development and expansion of agricultural markets can take place.
- Identify suitable land in public ownership for use as community gardens and by small farmers.

Tourism:

- Conservation of the natural environment and development of the tourism market within the natural environment with specific reference to the West Coast wild flowers, Eco (Cederberg) and adventure tourism. Enable the participation of all communities within the tourism market.
- Support the development of tourism infrastructure that complies with architectural,

environmental and aesthetic requirements.
- Upgrading of roads that form part of tourism routes.
- Development of tourism facilities in accordance with tourism land use classifications.

5.3 Built Environment

The directives for the built environment are:

Housing:

Ensure the effective and safe use of land considering various factors including geological formation and harmful areas.

Social Infrastructure:

Ensure a good quality of life, high level of health status and active community involvement of all residents.

Services:

Bulk Infrastructure

- Determine the bulk infrastructure required in the Cederberg over the next 20 years considering the growth rate, densification strategy and needs of the community.
- Determine the most suitable locations for bulk infrastructure facilities to allow the delivery of services at an acceptable cost.
- Use non-renewable resources in a responsible manner not exceeding predetermined limits.

Waste

- Avoid waste and Recycle
- Dispose in manner limiting environmental pollution and ecological health impacts.
- Improve access to landfill sites or transfer stations.
- Identify new locations for landfill sites and composting facilities.

Urban Design:

Create sustainable and integrated living environments in all Cederberg towns.

- Guide and coordinate spatial planning for the next 20 year period;
- Identify suitable areas for IDP projects.
- Create and support place identity of towns and neighbourhoods.
- Strategically guide public spending.
- Provide direction and confidence for investment by the private sector.

Determine the extent of land required for all land uses in the next 20 year time period while considering the conservation of the natural and built environment.

Provide clear guidelines for the desired development outcomes to the private sector.

Increase the predictability of the development environment through the identification of “no go”, “possible” and “developable” areas for development.

Restore the spatial legacy left by apartheid.

Categorise Cederberg according to the Bioregional Planning Categories to support sustainable development.

Review land use planning categories in accordance with the Spatial Planning Categories.

Apply the land use classification of the spatial planning categories, to facilitate the objective decision making in development applications.

Create spatial guidelines for land uses to allow the reorientation of communities to allow for a more equal and sustainable environment without impacting on existing land use rights.
Conservation of the environment, management of environmental pollution and Identify areas for limited development.
Preserve the character of the Cederberg towns, as well as the unique West Coast character of the rural areas.
Preserve the natural as well as the cultural heritage environments.
Preserve the agricultural character of the Cederberg particularly along the Oliphant's river.
Support the development of communities where the work and living areas are located in close proximity and more integrated.
Discourage urban sprawl in urban areas and ensure the development of compact urban areas.
Provide in the need of all communities in a cost effective manner.
Support the restoration of historic spatial patterns and the effective and efficient use of existing infrastructure.
Integrate the social, economic, institutional and physical aspects of land development.
Support the planting of trees by all members of the community.
Provide areas for urbanisation and provide for continuous strengthening of the place identify of the areas;

- Restructuring and creation of integrated and compact urban areas that can proactively accommodate growth.
- Provide suitable levels of services and support he effective use of existing services.
- Provide for subsidised housing in a fair manner.

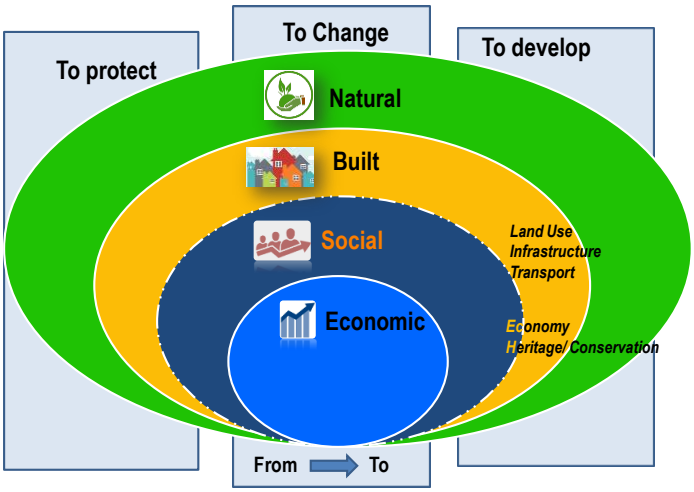
CHAPTER 6: Objectives, Strategy and Conceptual Framework

6.1 Spatial Objective

The overall spatial objective of the Cederberg Municipality is **to develop and protect sustainable, liveable settlements and rural environments**. The following table provides the definitions and features to provide a clear directive of the terms liveable and sustainable.

Definition	Features
Liveable Environments *(Relationship between people and their settlements - present)* *A liveable settlement satisfies more than the basic needs of the communities – it refers to the extent to which the individual as well as the community's needs for social facilities and health facilities are met. It also is closely related to the quality of life and the level of satisfaction that is experienced by the residents of towns and settlements. (van Kamp et al, 2003)*	*Liveable environments are recognized by:* • *Economic growth (economic) – creation of economic, social, cultural and recreational opportunities; provision of mixed uses; the availability of or opportunities to create a variety of services, educational facilities, recreational and job opportunities; provision of different housing typologies and densities.* • *Accessibility (social) – easy access to opportunities and facilities - work/education facilities/housing and recreational facilities are easily accessible and close together; prioritise the incorporation of public transport and pedestrian friendly routes within the movement network to reduce the dependency on motor vehicles.* • *Place Identity (natural & built) – create urban environments with unique place identity that reflect the natural and cultural context that become part of people's perception of the place; access to open space areas of high quality, scale vs. locality are used to arrange elements to create a place identity (Behrens, R & Watson, V, 1996)*
Sustainable Settlements *(Relationship between settlement and environment – future)* *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 improve the*	*Balancing between the three pillars of sustainability:* • *Ecological integrity (Planet) – the continued ability of the natural and built environment to provide in, and continue to provide in all the earthly needs.* • *Social Justice (People) - material wellbeing (no poverty) and provision of physical and moral wellbeing in which a complex society and ecology can continue to exist and improve. Rectify the spatial legacy of Apartheid.* • Economical Effectiveness (Prosperity) – optimising benefits through reduced costs, which include social costs.

liveability of a settlement by reducing the impact on the environment through reduced use of resources and the generation of less waste -



The following spatial objectives for the different environments in the Cederberg emerged:

Bio-physical Environment:

To determine conservation and development borders, overlay zones for natural areas (valleys and mountains), agriculture, water catchment and sources, and heritage areas.

Socio-economic Environment:

To stimulate the economy and alleviate poverty by focussing on regional exports and the creation of tourist and agri-industrial corridors (i.e. rural development and climate change corridors).

To Encourage the social up-liftment in the Cederberg through the provision of housing and ownership, the creation of effective and safe living environments and supporting economic opportunities in the area.

Built Environment:

To provide sufficient bulk infrastructure to service the expanding housing and industrial demand.

To be supportive of the rural areas by encouraging transport networks, education and access to information through the electronic media.

To protect the integrity of the smaller towns.

To support the movement to seek alternative energy generation methods.

The spatial objectives translated into themes and strategies.

6.2 Spatial Themes and Strategies

To develop an implementation plan, six spatial themes were identified from the Status Quo report, SWOT analysis and the Overall Strategic Objective supporting the four pillars of sustainable development:

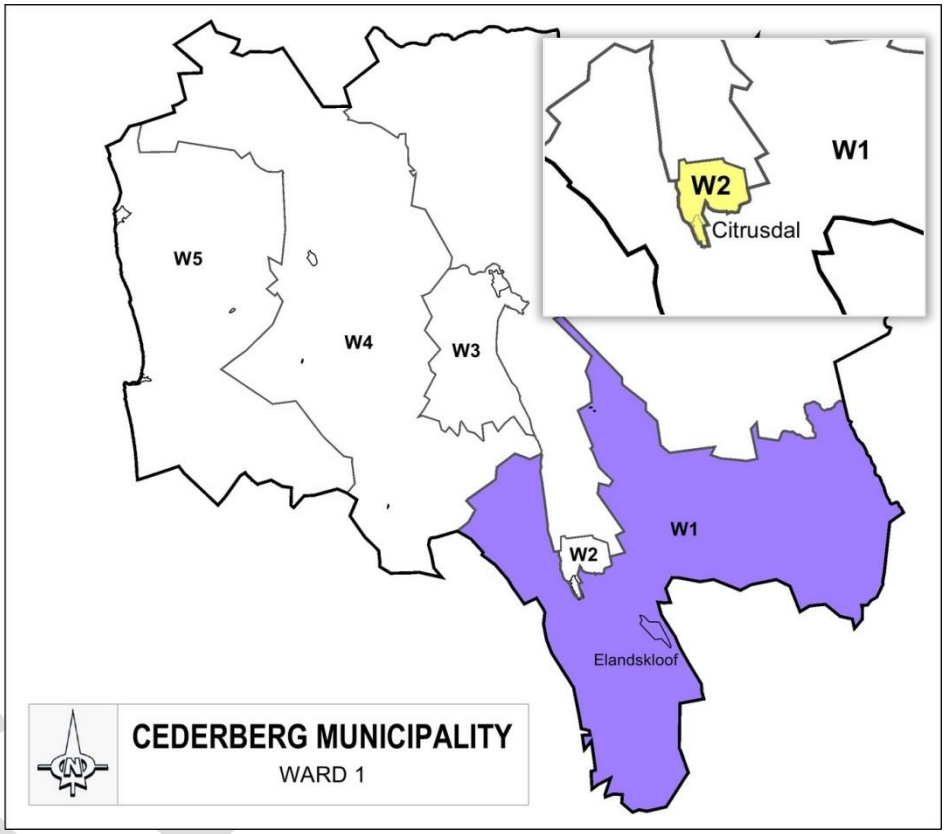
CEDERBERG SPATIAL DEVELOPMENT FRAMEWORK – 2017 - 2022	
SPATIAL THEMES	**STRATEGIES**
THEME 1 **Maximize Economic Opportunities and Comparative advantages** Facilitate economic sector growth (including mining, agriculture, tourism, commercial and industry) in accordance with their potential.	**Strategy 1**: Support growth in areas of economic potential. **Strategy 2**: Grow and diversify the agricultural sector by supporting alternative and intensive uses like agri-processing and product development, agri-tourism, alternative energy generation, mining and intensive agriculture on smaller agricultural units. **Strategy 3**: Support agri-industry corridors. **Strategy 4**: Support and develop urban and rural based tourism locally and regionally. **Strategy 5**: Spatially strengthen mobility and economic links.
THEME 2 **Enable sustainable Rural and Agricultural Development** Support the Cederberg as a primary agricultural production area in the West Coast region and in Western Cape. Capitalize on existing agricultural activities and support diversification in the agricultural sector. Promote land reform and urban agriculture to support food security and agri-tourism.	**Strategy 2**: Grow and diversify the agricultural sector by supporting alternative and intensive uses like agri-processing and product development, agri-tourism, alternative energy generation, mining and intensive agriculture on smaller agricultural units. **Strategy 3**: Support agri-industry corridors. **Strategy 6**: Support food security through protection of agricultural resources, supporting smaller agricultural units, facilitation of land reform and urban agriculture. **Strategy 7**: Promote alternative energy generation and mining but not at the cost of conservation and the rural landscape.
THEME 3 **Enhance Environmental Conservation and Cultivation** Recognize and strengthening of the natural assets within the Cederberg and the role they play in the local ecosystem and economy of the region. Strengthening of the connectivity between natural habitat areas in rural and urban areas with support of open space corridors. Recognize and plan for the potential threat that climate change might have on the natural and manmade environment. Consider the sustainable utilization of the natural resources in effective way – allow for alternative energy generation (wind/sun/water), harvesting of wild flowers and wildlife in sustainable way, uses to support agri-tourism such as resort developments in conservation areas.	**Strategy 8**: Maintain the alignment of development with bio-regional land use initiatives (protection) and consider sustainable utilization of natural and water resources. **Strategy 9**: Ensure integrated management, strengthening and protection of the natural and cultural visual landscape in the Cederberg. **Strategy 10**: Protection of water resources and water catchment areas in the Cederberg.
THEME 4 **Protection of Cultural and Heritage Resources** Recognize and protect the historical and scenic	**Strategy 9**: Ensure integrated management, strengthening and protection of the natural and cultural visual landscape in the Cederberg. **Strategy 11**: Protect and develop the potential of Cultural and

landscape of the Cederberg and the historical fabric of urban settlements. Acknowledge the importance of heritage resources and manage the impact of development and support the potential that these resources have on the local economy (for example support cultural festivals and open days in rural areas)	Heritage significant features in urban and rural areas.
THEME 5 **Spatially enable Sustainable Settlements** Provide integrated employment opportunities to support sustainable livelihoods. Facilitate sustainable growth of urban areas in accordance with their growth potential. Effective planning of bulk infrastructure to support urban growth. Promote social development, safe communities, and integrated facilities through the sustainable delivery of social facilities, open spaces, recreational opportunities and housing.	**Strategy 12**: Provision of sustainable infrastructure and services and the maintenance thereof. **Strategy 13**: Facilitate the smart growth of Cederberg towns (vibrant activity streets, integration, restructuring, densification, facilitate the provision of business and industrial opportunities, promote clustering and integrated provision of public sport facilities, create liveable and safe neighbourhoods). **Strategy 14**: Facilitate the provision of adequate development areas for public and private residential development.
THEME 6 **Support Safe, Healthy and Sustainable Communities** Promote social development in all areas to create safe and sustainable community life. Support risk management and law enforcement to provide safe living environments.	**Strategy 13**: Facilitate the smart growth of Cederberg towns (vibrant activity streets, integration, restructuring, densification, facilitate the provision of business and industrial opportunities, promote clustering and integrated provision of public sport facilities, create liveable and safe neighbourhoods). **Strategy 15**: Provide for adequate social infrastructure to support communities. **Strategy 16**: Effective management of and reducing natural and man-made disaster risks.

Table 21: Themes and Strategies

CHAPTER 7: Development Proposals: Urban and Settlement

7.1 Ward 1: Elandskloof and Citrusdal Farms and Ward 2: Citrusdal



Ward 1, located south east in the Cederberg region, has a rural character and is home to farms, the Cederberg Wilderness area and Elandskloof.

Elandskloof was the first successful land restitution claim.

Ward 2, the smallest in the Cederberg region, includes the urban area of Citrusdal. This ward is located in the middle of Ward 1.

These wards has a population of 16 698 people representing 25% of the total municipal population and 4119 households. The average household size is 4 persons. ‘

The area is 892km²(Ward 1) and 13km² (Ward 2) in extent with a density of 18 persons/km

There is a Waiting list of 1937 households (12% of ward population or 47% of ward households) (Citrusdal: 1617, Elandskloof: 320).

The town of Citrusdal and the settlements of Elandskloof are located in these wards. Citrusdal is the agricultural service centre and local node whilst Elandskloof is a rural settlement.

	Economic Base	Place Identity	Locational Advantage	Spatial Planning Category
Elandskloof	Residential with agriculture and tourism potential	Informal Rural Settlement	R303 movement network; Cederberg Wilderness Area & Winterhoek Catchment Area	Rural settlement
Citrusdal	Agricultural service centre	Agricultural Service centre	N7 & R303 movement networks, Service and tourist centre	Local node

7.1.1 Elandskloof

Elandskloof is a farm of nearly 2 400ha in extent. This land is located in Cederberg Wilderness Area and the Winterhoek Mountain Catchment with Citrusdal as the nearest town, approximately 20km away. A substantial portion of the farm consists of mountain fynbos and natural field. Access to Elandskloof is obtained by a gravel road, the R303, which links Citrusdal and Ceres.

i. Historic Overview

A mission station was established on Elandskloof during the middle of the 1800's. The church took title of the land and sold it in 1960 when the farm ran into financial trouble. The community settled on the land was forced, due to apartheid legislation, to leave the land. The Elandskloof community was able to return in 1996 as the land was given back to the community.

ii. Town Hierarchy & Economic Base

The economy of Elandskloof is primarily subsistence agricultural. As the Cederberg has a poorly developed economic base, diversification of the farm's economy is necessary to create jobs and to raise income levels.

Elandskloof is a rural settlement.

iii. Spatial Elements

Elandskloof is a temporary settlement "with rudimentary services" (i.e. no waterborne sewerage). The balance of the land on which the settlement is located, comprises of two farms producing citrus and buchu (growing wild) (LRC, 2008)". The Winterhoek Mountains surrounds Elandskloof which means cultivatable land is scare and is only available alongside the Elandskloof River which runs through the "kloof".

iv. Urban Structure

Settlement Pattern and Layout

The informal settlement is a linear shaped settlement with a private gravel road running across the farm to the end of the Kloof. A few formal and mostly informal dwellings are located along this road and roughly arranged in three nodes. Crossing the river plain and previously commercially farmed orchards towards the east, several out posts can be found containing informal dwellings and small gardens.

Density

Densification and infill development is recommended as 320 families eventually have to settle on the land.

Built form

The ruins of the historic houses in Elandskloof represent single storey rectangular dwellings with pitched roofs. The church and community hall are also single storey square buildings with pitched roofs. The mass of these buildings are perfectly rural and ideal for this type of rural settlement.

Functionality

Community facilities i.e. the church, community hall and cemetery is located within walking distance.

Growth potential

Elandskloof's growth is contained in tourism and commercial agriculture.

v. Movement Network

The main, yet primary movement network in Elandskloof is a minor dirt road (14/5CL). This road links up with the R303 (310) outside the Elandskloof boundary.

vi. Services and Infrastructure

Water

The water source (xx River) does not have sufficient volume during the summer.

Water storage capacity of 3Ml is required, whilst connections to stands need upgrading.

Sewerage and Sanitation

There is no sewerage works or reticulation system and pipe capacity in Elandskloof.

Electricity

Electricity is provided by Eskom and both the capacity and reticulation network is sufficient.

vii. Development Potential

This rural settlement's development potential is classified as low. Development is mainly limited to residential development and residents depend on nearby towns for the provision of basic services.

Limited but excellent opportunities for tourism development and conservation exist since the area is separated from the surrounding areas by the Winterhoek Mountains and located in its water catchment area and the Wilderness area.

7.1.2 Citrusdal

Citrusdal is located in a narrow highly fertile valley on the foothills of the Cederberg and Moon Mountains and the banks of the Oliphant's River. Situated approximately 180km north of Cape Town, Citrusdal is accessed by the N7 on route to Namibia, which is running north south along the western side of the town, as does the Oliphant's River. The R303 (R310) connects Citrusdal and Ceres.

Citrusdal is characterised by a scenic landscape (Oliphant's River and pristine mountain ranges) with a tranquil atmosphere of abundance.

i. Historic Overview

It's a thriving farming town that lies at the heart of the citrus industry in this part of the world. Citrusdal came into being, circa 1918, when a village was established at the foot of what is now known as the Piekenierskloof Pass on a farm called Modderfontein.

The old farm dates back to 1725 when it was established by the Dutch East India Company to supply meat to the company in what was a relatively inaccessible valley. All that changed in 1855 when the famous pass builder, Thomas Bain, started work on the 12km Grey's Pass (later renamed Piekenierskloof Pass) with the help of 100 convicts. The cottage that Bain lived in whilst working on this project can still be seen on the farm, along with the remains of the old pass, which is in remarkably good condition.

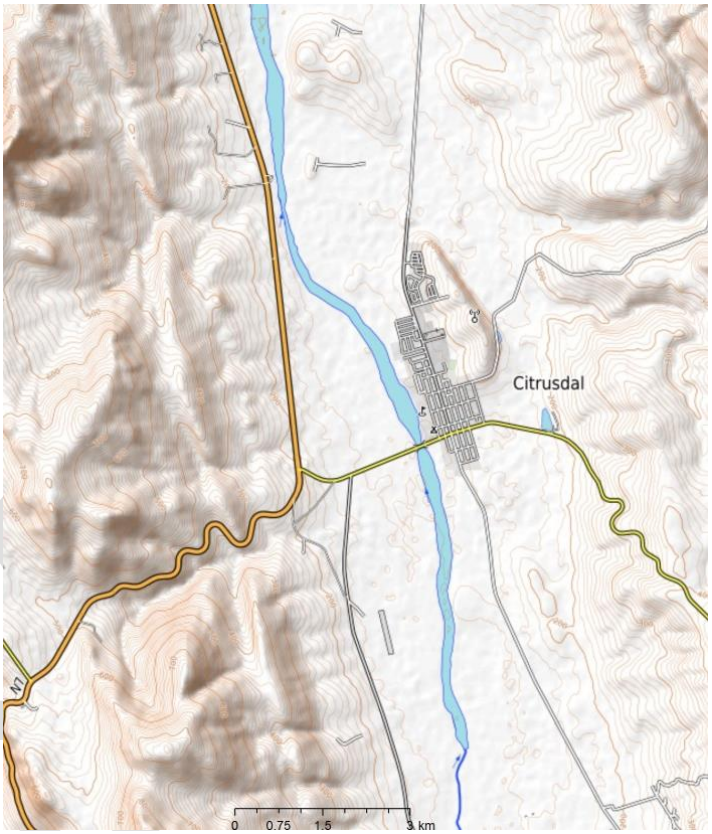
The pass gave impetus to the settlement at Modderfontein, which soon had a post office added to it, and later a shop and trading store by the owner, James McGregor, who bought the farm in 1860. Over time, a doctor, a smithy, a wheelwright and a policeman were all based there, but the fortunes of Modderfontein changed. In 1918, McGregor's only two sons died within six days of each other of the Spanish Flu, leaving only daughters on the farm, and the village of Citrusdal was established by the Dutch Reformed Church nearby.

ii. Town Hierarchy & Economic Base

This town mainly functions as an agricultural service centre. The citrus industry and intensive agricultural practice are the main source of income in the town's hinterland. The local export economy is vulnerable to

fluctuating exchange rates, and the concomitant decline in export value has negative implications for the economic base of the town. The tourism industry offers development potential and with an active tourism committee the town marketed itself excellently over the past few years as a local tourism destination as a result of the warm water sources, farm and river accommodation, 4x4 routes and Epic cycle tour passing through.

iii. Spatial Elements



Citrusdal, like many other towns in the region, is heavily influenced by the topography: located in a valley, dissected by the Oliphant's River and surrounded by mountains. The town is surrounded by high potential agricultural land and limited expansion possibilities. Citrusdal is at a crossing point of the Oliphant's river after the N7 road descends the Piekenierskloof Pass. The bridge across the Oliphant's and the intersection of Voortrekker road and P de Villiers Road are spatially determining infrastructure. The following serves as a summary of the Spatial Elements which have a bearing on Citrusdal:

- Voortrekker Road running north-south and east of the Oliphant's River
- R303 running east-west
- Oliphant's river bordering Citrusdal to the West
- Cederberg (east) and Piketberg (west) Mountain ranges
- N7 located to the West of Citrusdal
- Agricultural land surrounding the town

iv. Urban Structure

Settlement Pattern and Layout

The town has a linear grid pattern along and between the river and the Mountains. The grid consists of long rectangular blocks in the south and change to large irregular blocks accommodating factories and the school in the middle of the settlement. Again it changes to the North and comprises curvilinear grids on eastern side of the main road and inwardly orientated grid blocks as cul-de-sacs prohibit vehicle access onto the river bank.

In the rectangular blocks, houses faces Voortrekker whilst in the North dwellings turn their back on the main route.

The Ceres via the R303 route link to N7 (running east – west – Paul de Villiers road) and Voortrekker Street (running north south) form the activity axis of Citrusdal.

Currently there are 2 economic nodes within Citrusdal of which one has already reached maturity. Said node is located at the Paul de Villiers/Voortrekkers street crossing whereas the other node is located at the crossing of Schalk Patience and Voortrekker Street. Citrusdal primarily consists of 2 residential nodes with one on the south side and the other one on the north side of the town. The abovementioned nodes are linked by a business and industrial node. Given the citrus industry, and the extent of the industrial plots required to develop the appropriate agri-industrial infrastructure, there is simply not enough land left to provide for the entire industry.

Density

The northern residential development node is a medium and high density node, whilst the southern node is a low density node. The business nodes are off mixed density.

Built form

Citrusdal is a relatively young settlement that consists of very few historic buildings. The museum complex is such an area with older buildings which also hosted the information centre at some point.

Most of the dwellings are single story. There are some double story commercial and institutional buildings, but overall with massing blending in with the residential areas. The industrial development's mass and scale is, in relation to any other development type, dominating. As it has been part of the town and the positioning of the buildings was to the back of the industrial erven and or the street boundary covered with bougainvillea, it becomes part of the character of the town.

Functionality

Most of the residential areas are located close to the CBD and within walking distance from work, except for the neighbourhood on the north side of the town. Various community facilities including

churches, schools, a caravan park, and sports ground and golf course are located in the once central area of town. With the expansion in a northern direction, secondary business and amenity nodes in the northern are required.

Growth potential

Citrusdal is likely to continue to growing faster than the other settlements in the municipality and needs to prepare for this. It has to improve and enhance its qualities as a place to live and visit and could take some directives from Robertson which had a similar challenge.

Regional developments such as the upgrading of the N7 (linking Cape Town and Namibia into Africa) will have a big impact on the role, locational advantage and the growth potential of Citrusdal. The projected additional land required to accommodate the future residential growth in Citrusdal over a 20 year period until 2031, as per the Cederberg Human Settlement Plan is 265.1ha.

v. Movement Network

The following Primary movement networks are found in Citrusdal:

- The connection routes include the **R303** (310) toward the east, the **R393** (310) towards the west, the Old Cape route (2176) and (539) towards the south and the north to link up in the centre of Citrusdal.
- The two main activity corridors in Citrusdal that also provide access off the R303 and the R393 are Voortrekker Street that enters from the south and Paul de Villiers Street that enter from the west. The intersections between these two roads from the central node of Citrusdal from where different other roads leads to the surrounding towns and rural areas.
- The commercial activities are located along these two main activity corridors as well as roads parallel to these roads or leading off these roads in the central location.

vi. Services and Infrastructure

Cederberg Municipality provides the following municipal services to Citrusdal, except stated differently:

Water

Citrusdal has insufficient water sources, storage and reticulation capacity. Water is sourced from the Olifants River witch has completely dried up in 2017. It is also sourced from two boreholes witch are under stress

Drinking water storage capacity is 3.3ML which is insufficient and another 3ML reservoir is required to provide for the Citrusdal residents. Industries and institutions (hospitals and four education centrums).

The water reticulation infrastructure requires upgrading as water is still transported in asbestos pipes and the pressure sustaining valve needs replacement.

Sewerage

The sewerage works is in the process of being relocated and hence households on the waiting list are provided for. The upgrade has not taken place since 2015 as Cederberg Municipality has to contribute R15 million rand to ensure implementation proceeds. The sewerage works in use has no capacity left, whist the pipe capacity of this sewerage works is inadequate.

Electricity

There is sufficient capacity (1Mva, using 0.5MvA) and reticulation capacity to accommodate the projected number of households including the households on the waiting list.

vii. Development Potential

The town offers development potential for the expansion of residential, commercial and some industrial functions. The development of agri-industries and processing is strongly supported to enhance Citrusdal as an agricultural service centre. The tourism potential to enhance the town as a tourism hotspot, especially for visitors passing through the town, should be unlocked.

The table below contains specific development proposals for Citrusdal. It has to be read in conjunction with the Development Zone plans for Citrusdal

Citrusdal Local Spatial Development Proposals
General
• Allow for agri-industry and processing facilities south of the Citrusdal along Voortrekker Street (DR2176/1).
Residential
• Land earmarked for subsidised housing on northern boundary of town, located west of Voortrekker Street (MR539/26) in Zone A. • Expansion opportunities north east of the proposed subsidised housing area in Zone B. • Infill opportunities for GAP housing on the area west of Voortrekker Street (MR539/27) and north of Fuchia Street in Zone A. • Infill opportunities for low density residential development on the eastern boundary of the town towards the urban edge in Zone F. • Provide low density residential development in the proposed mixed use precinct in Zone H, south of Paul de Villiers Street (R303). • Infill opportunities on existing large and vacant residential erven with higher density residential infill development closer to the Central Business District (CBD) including flats, group housing etc.
Commercial
• Development of a SBD in Zone A, B, D, H and F. • Strengthening of commercial development within the CBD along Voortrekker and Paul De Villiers Street (Zone E and F).
Industrial
• Expansion of industrial area in Zone D to the east. • Expansion of industrial area on the southern boundary of Citrusdal in Zone G.
Mixed Uses
• Develop mixed use precinct (Light/Service Industries, Commercial and Wholesale uses) along the southern side of Paul De Villiers Street (R303).
Open Space
• Expansion of the cemetery in Zone D to allow for 700 graves giving a lifespan of 5 – 7 yeas.
Sport and Recreation
• Maintain existing sport fields.

Heritage
• Protection of buildings with heritage value i.e. at library and some individual dwellings.
Tourism
• Support resort development next to the Oliphant's River, south of the urban edge. • Expand agri-tourism potential in surrounding rural areas and along the Oliphant's River on the western boundary of the town.
Transport
• Strengthening the surface of main roads (Voortrekker and Paul De Villiers Street) to support heavy vehicle traffic that will not only limit the degradation of road conditions but also limit speeding.
Restructuring
• Beautification of main access points to Citrusdal to protect and maintain the esthetical value of the town and surrounding scenic landscapes (Robertson is an example)
Land Reform
• Existing land reform initiative on the northern periphery (north east of Zone A) of Citrusdal to facilitate small farmers and community gardens on municipal commonage.

Table 22: Citrusdal Development proposals

viii. Development Zones and Proposals for Citrusdal

The table in this section describe development zones identified in Citrusdal and lists development options for each zone. The table has to be read in conjunction with Development Zone plans for Citrusdal.

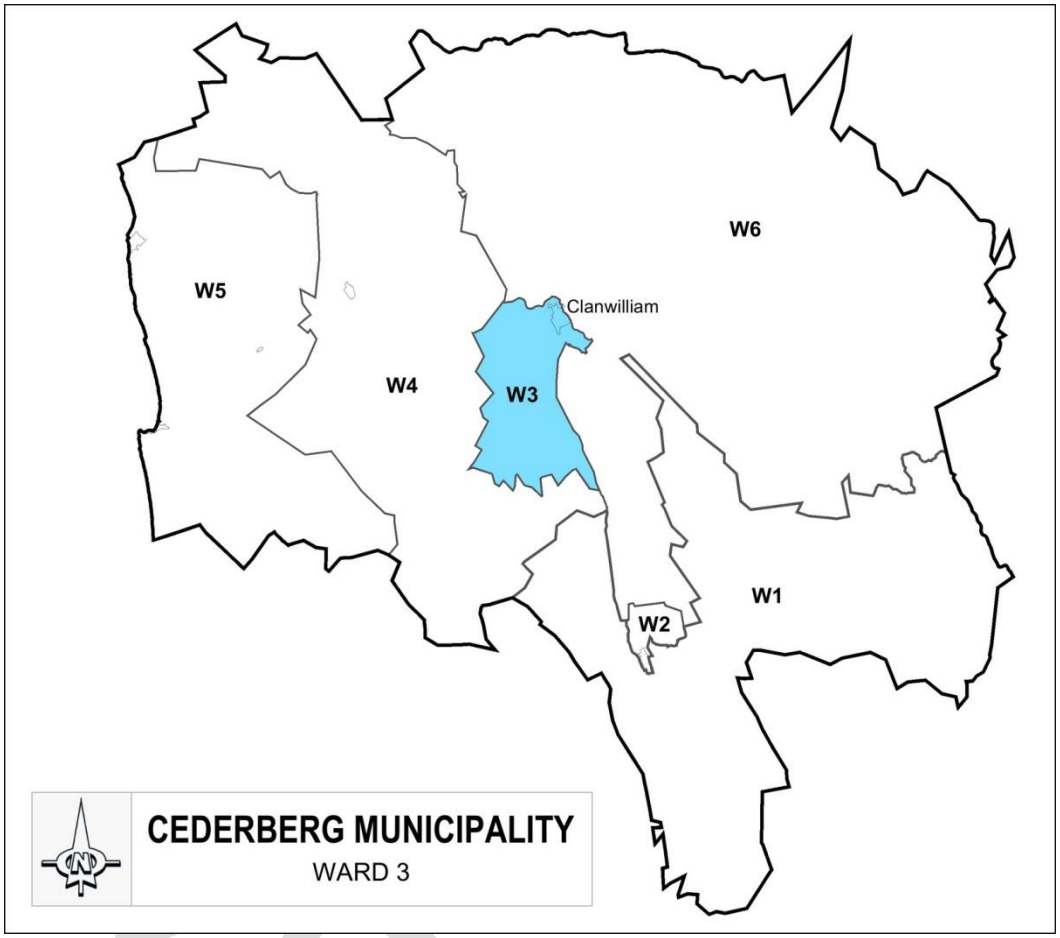
CITRUSDAL **LAND USE** **ZONES**		**Low Density Residential**	**Medium Density**	**High Density Residential**	**Secondary Educational**	**Institutional**	**Professional Services**	**Business**	**Secondary Business**	**Churches**	**Institution**	**Guest houses**	**Authority**	**Sport/Recreational**	**Industrial / Service Trade Industries**
A	Zone A is a high density residential area with emergency housing, vacant erven for subsidized housing, a small commercial node and supporting social services. This zone provides opportunities for GAP housing along the southern boundary.	X	X	X 1	X	X	X 2	X	X	X	X	X	X	X	
B	Zone B is a medium and high density residential area with supporting social infrastructure and containing a secondary business node.	X	X	X 1	*X	X	X 2	X	X	X	X	X	X	X	

C	Zone C is a medium density residential area with supporting social infrastructure	X	X	X 1	X	X	X 2	X	X	X	X	X	X	X	
D	Zone D is an Industrial precinct with some commercial uses, social infrastructure i.e. education facilities and cemeteries. Zone D allows for limited industrial and cemetery expansion.	X	X	X 1	X	X	X 2	X	X	X	X	X	X	X	X
E	Zone E is a mixed use precinct containing the CBD, recreation, residential and resort uses.	X	X	X 1	X	X	X 2	X	X	X	X	X	X	X	
F	Zone F is a low density residential area containing part of the CBD and supporting social infrastructure. This zone provides opportunity for residential expansions towards the east and business opportunities along Paul de Villiers Street (R303)	X	X	X 1	X	X	X 2	X	X	X	X	X	X	X	
G	Zone G is a light industrial area with recreation and business areas to provide expansion for light industrial development.			X	X	X	X	X	X	X	X	X	X	X	X
H	Zone H is a low density residential area that provides opportunities for residential infill and mixed use including commercial, institutional and light industrial along Paul de Villiers Street (R303).	X	X	X 1	X	X	X 2	X	X	X	X	X	X	X	X
(1) Flats along activity streets and at nodes **(2) At existing nodes**		**Business Uses** i.e. shop, supermarket and service station **Institutional Uses** i.e. Schools, places of instruction **Professional Services** i.e. Office blocks **Secondary Business Uses** i.e. Café, house shops, small offices and home occupation **Secondary Educational Uses** i.e. Crèches/day care													

Table 23: Citrusdal Development Zones

7.2 Ward 3: Clanwilliam

Ward 3 is centrally situated within the Cederberg region. The ward is smaller than the other wards and mainly includes the urban area of Clanwilliam on the northern boundary of the ward with surrounding farms to the southern side.



The ward has a population of 7 523 people representing 15% of the total municipal population and 2295 households. The average household size is 3.3 persons. ‘

The area is 297km in extent with a density of 25 persons/km.

There is a Waiting list of 1398 households (19% of ward population or 61% of ward households) \

Clanwilliam is the only settlement in the ward and is the regional retail and agricultural service centre and a sub-regional node.

	Economic Base	Place Identity	Locational Advantage	Spatial Planning Category
Clanwilliam	Regional retail and agricultural service centre	Administrative centre (Gateway to municipality)	Tourism, N7 transport and service centre	Sub-regional node

Clanwilliam is located approximately 230km north of Cape Town in the Oliphant’s River valley between the western slopes of the Cederberg Mountains and the Jan Dissel River and on the eastern bank of the Oliphant’s River, where the Clanwilliam dam is located. Clanwilliam is the main town of

the Cederberg Municipal area and is centrally located to the rest of the towns within the Cederberg jurisdiction area. Graafwater is the nearest town with a distance of 35km. Access to Clanwilliam is obtained via the R364 (Main Road 55) which is derived from the N7 which ran parallel to the Oliphant's River and the Clanwilliam dam.

Clanwilliam is considered as the gateway to the Cederberg region and the town is especially renowned for its historical buildings, cultural history, rooibos tea and leather shoes ("velskoene"). The Clanwilliam dam is also a popular attraction which offers opportunity to exercise water sports

i. Historic Overview

Clanwilliam, formerly named Jan Disselvlei after the botanist Jan Dissel,

The district originally formed part of the district of Stellenbosch but in 1808 the Earl of Caledon annexed that part of the district lying north of the Berg River to the new district of Tulbagh, at the same time declaring it a sub-drostdy, with Daniel Johannes van Ryneveld as assistant magistrate. The farm Jan Disselsvlei was bought to serve as the headquarters of the assistant magistrate. On 21 Jan. 1814 Sir John Cradock (1811-14), renamed the sub-magistracy after his father-in-law, the Earl of Clanwilliam. In 1820 efforts were made to settle four groups of Irish settlers under William Parker along the Jan Dissels River, but with little success. In 1822 the magistracy of Tulbagh was moved to Worcester, but on 1 Jan. 1837 Clanwilliam was separated from Worcester and proclaimed a district. In 1901 the village of Clanwilliam became a municipality, the first mayor being Charles Fryer, an Irish descendant of the 1820 Settlers.

In 1930 District Surgeon and botanist Dr Pieter Le Fras Nortier, began conducting experiments concerning the cultivation of the rooibos plant. Dr Nortier also saw the vast commercial potential the tea held for the region and cultivated the first plants at Clanwilliam on his farm Eastside and on the farm Klein Kliphuis. As irrigation development progressed along the Oliphant's River lower down, the water-supply obtained from the Bulshoek Dam, 24 km below Clanwilliam, became inadequate, and the Clanwilliam Dam was built by the Department of Water Affairs during 1932-35.

ii. Town Hierarchy & Economic Base

Clanwilliam mainly functions as the main administrative town in the Cederberg region and is also an agricultural and commercial service centre. Although the economy is mainly based on agriculture, tourism is an ever growing component of the local economy as the Clanwilliam dam gets well used for water skiing and fishing. Agri processing and agri-industries features strongly as two export products namely Rooibos tea and leather shoes are produced and processed in Clanwilliam. The local economy is further enhanced by Clanwilliam's easy access to the N7 as a major national route between Cape Town and the Northern Cape and Namibia. Some of the historic buildings and cultural activities shape the character of the town and enhance it as a tourism destination.

iii. Spatial Elements

The eastern half of the district is rugged and mountainous. The Cedarberg, considered by many mountaineers to be South Africa's most attractive mountain range, traverses the district from north to south. The Sneeu-mountains' highest peak (2,063 metres) in the Cedarberg, is also the highest point in the district. The Cedarberg may be crossed by car by means of the Buffelshoek-, Uitkyk- and Pakhuis passes. The entire mountain area is virtually a forest reserve. The western half of the district, adjoining the Atlantic coastline, consists mostly of undulating 'sandveld', hills and rocky outcrops. In the late winter and early spring, valleys and lowlands of the district present a magnificent spectacle of wild flowers. The Biedouw valley especially is noted for this. On account of high precipitation in the mountains, the district is well watered by many perennial streams. The Oliphant's River is the principal stream, dammed for irrigation purposes at Clanwilliam and Bulshoek. The Doring River, principal tributary of the Oliphant's, also flows through the district and forms the boundary between the districts of Clanwilliam and Calvinia, and Clanwilliam and Vanrhynsdorp, along part of its course. Intensive farming is practised below the Bulshoek Dam over a relatively small area before the northern boundary of the district is reached. The area is famous for its rooibos tea and fruits, mainly oranges.

The following serves as a summary of the Spatial Elements which have a bearing on Clanwilliam:

- The Cederberg Mountain range and the Wilderness Reserve (conservational uses associated with the mountain range)

- The Oliphant's River and its' tributary streams
- Clanwilliam dam
- Ramskop Nature Reserve
- Historic buildings of local and provincial significance
- Dominant agricultural character, especially relating to rooibos
- The N7 National Road which connects Cape Town to Namibia

iv. Urban Structure

Settlement Pattern and Layout

The town is structured along Main Road, the primary activity axis that forked in a southern direction to serve the town (from the reformatory to the T-junction with the Graafwater –Wuppertal road) and to connect to the highway, the Old Cape Road towards Citrusdal. The Graafwater – Wuppertal road, running east- west, provides access to the erven along the banks of the Jan Dissels River.
The existing N7 national route grants access to Clanwilliam and from there access can be gained to Graafwater and Lamberts Bay via the R364.
Clanwilliam has been established on a grid layout plan with some deviation particularly where heritage resources had to be protected yet used for the purposes these buildings were built for.
Clanwilliam primarily consists of two residential nodes with one on the south side and another on the north side of the town. These nodes are linked by a business and industrial node mixed with residential uses.

Density

Higher density developments are located the north whilst the southern node has a low residential character. Along the water bodies (i.e. Jan Dissels and Dam) and Ramskop low density residential development is located.

Built form

Clanwilliam consists of a variety of cultural treasures in the form of historic buildings with architectural examples that stretch over different periods.

Most of the dwellings are single story. There are some double story commercial and institutional buildings, but overall with massing blending in with the residential areas.

The industrial development's mass and scale is large, yet as it has been part of the town it become part of the character of the town.

Functionality

Most of the residential areas are located close to the CBD except for the informal settlement on the south side of the town that is separated from the CBD with a distance of 1.5 kilometres, 30 minutes walking distance. Various community facilities including the municipality, sport grounds and the magistrate office is located in the central area.
The southern side is also characterized by informal settlement development.

Growth potential

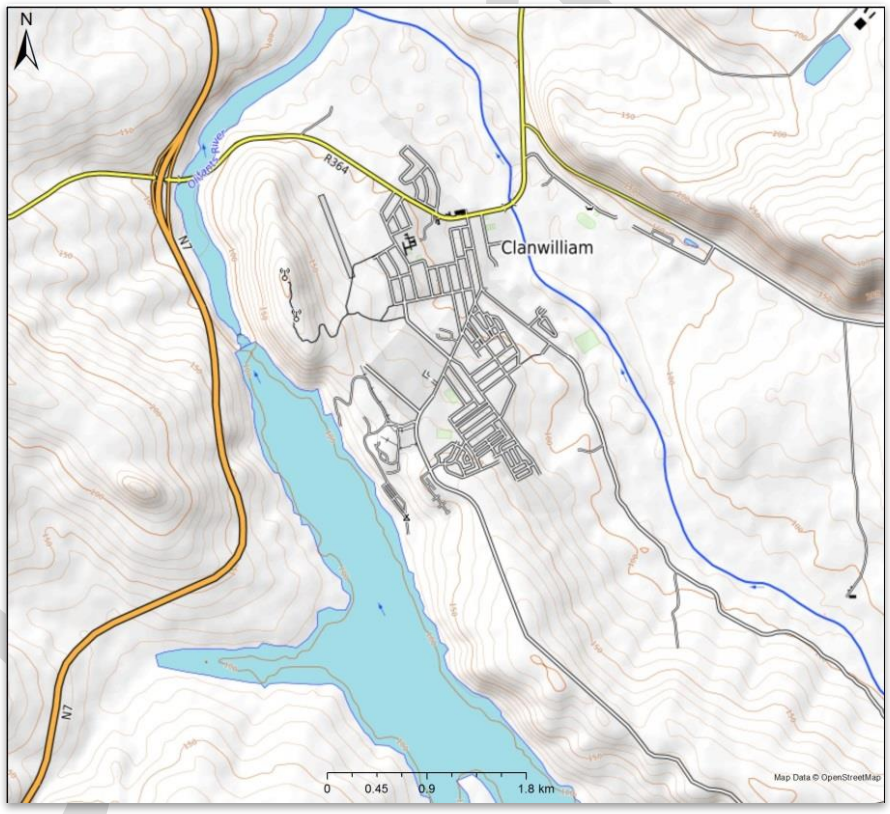
Clanwilliam is identified as the main town within the Cederberg region. Regional developments such as the upgrading of the N7 (linking Cape Town and Namibia into Africa) and the enlargement of the Clanwilliam dam will have a big impact on the role, locational advantage and the growth potential of Clanwilliam. The projected additional land required to accommodate the future growth in Clanwilliam until 2031, as per the Cederberg Human Settlement Plan is 176ha.

v. Movement Network

The following Primary movement networks are found in Clanwilliam:

- **N7** as the **main movement network** along the western boundary of town. The N7 provide access to many towns located near it.

- The connection routes include the **R364** (542) towards the west, **Old Cape road** (2183) towards the south, **Graafwater road** (55) towards the east to link up in the centre of the town.



- The two main activity corridors in Clanwilliam are Old Cape road that enters from the south and Graafwater road that enter from the north. The intersections between these three roads from the central node of Clanwilliam from where different other roads leads to the surrounding towns and rural areas.

- The commercial activities are located along these two main activity corridors as well as roads parallel to these roads or leading off these roads in the central location.

vi. Services and Infrastructure

The Cederberg Municipality currently provide the following municipal services to Clanwilliam.

Water

The bulk water supply source, the Clanwilliam dam, has adequate capacity for Clanwilliam. Designs for a new pump station and water purification plant are completed. The storage capacity requires upgrading and an additional2.5ML reservoir is planned. The reticulation capacity needs to be

upgraded. Phase 1 of an improvement plan that involves pressure management of the network and pipes has been implemented. The pipe to the purification works needs replacement.

Sewerage and Sanitation

The sewerage works require an upgrade as it does not have capacity left. Thus the pump station and feedings lines require upgrading too.

Electricity

The electricity supply to Clanwilliam is insufficient in Clanwilliam. Since 2006, there is an existing under supply of electricity in Clanwilliam as ESKOM has no spare capacity and Cederberg Municipality have to fund the supply capacity. An amount of R15 million is required to do so.
The electrical reticulation capacity is sufficient.

vii. Development Potential

Clanwilliam, as the sub-regional node of the Cederberg jurisdiction area, offers high development potential. Residential, commercial, industrial and recreational development opportunities exist. The rich culture and architectural heritage of the Clanwilliam provide opportunities to promote tourism. An alternative road is also suggested to alleviate heavy traffic through the main roads of the town.

The rising of the Clanwilliam dam will enhance the water sources of the area and citrus and tropical fruit cultivation will be growing according to the irrigation quotas allocated.

Clanwilliam Local Spatial Development Proposals
Residential
Provide for low density residential opportunities in the mixed use precinct in Zone B (west of low density residential area in Zone C).
Obtain old school site along Long Street in Zone C for infill residential development and the land from the Provincial Department of Public Works for mixed uses including residential, commercial etc.
Develop GAP housing east of the Old Cape Route (DR2183/26) in Zone J.
Formalisation of the Informal Settlement Area in Zone J (old and new Khayelitsha).
Identification and uptake of land for subsidised housing shortages in Zone J (part of the existing golf course and areas east and south of the golf course).
Infill development on existing large and vacant residential erven with higher density residential infill development closer to the Central Business District (CBD) including flats, group housing etc.
Commercial
Development of a Secondary Business District (SBD) within the mixed use precinct proposed in Zone B.
Develop a SBD within high density residential area in Zone I.
Support institutional and informal commercial trading in Zone G.
Strengthening of commercial development within the CBD along an activity axis (Zone D, E, H, G & F).
Industrial
Expand industrial area north of the Rooibos plantations in Zone F.
Expand the industrial area southwest of the proposed alternative road in Zone K (road linking Old Cape Road

and Graafwater Way). Industrial expansion along the southern boundary of Zone C.
Mixed Uses
Establish mixed use precinct in Zone B (Light/Service Industries, Commercial and Wholesale uses). Establish mixed uses in Zone L (Light/Service Industries, Commercial and Wholesale uses).
Open Space
Expansion of cemetery in Zone L to the south. Provision of new sustainable long term cemetery east of the Old Cape Road in Zone J.
Sport and Recreation
Expand the resort next to the Clanwilliam dam in Zone K. Provision of sport facilities (soccer fields) within the high density residential areas in Zone J.
Heritage
Protection of Main, Park and Love Street with its surrounding area as a heritage resource in Zones E and H.
Tourism
Investigate and encourage Clanwilliam dam for further resort development to the south of Zone K, outside the urban edge on the western bank of the dam. Seek private and public partnerships for the upgrading of Ramskop as a tourism destination in Zone K. Maintain and enhance tourism potential to attract motorists/tourists passing through the town. Market the area as a hotspot to view the scenic landscapes in and surrounding Clanwilliam (historical buildings, wildflowers etc.).
Transport
Develop an alternative link road between Graafwater Way (R364) and the industrial areas to alleviate heavy traffic through the historic main roads of the town (Zones B, F & K). Provide a road link from the proposed alternative road to Hospital Road in Zone B.
Restructuring
Beautification of main access points (Graafwater Way and Old Cape Road) to Clanwilliam to protect and maintain the esthetical value of the town and surrounding scenic landscapes.
Land Reform
Area identified south of Zone J to facilitate small farming and community gardens on municipal commonage.

Table 24: Clanwilliam Development Proposals

viii. Development Zones and Proposals for Clanwilliam

The table below contains specific development proposals for Clanwilliam. It has to be read in conjunction with the Development Zone plans for Clanwilliam

CLANWILLIAM LAND USE ZONES		Low Density Residential	Medium Density Residential	High Density Residential	Secondary Educational	Institutional	Professional Services	Business	Secondary Business	Churches	Institution	Guest houses	Authority	Sport/Recreational Facilities	Industrial / Service Trade Industries
A	Zone A is a low density residential area with limited supporting commercial uses along the Graafwater Way.	X	X	X 1	X	X	X	X 2	X	X	X	X	X	X	
B	Zone B provides opportunities for urban expansion including recreational uses, residential and mixed uses. Proposed link road between Graafwater Way and Old Cape Road and proposed link with Hospital Road located within zone B.	X	X	X 1	X	X	X	X 2	X	X	X	X	X	X	X
C	Zone C is a low density residential area with relevant supporting social services. Zone allows for limited commercial uses along Graafwater way interface.	X	X	X 1	X	X	X	X 2	X	X	X	X	X	X	
D	Zone D includes part of the CBD, related commercial uses and institutional uses with limited residential uses.	X	X	X 1	X	X	X	X 2	X	X	X	X	X	X	X 2
E	Zone E includes part of the CBD with large residential erven along the Jan Dissels River and Park Street. Park Street is a tourism and heritage activity street.	X	X	X 1	X	X	X	X 2	X	X	X	X	X	X	
F	Zone F is an industrial precinct with commercial uses along Old Cape Road. Zone F is home to the Hospital and the adjacent vacant land for institutional expansion.			X 1	X	X	X	X 2	X	X	X	X	X	X	X 2
G	Zone G is a medium and high density residential area with supporting institutional functions and opportunities for informal/formal commercial trading along Old Cape Road.	X	X	X 1	X	X	X	X 2	X	X	X	X	X	X	
H	Zone H is a historic high density residential area, identified as a heritage precinct and has potential for tourism development. Allow for commercial uses along interface with Old Cape Road.	X	X	X 1	X	X	X	X 2	X	X	X	X	X	X	
I	Zone I is a high density residential area and relevant supporting social services and a small secondary business node	X	X	X 1	X	X	X	X 2	X	X	X	X	X	X	
J	Zone J is an area proposed for infill integrated residential development and supporting institutional and commercial uses. Zone J is home to the informal settlement of Khayelitsha. Infill medium density residential expansion is proposed along the Old Cape Road with cemetery site on the eastern edge of the Zone.	X	X	X 1	X	X	X	X 2	X	X	X	X	X	X	X

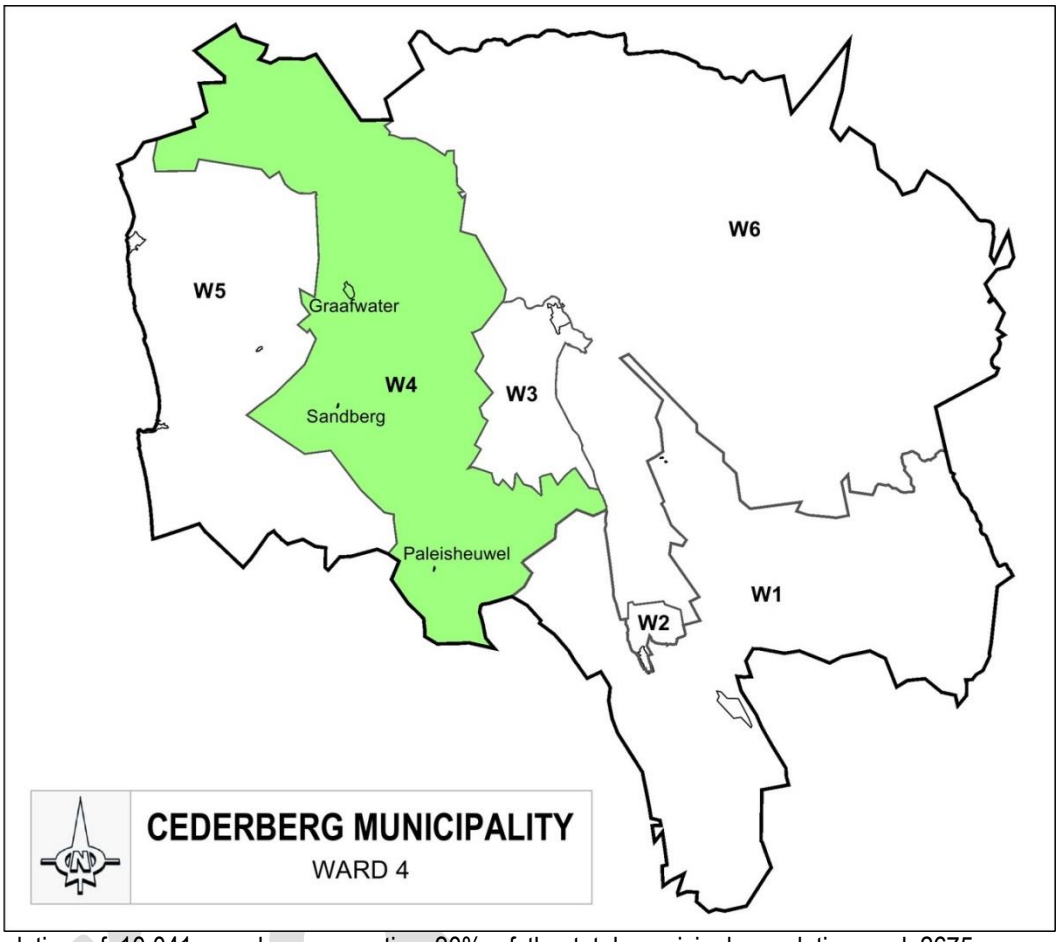
K	Zone K is a low density residential area along the Clanwilliam dam. The Ramskop conservation area is also located in this zone. This zone allows for expansion of resort and residential opportunities along the dam. Resort and tourism development is also proposed to the south of the urban edge along the Oliphant's River.	X	X	X 1	X	X	X	X 2	X	X	X	X	X	X	X 2
L	Zone L is next to the Jan Dissels River consisting of recreational uses and a correctional services facility (juvenile detention centre) and a cemetery site. Allow for expansion of the cemetery site.				X	X	X	X 2	X	X	X		X	X	X
(1) Flats along activity streets and at nodes **(2) At existing nodes**		**Business Uses** i.e. shop, supermarket and service station **Institutional Uses** i.e. Schools, places of instruction **Professional Services** i.e. Office blocks **Secondary Business Uses** i.e. Café, house shops, small offices and home occupation **Secondary Educational Uses** i.e. Crèches/day care													

Table 25: Clanwilliam Development Zones

7.3 Ward 4: Graafwater and Sandveld

Ward 4 is, as Ward 1, overwhelming rural. Ward 4 includes the Sandveld and the town of Graafwater and two rural settlements or sidings: Paleisheuwel and Sandberg.

The main east west movement network (R364 and R365) of the region passes through this ward



The ward has a population of 10 041 people representing 20% of the total municipal population and 2675 households. The average household size is 4 persons. ‘

The area is 2 134km in extent with a density of 5 persons/km

There is a Waiting list of 702 households (7% of ward population or 26% of ward households) \

There are two settlements in the ward, Graafwater and Paleisheuwel, which are both rural settlement.

	Economic Base	Place Identity	Locational Advantage	Spatial Planning Category
Graafwater	Agricultural service centre	Residential	Railway connection	Rural settlement
Paleisheuwel	Residential	Small hamlet in rural areas	Railway connection	Rural settlement
Sandberg	Residential	Small hamlet in rural areas	Railway connection	Rural settlement

7.3.1 Graafwater

The town of Graafwater is situated between Clanwilliam (34km) and Lamberts Bay (30.6km) with the R364 (Main Road 55) extending through the town. The main function of this town is to deliver basic services to the surrounding rural residents and provide support for their agricultural activities since agriculture forms the main economic base of the town.

i. Historic Overview

This Sanveld town got is name from the Afrikaans term for "digging for water " referring to the Afrikaans farming culture found in South Africa at the time of establishment. After the railway junction between Cape Town and Bitterfontein was built in 1910, the town Graafwater was established. The local Dutch Reformed Church of Leipoldtville developed the town further. The Graafwater Dutch Reformed church later formed its own congregation in 1957.

ii. Town Hierarchy & Economic Base

Graafwater mainly functions as an agricultural service centre as most of the people living in this town are seasonal workers from surrounding farms. Rooibos tea, potatoes and sheep are the most common but important agricultural produce of the area.

iii. Spatial Elements

Graafwater is a small town which functions as an agricultural service centre. The town is structured around the intersection of a railway line running north-south and road R364 which runs east-west. The topography is relatively flat. The town is completely surrounded by agricultural land. The following serves as a summary of the Spatial Elements which have a bearing on Graafwater:

- Main road (R364) which runs through the centre of the town
- The railway line which runs through the town
- Van Der Stel road which runs parallel with the railway line
- The agricultural land which surrounds Graafwater
- The Peddies River to the north of the town and the Jakkalsvlei River to the south of the town

iv. Urban Structure

Settlement Pattern and Layout

Graafwater is relatively young and started in 1910 at the intersection of the new rail line to Bitterfontein and the Lamberts Bay road. The silos, accessed by a rail siding, formed the focus of the town and most of the public, commercial and historic buildings are located along this route. The town was developed according to a grid layout plan which resulted in rectangular blocks of which some were subdivided into smaller plots. There is considerable vacant land of which some have bulk services running over it. South of the R364 is a lower income area on a curvilinear grid and plots of ±300m2 which was developed in 1970s-1980s.

The main route, known as R364, which links Clanwilliam with Lamberts Bay runs through Graafwater and divides the town into two parts. This route provides the main access to Graafwater. An activity axis is present in Van der Stel Street with a concentration of businesses, schools and municipal offices along the street. The town also consists of an activity street along Stasie Street containing various businesses.

Density

The precinct south of the R364 is a high density residential area, whilst northern precinct in Graafwater has a low density residential character.

Built form

Graafwater is a mixture of modern (50's) and historic buildings. Most of the dwellings are single story. The double story buildings are the exception and the school hostile is one such an example.
Along the railway line and at the siding platform, larger industrial buildings are located with a different mass and scale. These building in relation to any other development types, are dominating. As these building have been part of the town it forms part of the character of the town.

Functionality

The road and rail way divide the town into four sections. However most of the precincts are within walking distance of commercial and institutional amenities and the CBD. Various community facilities including the school, church and the sport grounds are located on the southern and northern side of the R364.

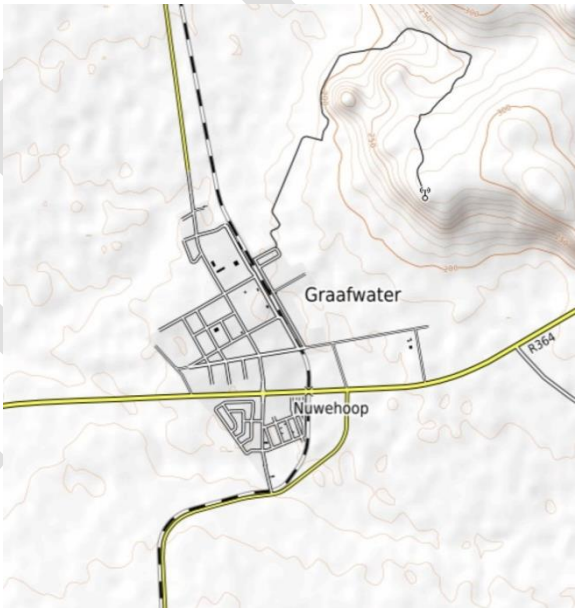
Growth potential

The projected additional land required to accommodate the future growth in Graafwater until 2031 as per the Cederberg Human Settlement Plan is 130ha.

v. Movement Network

The following Primary movement networks are found in Graafwater:

- The **main movement network** is the R364 (543) that runs through Graafwater from Lamberts Bay(west) to Clanwilliam (east)
- Graafwater is also connected with two divisional roads from the north (2193) and the south (2180) that links up with the main movement network.
- The two main activity corridors in Graafwater are Stasie Street that enters from the east and Ceder Street that enter from the north. The intersections between these two roads from the central node of Graafwater from where different other roads leads to the surrounding towns and rural areas.
- The commercial activities are located along these two main activity corridors as well as roads parallel to these roads or leading off these roads in the central location.
- There is a major railway that runs past the eastern boundary of Graafwater.



VI. Services and Infrastructure

The Cederberg Municipality currently provide the following municipal services to Graafwater.

Water

Bulk water supply is adequate in Graafwater. The bulk water storage capacity requires upgrading and 1ML reservoir will be built. The water reticulation capacity is sufficient in Graafwater.

Sewerage and Sanitation

The oxidation ponds and reticulation system require capacity upgrading

Electricity

The electricity supply of 0.75MvA is insufficient and will be upgraded to 1MvA. This will take place whilst Phase II of the subsidized housing project is implemented as per municipal housing pipeline.

vi. Development Potential

The location of this settlement in the rural areas of Ward 4 limits development potential mainly to residential, tourism and agriculture. Expansion and infill development opportunities for residential uses exist within the town. Tourism opportunities along main traffic routes passing through the town should be supported to attract tourists.

Graafwater Local Spatial Development Proposals
Residential
• Proposed residential infill development on the northern periphery of Graafwater in Zone A, east of the Van der Stel Street (DR2193). • Infill development in Zone A is also proposed on Erf 37, north of Erasmus van Zyl Street. • Residential infill opportunities are proposed on the southern boundary of Zone A and B, north of the R364 (TR55/1/30) • Infill opportunities on existing large and vacant residential erven with higher density residential infill development closer to the Central Business District (CBD) including flats, group housing etc. • Proposed infill opportunities in Zone C.
Commercial
• Support a SBD (including house shops and informal markets) along Cedar Road, an activity street, in the southern portion of the town in Zone C. • Strengthening of commercial development within the CBD along an activity axis (Zone A and B). • Support a SBD in Zone D along the identified activity street.
Industrial
• Expansion of the industrial development on a portion of Erf 37, west of Van der Stel Street in Zone A. • Expansion potential on the eastern boundary in Zone B.
Mixed Uses
• Potential for a mixed use precinct along the activity street in Zone B with light/service industries, commercial and wholesale uses.
Open Space
• Expansion of the existing cemetery west of Van der Stel Street in Zone A.
Sport and Recreation
• Upgrade and maintain existing two sport facilities.
Heritage
• Protection of Lamberts Bay Road with its surrounding area as a heritage resource in Zone A.
Tourism
• Development of a tourism node at the southern boundary of Zone A that includes farm stall related uses along the R364 (TR55/1/30) to attract tourists travelling between Clanwilliam & Lamberts Bay.
Transport
• Formalise pedestrian route from Zone D to Zone C along the southern side of the R364 (Clanwilliam – Lamberts Bay Road link). • The part of the R364 passing through Graafwater should be classified as a “sub-urban environment” according to the RDE and should include pedestrian crosses for easy pedestrian movement between the northern and southern parts of Graafwater.

• Potential paving of the intersection at Van der Stel Street and Cedar Road should be considered to slow down traffic on the R364.
Restructuring
• Beautification of main access points to Graafwater to enhance the town as a tourist attraction.
Land Reform
• Land identified south of the R364 and west of Zone C to facilitate small farming and community gardens on municipal commonage
Environment
• Limit urban development & intense agriculture within 32 meter of Peddies and Jakkals River banks.

Table 26: Graafwater Development Proposals

vii. Development Zones and Proposals for Graafwater

The table below contains specific development proposals for Graafwater. It has to be read in conjunction with the Development Zone plans for Graafwater

GRAAFWATER **LAND USE** / **ZONES**		**Low Density Residential**	**Medium Density Residential**	**High Density Residential**	**Secondary Educational**	**Institutional**	**Professional Services**	**Business**	**Secondary Business**	**Churches**	**Institution**	**Guest houses**	**Authority**	**Sport/Recreational Facilities**	**Industrial / Service Trade Industries**
A	Graafwater North, a mixed use area, mixed density residential areas, the CBD, supporting social services and light industrial uses. Zone A provides infill opportunities for residential and industrial development.	X	X	X 1	X	X	X	X 2	X	X	X	X	X	X	X
B	Zone B is an Industrial precinct to the east of the railway line with a small residential component. The area allows for industrial expansion, mixed uses in the core of Zone B and medium density residential uses in southern section.	X	X	X 1	X	X	X	X 2	X	X	X	X	X	X	X
C	Zone C is a medium to high density residential area with supporting social services and opportunities for limited infill residential development.	X	X	X 1	X	X	X 2	X	X	X	X	X	X	X	
D	Zone D is a high density residential area with supporting social services and a secondary business node.	X	X	X 1	X	X	X	X 2	X	X	X	X	X	X	
(1) Flats along activity streets and at nodes **(2) At existing nodes**		**Business Uses** i.e. shop, supermarket and service station **Institutional Uses** i.e. Schools, places of instruction **Professional Services** i.e. Office blocks **Secondary Business Uses** i.e. Café, house shops, small offices and home occupation **Secondary Educational Uses** i.e. Crèches/day care													

Table 27: Graafwater Development Zones

7.3.2 Paleisheuwel

Paleisheuwel is a rural hamlet at a railway siding along the railway line to Bitterfontein. Access to Paleisheuwel is obtained from the R365 (Main Road 538) expanding from Piketberg to Leipoldtville. The settlement hosts residents working on surrounding farms.

i. Historic Overview

Paleisheuwel is a railway siding with some dwellings.

ii. Town Hierarchy & Economic Base

Paleisheuwel's economic base depends on the surrounding intensive agricultural activities. The railway services were downsized and the siding is no longer in operation.

iii. Spatial Elements

The railway and the intensive agricultural uses are the dominant spatial elements in Paleisheuwel. The R365 passes the hamlet towards the west with the Bergvallei River running parallel to it.

iv. Urban Structure

Settlement Pattern and Layout

The village has a linear form (along the railway line) with very few houses and a farm yard as part of the village.

Density

Paleisheuwel is a low density settlement since the dwellings are distributed away from each other. There is some vacant land is available in-between.

Built form

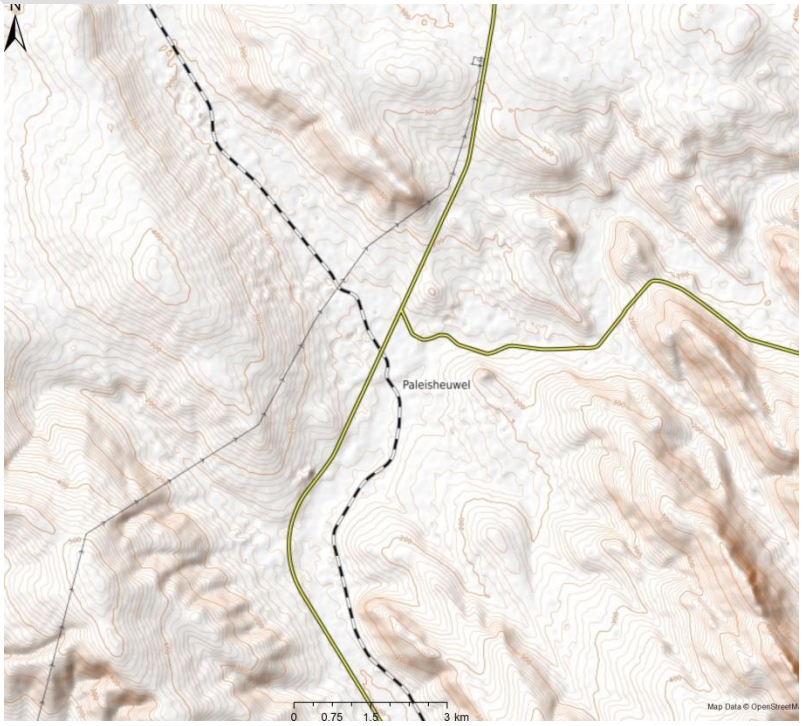
All dwellings are single story and very few have heritage value.

Functionality

All dwellings are in walking distance from the shop. All other services are accessed in Citrusdal or Piketberg.

Growth potential

The growth potential of Paleisheuwel is low.



v. Movement Network

The main access road Paleisheuwel is the **R365** (538), running next to the eastern boundary of the village. A minor dirt road connects Paleisheuwel and the R365. There is a major railway that runs past the western side of Paleisheuwel

Services and Infrastructure

The Cederberg Municipality provides limited municipal services to Paleisheuwel.

Water

The water source and storage capacity in Paleisheuwel is sufficient, whilst the reticulation capacity requires upgrading.

Sewerage and Sanitation

Paleisheuwel does not have a sewerage management system and conservancy tanks are still used. The municipality pumps out the conservancy tanks when required. These tanks require maintenance.

Electricity

Eskom provides electricity in Paleisheuwel. There is sufficient electrical capacity and reticulation.

vi. Development Potential

Development potential in this rural settlement is limited to residential functions. The isolation of the settlement limits higher development potential. The need for residential functions will remain the highest due to season workers looking for accommodation either in the hamlet or nearby and even to settle close to the seasonal work.

7.3.3 Sandberg

Sandberg is, as Paleisheuwel, a rural hamlet at a railway siding along the railway line to Bitterfontein. Access to Sandberg is obtained from the R365 (Main Road 538) expanding from Piketberg to Leipoldtville. The settlement hosts residents working on surrounding farms.

i. Historic Overview

Sandberg is a railway siding with some dwellings.

ii. Town Hierarchy & Economic Base

Sandberg's economic base depends on the surrounding intensive agricultural activities. The railway services were downsized and the siding is no longer in operation.

iii. Spatial Elements

The railway and the intensive agricultural uses are the dominant spatial elements in Sandberg. The R365 passes the hamlet towards the west as does the Lambertshoek River which runs parallel and below the road. The Lambertshoek River connects to the Langvlei River.

iv. Urban Structure

Settlement Pattern and Layout

The village has a linear form, a row of houses along the railway line, and farm yards on the outskirts of the village. There is also a village store (shop), a primary school with a pre-primary facility and a community hall.

Density

Sandberg is a low density settlement. There is some vacant land is available in-between.

Built form

All dwellings are single story dwellings.

Functionality

All dwellings are in walking distance from the shop. All other services are accessed in higher order towns such as Lamberts Bay and Clanwilliam.

Growth potential

The growth potential of Sandberg is low.

v. Movement Network

The main access road to Sandberg is the **R365** (538). A minor dirt road connects Sandberg and the R365. The railway line runs past the western side of Sandberg.

Services and Infrastructure

The Cederberg Municipality does provide limited municipal services to Sandberg:

Water

The water source and storage capacity in Sandberg is sufficient, whilst the reticulation capacity requires upgrading.

Sewerage and Sanitation

Sandberg does not have a sewerage management system and conservancy tanks are still used. The municipality pumps out the conservancy tanks when required. These tanks require maintenance.

Electricity

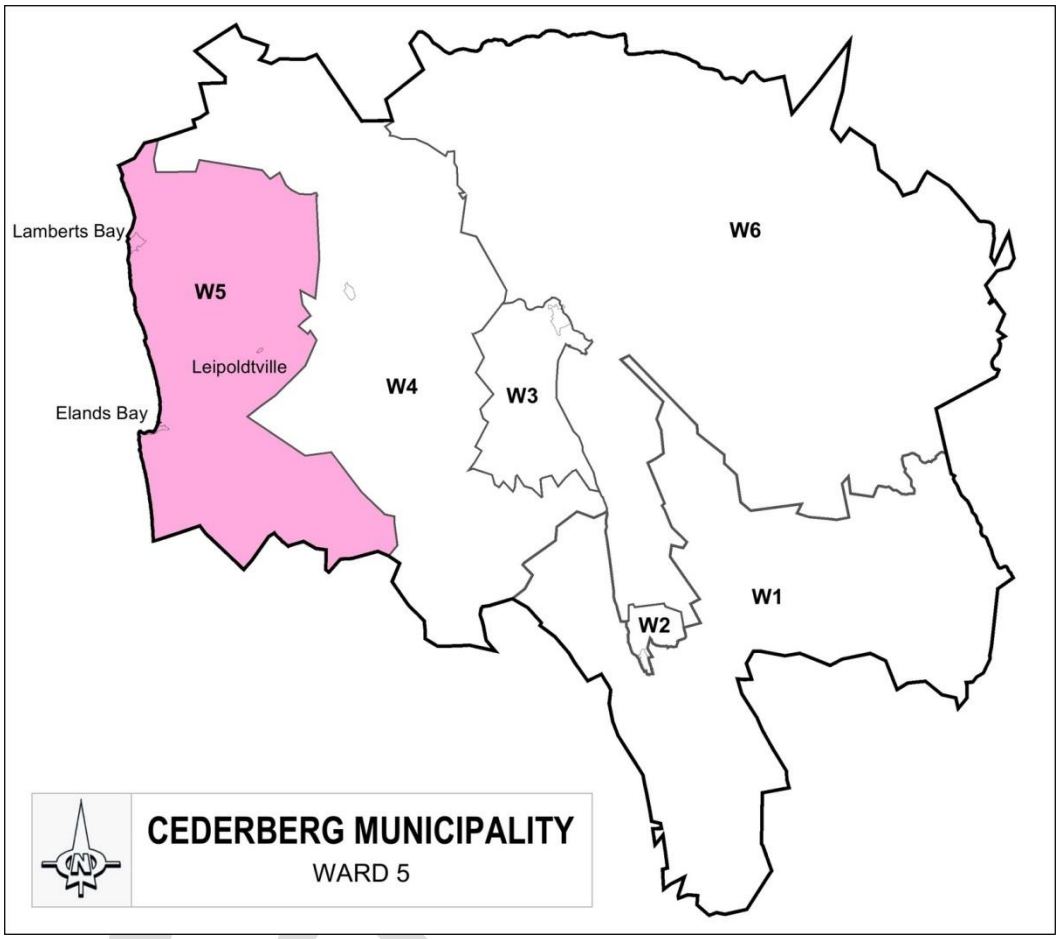
Eskom provides electricity in Sandberg. There is sufficient electrical capacity and reticulation.

vi. Development Potential

Development potential in this rural settlement is limited to residential functions. The isolation of the settlement limits higher development potential. The need for residential functions will remain the highest due to season workers looking for accommodation either in the hamlet or nearby and even to settle close to the seasonal work.

7.4 Ward 5: Elands Bay, Lamberts Bay and Leipoldtville

Ward 5 mainly comprises of the coastal area within the Cederberg jurisdiction area. The urban areas of Elands Bay and Lamberts Bay is included as well as the rural settlement, Leipoldtville.



The ward has a population of 7 616 people representing 15% of the total municipal population and 2155 households. The average household size is 3.5 persons.

'The area is 655km in extent with a density of 12 persons/km.

There is a Waiting list of 1333 households (18% of ward population or 62% of ward households) \

There are three settlements in this ward: Elands Bay, Lambert Bay both local nodes and Leipoldtville, a rural settlement.

	Economic Base	Place Identity	Locational Advantage	Spatial Planning Category
Elands Bay	Coastal and wetland tourism node	Former fishing village Vacation destination	Coastal town	Local node
Lamberts Bay	Coastal tourism node	Former fishing village Vacation destination	Coastal town	Local node
Leipoldtville	Agri-tourism node	Historic Sandveld village	Connection between Elands Bay and Graafwater as well as the N7	Rural settlement

7.4.1 Elands Bay

Elands Bay is situated along the West Coast where Verlorenvlei River flows into the sea. The town is characterised by scenic landscape elements including the coast tine, Verlorenvlei River and Baboon Point Mountain along Elands Bay beach. Elands Bay is accessible from Redelinghuys via the R366 road and from Leipoldtville via a connection road from the R365. The R27 connects Velddrif and Elands Bay and a gravel road along the coastline connects Elands Bay and Lamberts Bay.

Elands Bay functions as a lower order service centre that provides goods and services to the surrounding local residents. The town is considered as an attractive vacation destination due to its distinctive fishing village character. Elands Bay is also considered a well-known surfing destination which contributes to the local tourism industry.

i. Historic Overview

Elands Bay is noted for its caves, which have a number of rock paintings. The natural and cultural landscape features comprise a layered group of archaeological and historical sites interlocked with the landscape in their original setting, that together record the long history of pre-colonial and 20th century human settlement, and that stretches back for hundreds of thousands of years.

No other known area along the entire coastline of the West Coast concentrates a diversity of heritage resources of such high significance as Baboon Point. Elands Bay Cave and the associated shell middens and archaeological and palaeontological sites nearby give more detailed evidence of the cultural history of San hunter-gatherers and Khoekhoe herders and their ancestors, of their reliance on marine and estuarine resources, and of past environments and flora and fauna, over the past 120 000 years than any other place on the west coast of Africa. It is the only site on the entire African continent where rock paintings can be found so close to the coast. The historical significance of Baboon Point in colonial times is further enhanced by several World War II radar station buildings. These structures are testimony to the way in which the landmark qualities of Baboon Point and its commanding view of the sea led to its selection for a radar station and to South Africa's role in an historic event of global significance.

ii. Town Hierarchy & Economic Base

Elands Bay mainly functions as a low order service centre and holiday town that supplies mainly basic goods and services to its local inhabitants. The fishing industry forms the main economic base for Elands Bay whereas agriculture, especially potato farming, makes a steady contribution to the economy. The town has also become known as one of the surfing venues of the world.

iii. Spatial Elements

In 2009, Heritage Western Cape declared the Elands Bay Cave and most of Baboon Point (Cape Deseada), on which it is located, as a provincial heritage site. The area was once home to Bushmen and a wealth of Bushman art and paintings can be found in caves that are accessible to visitors.

Eland's Bay along with much of this coastline is an "important" bird habitat as is the Verloerenvlei, which is a Ramsar estuary. The estuary supports some 500 species of birds including flamingos and pelicans. Elands Bay forms part of the Whale Route, and whales and dolphins can be seen during the flower season in spring.

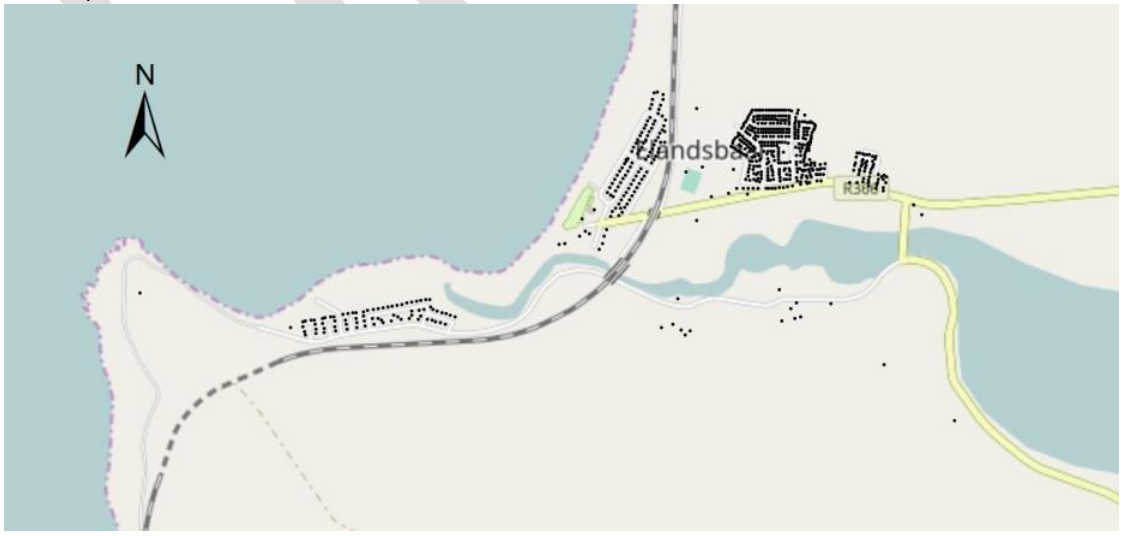
The following serves as a summary of the Spatial Elements which have a bearing on Elands Bay:

- The main road (R366) which connects Elands Bay to Piketberg and the N7
- The Verlorenvlei river which mouth bisects the town
- Verlorenvlei Estuary which is an environmental attraction and aquatic CBA area
- The coastline which has had an impact on the layout of Elands Bay + Coastal setback lines
- The “Bobbejaanberg” mountain which includes Baboon Point, a Provincial heritage site.
- The Sishen railway line
- Elands Bay nature reserve which is located towards the north of the settlement

iii. Urban Structure

Settlement Pattern and Layout

The layout of Elands Bay is almost exclusively informed by the geometries of the coast and the estuary and its flood lines. This has resulted in a 2km long band of beach front properties from the west, where the slopes of Baboon point narrow into the sea to the north where the rail line narrows towards the coast line.



Access to Elands Bay is ensured from the main route R540 between Lamberts Bay and Leipoldtville as well as main route R531 on the south side of Verlorenvlei which then joins the main street. The main street is located

on the northern shore of Verlorenvlei and provides access to the beach and CBD. Next to Hunter Street is an activity street, where the majority of commercial activities occur. Industrial areas are located in the area adjacent to the harbour at the bottom of Baboon point, next to the sea. Business areas are concentrated around the activity axis in Hunter Street. There are a few open spaces in Elands Bay.

Density

Higher density residential development is located in the north east whilst low density residential development is located in the west. The south east of Elands Bay constitutes the Verlorenvlei and contains limited development.

Built form

Most of the dwellings are single story dwellings, with a good number of double story dwellings, more so than in most other towns in the Cederberg. The industrial development's mass and scale is, in relation to any other development type, is noticeable. As it has been part of the town, it became part of the character of the town. The architecture overall is eclectic and does not represent the character of the landscape.

Functionality

Most of the residential areas are located close to the CBD except for the subsidized housing neighbourhood located on the west of the town. Various community facilities including the school, preschool, sport field and churches are located within this neighbourhood whilst the CBD, police station, library and camping site is located in the central area.

Growth potential

The heritage and natural attractions of Elands Bay are considerable and as most of these are tourism based they are likely to be increasingly important economic resources in high demand as the tourism market grows. The projected additional land required to accommodate the future growth in Citrusdal until 2031, as per the Cederberg Human Settlement Plan is 265.1ha.

iv. Movement Network

The following Primary movement networks are found in Elands Bay:

- The main movement network that enters Elands Bay is the **R366** (2185).
- The connection routes include minor dirt roads that access Elands Bay from the north and south (531). This minor road links up with the R366 in the centre of Elands Bay.
- The main activity corridor in Elands Bay is Main Street.
- The commercial activities are located along the main activity corridor at the intersection with Hunters street.

- The Sishen-Saldanha railway runs through Elands Bay

v. Services and Infrastructure

The Cederberg Municipality currently provide the following municipal services to Elands Bay.

Water

The bulk water supply, two boreholes, is adequate to provide for Elands Bay. Additional water storage capacity of 1ML is required whilst the water reticulation network has some spare capacity as the diameter of the pipes is sufficient.

Sewerage and Sanitation

The sewerage treatment works is inadequate and does not have sufficient capacity, whilst the reticulation system is limited and requires upgrading as does the pump station. The system is generally overloaded in the summer during the holiday season.

Electricity

There is sufficient electrical capacity and reticulation in Elands Bay as 1MvA is generated by the substation of which only 400Kva are used. The reticulation system is to accommodate the waiting list.

vi. Development Potential

Elands Bay offers a variety of residential and tourism development opportunities due to the town's location on the coast. The location of the Verlorenvlei passing through the town also creates a peaceful living environment making Elands Bay attractive as a vacation destination. The Verlorenvlei River is identified as a RAMSAR wetland site which indicates high conservation value in Elands Bay.

The scenic coastal landscape also creates opportunities for pedestrian and cycling routes along the beach front and along the Verlorenvlei River.

Elands Bay Local Spatial Development Proposals
Residential
• Proposed residential expansion for subsidised housing in Zone D. • Potential for residential expansion north of the sport field in Zone B. • Proposed residential expansion to the eastern boundary of Zone F, north of the railway line. • Infill opportunities on existing large and vacant residential erven with higher density residential infill development closer to the Central Business District (CBD) including flats, group housing etc.
Commercial
• Establish a development node at the entry of the town along the R366 which includes the fish market. • Potential development of a SBD in the high density residential area in Zone C that will also accommodate informal market trading. • Strengthen existing commercial uses in the CBD in Zone A, especially at the market and restaurant area on the square along Dune Street.

• Formalisation of the town square in Zone A along Dune Street.
Mixed Use
• Potential for industrial and institutional development north of the fish market in Zone D where mixed uses area proposed (Light/Service Industries, Commercial and Wholesale uses).
Open Space
• Upgrade and maintain existing cemeteries.
Sport and Recreation
• Maintain existing sport facilities. • Maintain and enhance the exiting caravan park on the beach front in Zone A. • Development of an active open space system including walking trails along the Verlorenvlei River as well as along the beach.
Tourism
• Creation of a tourism/recreational node on the beach front to provide ablution and parking facilities for surfers and other visitors to the beach. • Obtain the old school site from the Municipality for the development of a tourism facility south east of Verlorenvlei River along the Redelinghuys link road.
Transport
• Develop a pedestrian and cycling link between the north eastern and south western part of the town along the Verlorenvlei River. • Earmarked pedestrian crossings across the Verlorenvlei River. • Potential upgrade of the roads leading to the harbour and the provision/formalisation of parking for “bakkies” and boat trailers.
Restructuring
• Beautification of main access points to Elands Bay to protect and maintain the esthetical value of this coastal town and surrounding scenic landscapes.
Land Reform
• Alternative land identified for small farmers and community gardens north of Zone D.
Environment
• Continued protection of the Verlorenvlei River area which is identified as a RAMSAR wetland site. • Protection of Baboon Point in Zone: Investigate opportunities for supporting uses to the protection area. • Determination of flood line on the northern bank of the Verlorenvlei River to determine the development potential of the land.
Passage to the sea
• Improvement of passage to the sea via a slipway for boat launching north of Zone G.
Harbour
• Upgrading of the slipway and potential for alternative uses in degraded factories at the Elands Bay harbour.

Table 28: Elands Bay Development Proposals

vii. Development Zones and Proposals for Elands Bay

The table below contains specific development proposals for Elands Bay. It has to be read in conjunction with the Development Zone plans for Elands Bay.

ELANDS BAY LAND USE ZONES		Low Density Residential	Medium Density Residential	High Density Residential	Secondary Educational	Institutional	Professional Services	Business	Secondary Business	Churches	Institution	Guest houses	Authority	Sport/Recreational Facilities	Industrial / Service Trade Industries
A	Residential area and CBD with tourism and recreational uses along the beachfront.	X	X	X 1	X	X	X	X 1	X	X	X	X	X	X	X
B	Higher density residential area with areas allowing expansion. Allow for business related uses along activity streets. Limited existing mixed uses along the southern side of Main Road. Development to be sensitive to Verlorenvlei.	X	X	X 1	X	X	X	X 1	X	X	X	X	X	X	
C	Residential area, supporting social services and limited mixed uses along southern side of Main Road. Potential for a secondary business node along the Main Road (R364), development to be sensitive to Verlorenvlei.	X	X	X 1	X	X	X	X 1	X	X	X	X	X	X	
D	Higher density residential areas allowing for expansion and for development of a mixed Use Precinct surrounding the Fish market. Proposed development node around the R366 and road to Redelinghuys intersection.	X	X	X 1	X	X	X	X 1	X	X	X	X	X	X	X
E	Low density residential area on beachfront. Allow for limited infill residential development opportunities.	X	X		X	X	X		X	X	X	X	X	X	
F	Area surrounding Elands Bay harbour and Baboon Point. Development to be sensitive to the environment and provincial heritage status. Allow for Phakisa initiative (SHDU) around the harbour.	X	X			X		X 1	X		X		X	X	X 3
(1) Flats along activity streets and at nodes **(2) At existing nodes** **(3) Only on existing footprints**		**Business Uses** i.e. shop, supermarket and service station **Institutional Uses** i.e. Schools, places of instruction **Professional Services** i.e. Office blocks **Secondary Business Uses** i.e. Café, house shops, small offices and home occupation **Secondary Educational Uses** i.e. Crèches/day care													

Table 29: Elands Bay Development Zones

7.4.2 Lamberts Bay

Like Elands Bay, Lamberts Bay is also situated along the West Coast where the Jakkals River flows into the sea. This coastal town is approximately 290km north of Cape Town and 62km west of Clanwilliam. Lamberts Bay is accessible from the south via the R365 and from the east via R364.

Lamberts Bay's identity as a tourism attraction is linked to the bird island and fishing industry. The town is also a desirable vacation destination due to its locality along the coast and the availability of two caravan parks.

i. Historic Overview

Lamberts Bay has been proclaimed 'the Diamond of the West Coast' because of its white beaches, wildlife and lobsters. Although primarily a fishing town it has become a significant tourist attraction on the West Coast due to its moderate all-year climate.

Lambert's Bay is named after Admiral Lambert of the British Navy who did a marine survey of the bay between 1826 and 1840. The first crayfish factory was started by Mr Lindström in 1918. Lamberts Bay was also used as a lay-up for British warships during the war of 1900-1902.

In 1887 Joseph Carl Stephan bought Otterdam farm. Stephan used the natural harbour in Lamberts bay for trading purposes, exporting wheat from neighbouring farms. Stephan commenced to buy commercial buildings in the town and built the Marine hotel in 1888. Having an eye for profit, Stephan sold off part of the farm to the government and after 1909 other people started to settle in the area. The town was finally proclaimed in 1913 when a number of plots were sold to private individuals. In 1929 the town became a local authority and was declared a Municipality in 1969.

ii. Town Hierarchy & Economic Base

Lamberts Bay mainly functions as a fishing industry, because of its close proximity to the coast. The building of a processing factory for fishmeal, lobster packaging and potato chips led to sound growth that makes a substantial contribution to the town's economic base. The town is also characterised by an impressive coastline and unique Bird Island, which is a favourite tourist destination.

iii. Spatial Elements

Lamberts Bay surrounds a rocky promontory from which it was possible to create a harbour with the aid of breakwaters to accommodate the docking of boats. The cold Benguela current flows along the coastline and provides nutrients which combined with upwelling attracts the pelagic fish shoals to the area. In return the fish become a food source for the seals and bird species which have established breeding colonies in a part of Lamberts Bay which is included in the harbour. Fishing also initially sustained the community of Lamberts Bay. In modern times the focus has shifted from fishing to the production and export of potatoes as Lamberts Bay is strategically located in relation to the massive Sandveld potato farming industry nearby. This has enabled the decommissioned canning factories to be converted to potato chip manufacturing plants and thus retain some of the employment from the fish factories. These factories provide raw potato chips for enterprises such as KFC and Mc Cains.

Soil around Lamberts Bay is fertile but water is scarce with an annual rainfall of 100 – 200mm per annum only. The settlement is already dependent on groundwater and there are concerns about water table levels. The Jakkalsvlei River is potentially an Aquatic Critical Biodiversity Area (CBA). A terrestrial CBA has been indicated around the west of the settlement roughly in line with the railway. The following serves as a summary of the Spatial Elements which have a bearing on Lamberts Bay:

- The coastline which has had an impact on the layout of Lamberts Bay + Coastal setback lines
- The Harbour
- Bird Island with its' bird colonies
- The Jakkalsvlei River
- The Aquatic CBA (SANBI) area located to the north of the town near the Jakkalsvlei River
- The Sishen railway line which serves as a buffer between the settlement and the terrestrial CBA (SANBI)
- The golf course which is located near the entrance of Lamberts Bay
- The R365 road which runs to Clanwilliam serves as the only 'official' entrance of the town

iv. Urban Structure

Settlement Pattern and Layout

The part of Lamberts Bay seaward of the R365 comprises a rectangular grid aligned with the coast line. The 1st extension of the town inland of the R365 was also laid out in a grid on an axis along Burrel Street linking directly to the two squares in the CBD. The 2nd extension was laid out on a curvilinear street network.

Access to Lamberts Bay is ensured through the main route R55 which runs through the town. Most of the traffic enters the town from the east of this route leading to the N7 and Clanwilliam via Graafwater. Main, Voortrekker and Church Streets are activity streets where the majority of commercial activities occur. Industrial areas are located in the area adjacent to the harbour. Business areas are concentrated around the activity axis in Church Street.

Density

High density residential development is located east, whilst low density residential development is located to the north and the south with mixed densities in the CBD.

Built form

Although some historical elements have survived, e.g. the brick factory chimney and some Cape Dutch revival buildings, most of town's historic buildings, normally an attractive addition to the streetscape and of tourist value, have been renovated in such a way as to leave little trace of their heritage. In most cases new buildings are utilitarian in design.

Dwellings along the cost are a mixture of single story and double story buildings with mostly single story dwellings in the high density residential area.

The industrial development's mass and scale is, in relation to any other development types, dominates. As it has been an integral part of the town it has become part of the character of the town.

Functionality

Most of the residential areas are located close to the CBD except for the neighbourhood located on the eastern side of the town. However various community facilities including the schools, churches, sportsgrounds and commercial activities are located in this neighbourhood

Growth potential

Lamberts Bay has seen a significant increase in the lower and middle income groups in the past decade suggesting that there is movement in the economy of settlement. Opportunities in the tourism and rural coastal lifestyle sectors are mainly responsible for the economic movement.

v. Movement Network

The following Primary movement networks are found in Lamberts Bay:

- The **main movement network** for Lamberts Bay is the R364 (538) that give direct access from the south and west into the town. This movement network runs straight through the town.
- The main activity corridors are Church Street that links up with Main Street, and Burrel Street that links up from the south.
- The commercial activities are located along these main activity corridors as well as roads parallel to these roads or leading off these roads in the central location.
- The Sishen-Saldanha railway runs through Lamberts Bay

vi. Services and Infrastructure

The Cederberg Municipality currently provide the following municipal services to Lamberts Bay.

Water

The bulk water supply (boreholes) is inadequate in Lamberts Bay and a desalination plant is under construction. The borehole balancing dam capacity is insufficient and the borehole reservoir requires a 3ML upgrade. The reticulation system required the pump station to be upgrade as the standby pump and reservoirs at Wadrif are constantly used.

Sewerage and Sanitation

The sewerage works and reticulation pipe capacity are inadequate in Lamberts Bay and sewerage works require an upgrade.

Electricity

As the electricity supply is insufficient in Lamberts Bay, the electricity capacity has to be upgraded from 2.7MvA to 3.5MvA during the proposed housing development.

vii. Development Potential

Like Elands Bay, Lamberts Bay is a coastal town in the Cederberg jurisdiction area and the mild climate, beautiful scenery and peaceful living creates various possibilities for mainly residential and tourism development. The historical fisherman's harbour character of the town further enhances tourism potential. Potential for the expansion of industrial and commercial uses also exist.

The harbour area of Lamberts Bay is identified as Phakisa project to enhance the ocean economy and revitalise the small harbour and harbour infrastructure. This will ensure sustainable development of the harbour area in Lamberts Bay.

Lamberts Bay Local Spatial Development Proposals
Residential
• Proposed expansion of low density residential uses in Zone B, south west of the Jakkals River. • Proposed infill development for mixed density residential uses in Zone E, west of the Old Cape Road and south of Malkop Bay. • Infill opportunities on existing large and vacant residential erven with higher density residential infill development closer to the Central Business District (CBD) including flats, group housing etc. • Potential for GAP housing development in Zone E, east of the Old Cape Road (R365). • Proposed subsidised, residential and FLISP housing in Zone G. • Formalisation of the informal settlement in Zone G.
Commercial
• Strengthening of commercial development (including informal markets) within the CBD along activity axis (Zone A). • Development of a SBD in Zone C.
Industrial
• Generate and Implement proclaimed harbour SEDF recommendations in accordance with the *Phakisa* initiative. Lamberts Bay is classified as a number 7 priority project to be scoped and implemented. • Proposed industrial development around the desalination plant in Zone G. • Proposed industrial development in Zone D.
Open Space
• Expansion possibilities for existing cemeteries in Zone D.
Sport and Recreation
• Expansion of existing sport field to the south where residential infill development is proposed in Zone G. • Upgrade and maintain existing sport fields.
Tourism
• Maintain and support the existing caravan park in Zone E, south of Malkop Bay and west of the Old Cape Road (R365) as well as the caravan park at the northern boundary of Zone A, south of the Jakkals River. • Proposed tourism node along the Jakkals River at the entry of the town (near "Bosduifklip" restaurant) to encourage tourism opportunities.
Transport
• Maintain main roads and improve access to the beach.
Restructuring
• Beautification of main access points to Lamberts Bay to protect and maintain the esthetical value of this coastal town and surrounding scenic landscapes.
Land Reform
• Land identified outside eastern boundary to facilitate small farmers & community gardens on commonage.

Table 30: Lamberts Bay Development Proposals

viii. Development Zones and Proposals for Lamberts Bay

The table below contains specific development proposals for Lamberts Bay. It has to be read in conjunction with the Development Zone plans for Lamberts Bay.

LAMBERTS BAY LAND USE ZONES		Low Density Residential	Medium Density Residential	High Density Residential	Secondary Educational	Institutional	Professional Services	Business	Secondary Business	Churches	Institution	Guest houses	Authority	Sport/Recreational Facilities	Industrial / Service Trade Industries
A	Zone A is a medium and high density residential area along the coast consisting of the CBD, harbour and light industrial uses.	X	X	X 1	X	X	X	X 2	X	X	X	X	X	X	X 2
B	Zone B is a low density residential area with relevant supporting social services. This zone provides for residential infill and tourism development.	X	X	X 1	X	X	X		X	X	X	X	X	X	
C	Zone C medium and high density residential area including a business node, industrial precinct and relevant supporting social services.	X	X	X 1	X	X	X	X 2	X	X	X	X	X	X	X 1
D	Zone D is an industrial precinct including recreational facilities and cemeteries. This zone provides for cemetery expansion.				X	X	X	X 2	X	X	X		X	X	X 2
E	Zone E is a medium and low density residential area along the coast. This zone provides opportunities for residential infill and resort development. The northern part of the zone also includes a portion of the CBD.	X	X	X 1	X	X	X	X 2	X	X	X	X	X	X	
F	Zone F is a high density residential area with relevant supporting social services.	X	X	X 1	X	X	X	X 2	X	X	X	X	X	X	
G	Zone G is a proposed high density residential area providing infill residential and industrial development opportunities.	X	X	X 1	X	X	X	X 2	X	X	X	X	X	X	X 2
(1) Flats along activity streets and at nodes **(2) At existing nodes**		**Business Uses** i.e. shop, supermarket and service station **Institutional Uses** i.e. Schools, places of instruction **Professional Services** i.e. Office blocks **Secondary Business Uses** i.e. Café, house shops, small offices and home occupation **Secondary Educational Uses** i.e. Crèches/day care													

Table 31: Lamberts Bay development Zones

7.4.3 Leipoldtville

Leipoldtville is a small rural settlement with a Sandveld character and rich visual landscape. The town fulfils an important role of providing for the surrounding rural residents as well as the communities of the Langvlei river valley and the Wadrif "soutpad" area.

Leipoldtville is accessible from the R365 that connects Paleisheuwel with Lamberts Bay. Access is also obtained from a connection route (Graafwater - Lamberts Bay - Vredendal Rd) via the R364 that connects Graafwater with Lamberts Bay.

i. Historic Overview

This historic sandveld village is named after the Reverend C F Leipoldt, a Dutch Reformed minister in Clanwilliam from 1884 to 1910 and father of the Afrikaans poet C. Louis Leipoldt.

ii. Town Hierarchy & Economic Base

Leipoldtville has a limited economic base and primarily fulfils the role of a local service point for the surrounding agricultural community. The service function that is delivered in the town is very limited and primarily social of nature with a small primary school and church that are situated here. The economic growth potential in Leipoldtville is therefore very limited. Existing functions in the town includes a general dealer, service station and a Bed and Breakfast facility.

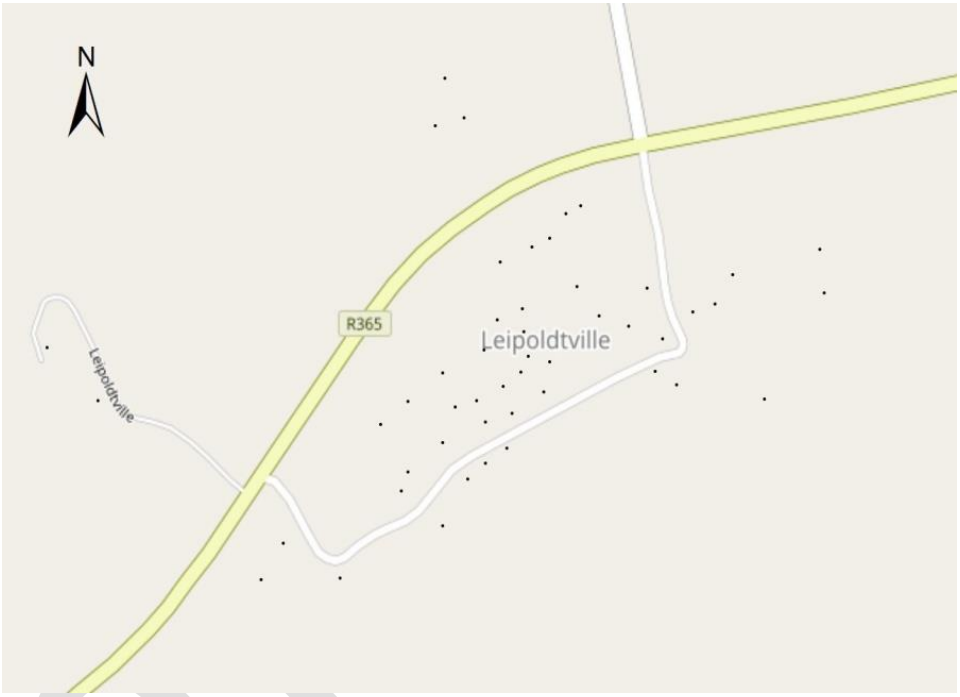
iii. Spatial Elements

Leipoldtville is surrounded by agricultural uses. The topography is relatively flat. Towards the north of the town runs road R365 while the Langvlei River is located towards the South. The establishment of the settlement can be contributed to the establishment of the church and the congregation of those who are involved in the surrounding agricultural activities.

iv. Urban Structure

Town Hierarchy & Economic Base

The main route, R365 that links Piketberg and Lambert Bay forms the northern border of Leipoldtville. The access road from the R364 also meets the R365 at the entrance of the town. An activity axis exists along the entrance road.



There is no formal industrial area within Leipoldtville, however there are Agri-industrial activities in the settlement. The business area in Leipoldtville is limited and is primarily concentrated around the main access route.

Density

Leipoldtville has a low residential density character

Built form

The dwellings are early 1900 and 50s. There are very few houses that reflect a typical West Coast and Sandveld building style.

Dwellings are single story. The industrial development's mass and scale is medium agri-industry scale. As it has been part of the town, it has become part of the character of the town.

Functionality

Community facilities including a school, church and cemetery are located in the central area.

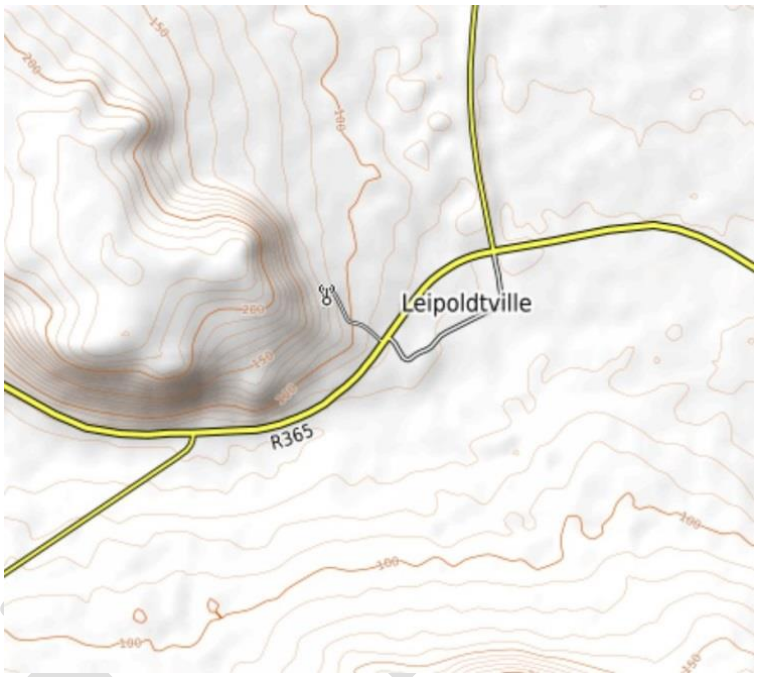
Growth potential

The existing urban form of Leipoldtville is relatively compact and is limited by the R365 and the natural stream on the southern boundary. The R365 also restricts future integration of the different areas in Leipoldtville. The agri-service and tourism role the settlement fulfils can be expanded.

v. Movement Network

The following Primary movement networks are found in Leipoldtville:

- The **R365** (538) is the main movement network that runs next to the northern boundary of Leipoldtville.
- There is one activity street in Leipoldtville. All commercial buildings will be placed next to this main activity street.



vi. Services and Infrastructure

The Cederberg Municipality currently provide the following municipal services to Leipoldtville.

Water

The iron content of the boreholes is too high and a new source is required. Storage capacity has to be increased and a new 0.5Ml reservoir is required. Reticulation capacity will have to be established.

Sewerage and Sanitation

There is no formal sewerage system and septic tanks and the bucket system is still used. A bulk sewerage treatment plant is needed including a pipe network (reticulation capacity).

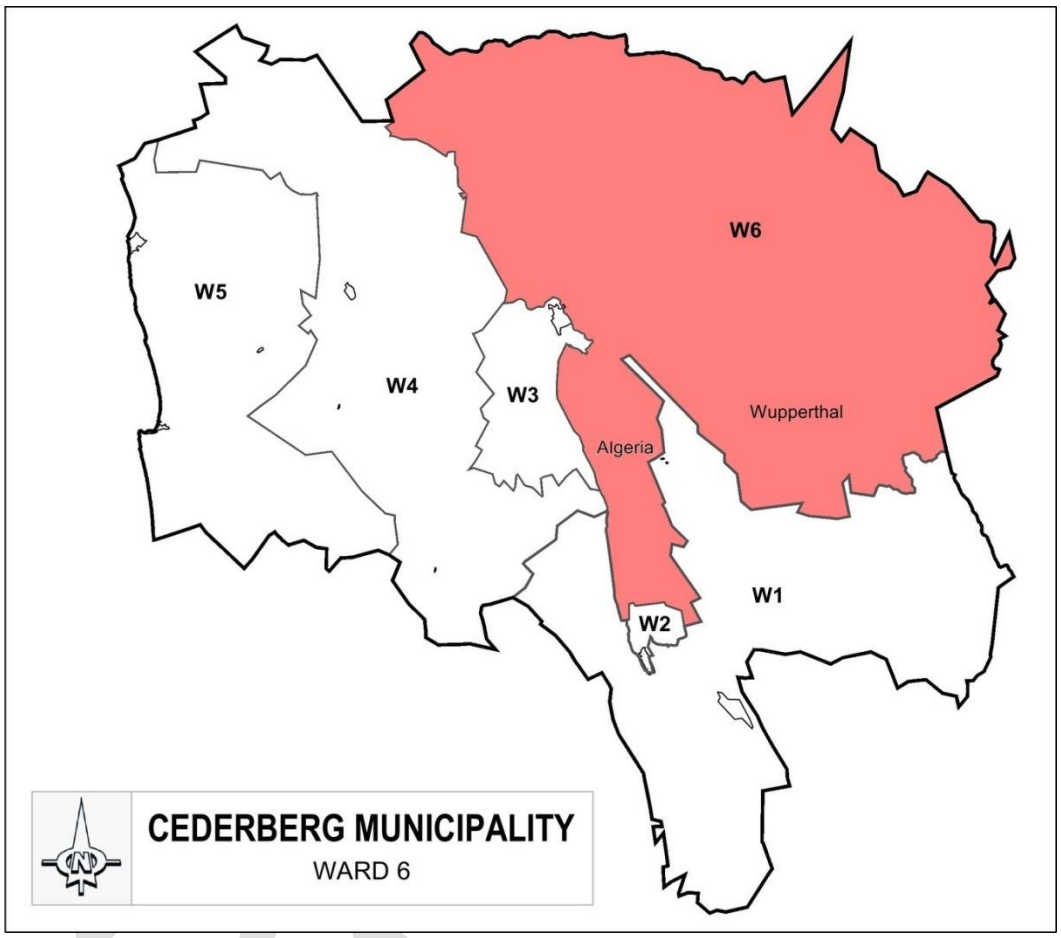
Electricity

Electricity is provided directly by ESKOM and there is sufficient electrical and reticulation network capacity.

vii. Development Potential

Although Leipoldtville has low economic growth potential, the town offers a variety of development opportunities that includes the expansion of residential, tourism and agri-industrial uses. The latter land uses should be enhanced along access road into Leipoldtville.

7.5 Ward 6: Wupperthal and Algeria



Ward 6 comprises of the largest land in the Cederberg region and mainly includes the Cederberg Wilderness area and Mountain range. The rural settlements of Algeria and Wupperthal together with its fourteen outposts i.e. Eselbank, Heuningvlei, Brugkraal, Kleinvlei, Langkloof) is located in this Ward. The land the Wupperthal is located on is owned by the Moravian Church

Major movement networks like the N7 and R364 passes through this ward.

The ward has a population of 7 890 people representing 16% of the total municipal population and 2267 households. The average household size is 3.5 persons. 'The area is 4032km² in extent with a density of 2 persons/km. There is a Waiting list of 29 households (<1% of ward population or 1% of ward households)
Algeria including Skilpaddorp and Wupperthal and its fourteen outposts are the settlement in the ward and depend on agriculture, conservation and tourism as economic base.

	Economic Base	Place Identity	Locational Advantage	Spatial Planning Category
Wupperthal	Residential	Small settlement in rural areas, having several nodes (14 outposts) that are part of the settlement	Northern tip of Cederberg Wilderness area	Rural settlement
Algeria	Agri-tourism node	Small settlement in rural areas	Gateway to Cederberg Wilderness area	Rural settlement

7.5.1 Wupperthal

Wupperthal is the most isolated settlement in the jurisdiction area of the Cederberg. The town is situated approximately 67km from Clanwilliam which is the nearest town. Access to Wupperthal is obtained via R364

The town consists over diverse resource potential which varies from the scenic landscapes of the Wilderness areas with its wildflowers, rock art at Boesmanskloof and heritage resources shaped by the town's history with its related historical buildings.

i. Historic Overview

Wupperthal (sometimes also spelt Wuppertal) is a settlement in the Cederberg Mountains. It was founded in 1830 by two German missionaries of the Rhenish Missionary Society some 100 years before the city of Wuppertal was formally established in Germany. In 1965, after the Rhenish Mission had gradually scaled down their activities in Southern Africa over a period of 40 years, a decision was taken that Wupperthal in future should become part of the Moravian Church, which by that stage had already made the transition from a mission to an autonomous church in South Africa. The town remains a Moravian mission station to this day. Eselsbank forms part of the outlying hamlets of Wupperthal.

ii. Town Hierarchy & Economic Base

Wupperthal mainly functions as a sub agricultural service centre. Since 1995 Wupperthal received reasonable development support in the form of project funding, rent-free loans and donations from various sources. The projects that have been implemented are a 4x4 route, two guest houses and the upgrading of a tea processing facility. There is also exists diverse resources like the natural beauty of the Cederberg wilderness, rock art, flowers and various heritage resources. Although the economy is primarily based on agriculture, agri- and conservation tourism also became a growing component in Wupperthal.

iii. Spatial Elements

Wupperthal is wedged between the Cederberg Mountains. Here, the topography and the availability of fertile land have dictated the layout of the hamlet. The Tra-Tra River, which has a multitude perennial and non-perennial streams which feeding it, is the main water source which runs through the hamlet.

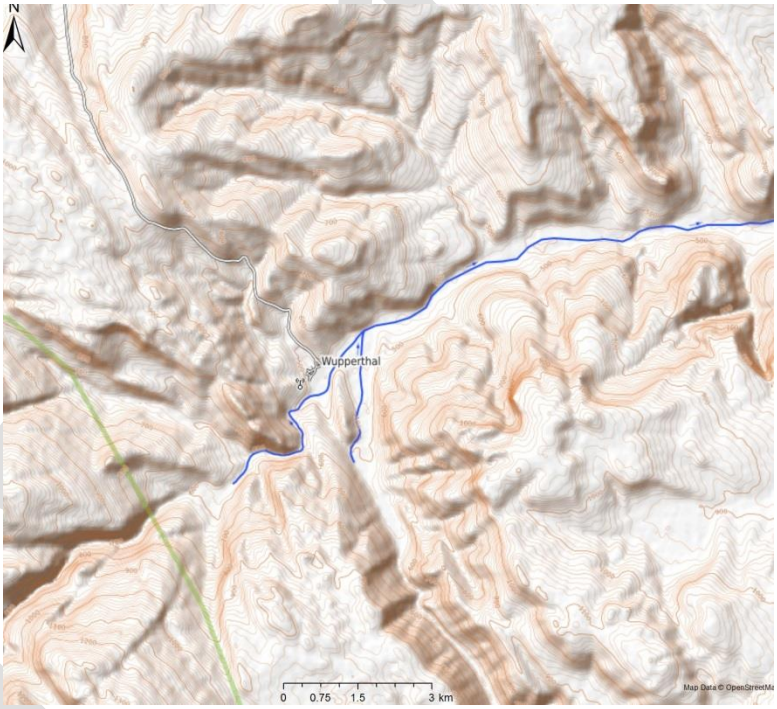
The village remains isolated, and is accessible by a gravel road from Clanwilliam over the Pakhuis Pass. Community facilities include the Moravian Church, a shop, a tea room, a post office, a school with

two hostels and a community hall. Most families in the community are dependent on small-scale agriculture or livestock farming for their livelihood. The most important cash crop is rooibos tea. The mountainous areas surrounding the village provide reasonable grazing for goats and, in August and September, attracts tourist for the flower season.

iv. Urban Structure

Settlement Pattern and Layout

The existing access road from Clanwilliam as well as the access to Eselsbank links Wupperthal to the outside world. The settlement patter in Wupperthal is such that there is only one street which forms the activity axis. Wupperthal primarily consists of 2 nodes namely the residential side and the church side. The abovementioned nodes are divided by the agricultural gardens and a tributary of the Tra-Tra River.



Density

Low density residential farm yard development represents Wupperthal and its outposts. Like Elandskloof, as these settlements are owned by a Community Property Association or the church, their density is predetermined by a limited number of erven.

Built form

Dwellings are single story rural cottages.

Functionality

Within a node any amenity or activity is within walking distance.

Growth potential

Wupperthal's growth potential is limited given its isolation.

v. Movement Network

The main roads to Wuppertal are two minor dirt roads from the South and East linking up with a divisional road (2262) in the centre of the town.

vi. Services and Infrastructure

Water

The source (the river) to supply bulk water to all settlements is sufficient. The storage capacity is sufficient but need maintenance. Upgrading of the reticulation network is required.

Sewerage and Sanitation

The oxidation ponds capacity is sufficient as waterborne sewerage is provided at some hamlets whilst UDS is provided at Heuning and Moddervlei and Eselbank). The reticulation capacity is also sufficient.

Electricity

Eskom provides electricity and there is sufficient supply and reticulation capacity.

vii. Development Potential

Development in Wupperthal is mainly limited due to the isolated location of the town in the Cederberg Wilderness area. Although development is limited, the settlement is surrounded by diverse resources including wildflowers, rock art and the heritage value of the building in the town that can be utilised for tourist attractions. The economy is driven by conservation, agriculture and tourism.

7.5.2 Algeria

i. Historic Overview

Algeria is a forestry village serving Cederberg wilderness area. There is also a camping site with the same name.

ii. Town Hierarchy & Economic Base

Algeria is a rural settlement with tourism and conservation as economic base.

iii. Spatial Elements

Located in the Ceder Mountain range, it is located in a "kloof" next to a river and surrounded by mountain slopes.

iv. Urban Structure

Settlement Pattern and Layout

The settlement consists of one square block of single residential houses.

Density

The forestry village has a medium density character.

Built form

The village is characterizes by small single story dwellings.

Functionality

Amenities (sports field and community hall) are within walking distance, whilst. All other social and institutional services are offered in Citrusdal or Clanwilliam.

v. Growth potential

Movement Network

The divisional road (2182) provides access to Algeria.

Services and Infrastructure

Water

Algeria has adequate bulk water sources. No purification takes place as the community prefers untreated water. Additional borehole capacity is required.

Sewerage and Sanitation

There is a sewerage station but the sludge pump need upgrading. Besides the sewerage treatment works needs upgrading whilst the pipe capacity needs upgrading.

Electricity

Eskom provides electricity and there is sufficient supply and reticulation capacity.

vi. Development Potential

The function of the settlement as forestry village amidst the wilderness area limits its growth potential and protects the settlement from expansion. However limited expansion is required to accommodate the forestry workforce.

CHAPTER 8: Development Proposals: Rural and Regional

As for the urban areas, the rural areas are shaped by the form of the landscape and human infrastructure and activity. The table below provides a summary of the existing spatial forms in the Cederberg rural areas and what needs protection, what need to change and what can develop.

Natural Features providing Form in the Cederberg – Landscape **Spatial guidelines** *(from* Ecosystems Guidelines, for Environmental assessment in the Western Cape by Fynbos Forum	
Structuring Element	**Location**
Mountains (Mountain and Fynbos Ecosystems)	• Ceder, Wintershoek and Piketberg mountains
Development potential and restrictions	**Spatial guidelines**
• *Expansive views;* • *Steepness of slope;* • *Sensitive habitat;* • *Potential for hiking trails and overnight accommodation;* • *Source for resort & recreational use.* • *Protect against Microclimatic changes.*	• *Nodal development with fire trail as part of development footprint;* • *Lower lying fynbos need to be connected;* • *Prevent development that fragment ecological corridors;* • *Mountain tops that area 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 to prevent erosion.*
Structuring Element	**Location**
Rivers (Freshwater ecosystems)	○ Verloren-, Lang- and Jakkalsvlei ebb out on to the coast ○ The Oliphant, Jan Dissel, Doring and Matjies rivers represen water source for agricultural, sport, recreational and domestic us These rivers form important corridors for agriculture and touris which need to be cultivated and used with sensitivity to keep th landscape intact.
Development potential and restrictions	**Spatial guidelines**
• *Flood risk along rivers;* • *Sensitive habitat;* • *Use of water for irrigation and recreational uses;* • *Source for resort and recreational use.* • *Protect water availability, prohibit flooding and pollution.*	• *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.*
Structuring Element	**Location**
Wetlands (Freshwater ecosystems)	○ Verloren-, Lang- and Jakkalsvlei ebb out on to the coast
Development potential and restrictions	**Spatial guidelines**
• *Restrict development around these areas;* • *Maintain setback;* • *Source for resort and recreational use.*	• *Wetland areas should be demarcated before specific planning for development commence;* • *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 allow for filtering function around wetlands.*
Structuring Element	**Location**
Formal and Informal Conservation areas	• The Cederberg Nature Reserve Complex is comprised of the Cederberg Wilderness, Matjies River Nature Reserve and Hexberg State Forest. The Cederberg Nature Reserve Complex includes 79 735 ha of land. • The informal corridor running east west from the Cederberg Wilderness area to the coast
Development potential and restrictions	**Spatial guidelines**
• *Development to be environmentally sensitive;* • *Development that support natural resources.*	• *Spatially identify formal and informal conservation areas.*
Structuring Element	**Location**
Arable Land	Approximately 65% of the municipal area represents arable land. • The Oliphant's Valley where citrus and tropical fruit is cultivate • The Verlorenvlei Valley and around Paleisheuwel whe potatoes is cultivated. • The balance of the land where rooibos tea is cultivated ar small stock is kept.
Development potential and restrictions	**Spatial guidelines**
• *Conservation of agricultural resources;* • *Support diversification in the agricultural sector.*	• *Identify the extent of cultivated area.*
Structuring Element	**Location**
Beaches and Dunes	• The coast and costal dunes from the southern boundary of th municipal area to the northern boundary of the municipal area; • Shifting dunes north east of Elands Bay, Dunes along mo southern coastline and Bobbejaan Punt
Development potential and restrictions	**Spatial guidelines**
• *Conservation of dunes and ocean life* • Prohibit coastal erosion and storm damage.	• *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 principle must be strictly enforced with the installation of infrastructure under the high water mark;* • *Adhere to the ban of vehicles from dunes and beach areas.*

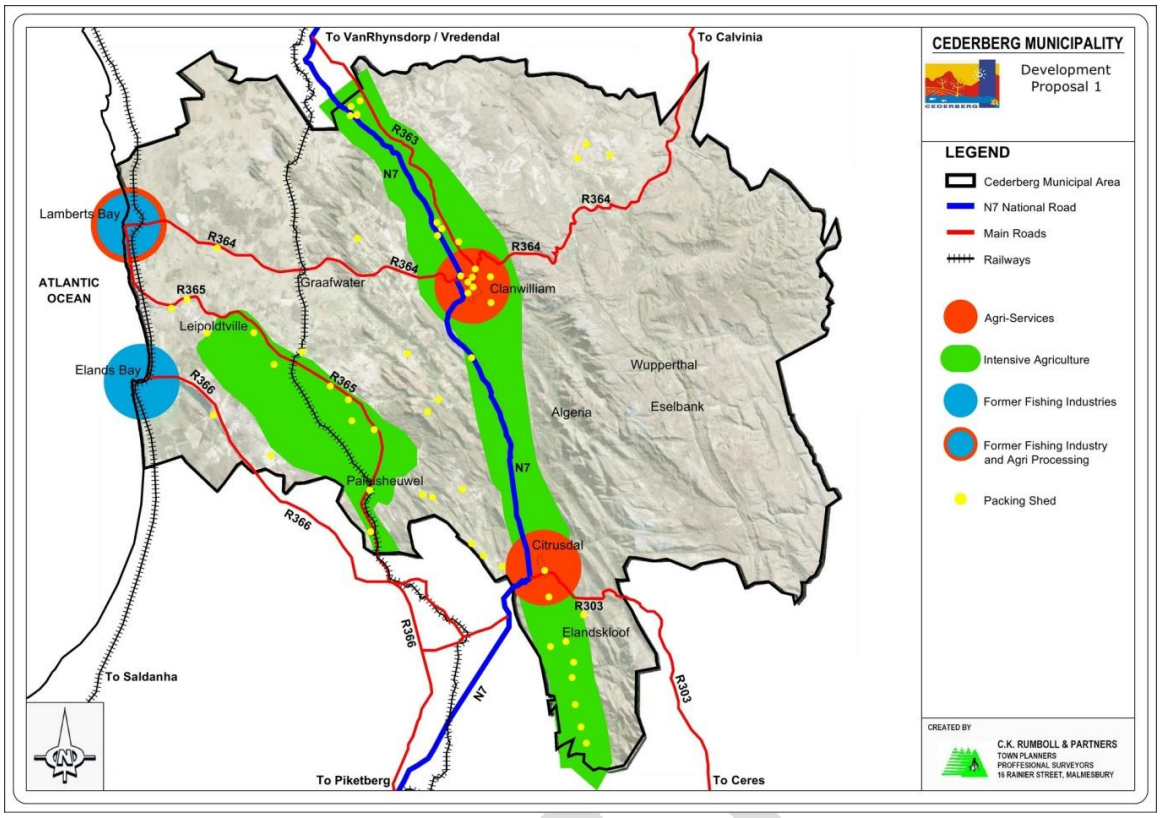
Man-made Features providing Form in the Cederberg	
Structuring Element	**Location**
Infrastructure: Main Roads	
Development potential and restrictions	**Spatial guidelines**
Improve mobility in region.	• *Infrastructure designed and places in areas that would have limited impact on the environment.* • *Infrastructure in coastal areas should consider the coastal processes to limit potential impact.*
Structuring Element	**Location**
Infrastructure: Railway line and Station	
Development potential and restrictions	**Spatial guidelines**
• *Improve mobility.* • *Use as an Alternative means of transport for people and goods.*	• *Infrastructure designed and places in areas that would have limited impact on the environment.* • *Infrastructure in coastal areas should consider the coastal processes to limit potential impact.*
Structuring Element	**Location**
Existing Settlements	
Development potential and restrictions	**Spatial guidelines**
• *Urban related development should be focused on urban areas*	• *Improve service delivery in urban areas.*

Development proposals for the Cederberg region:

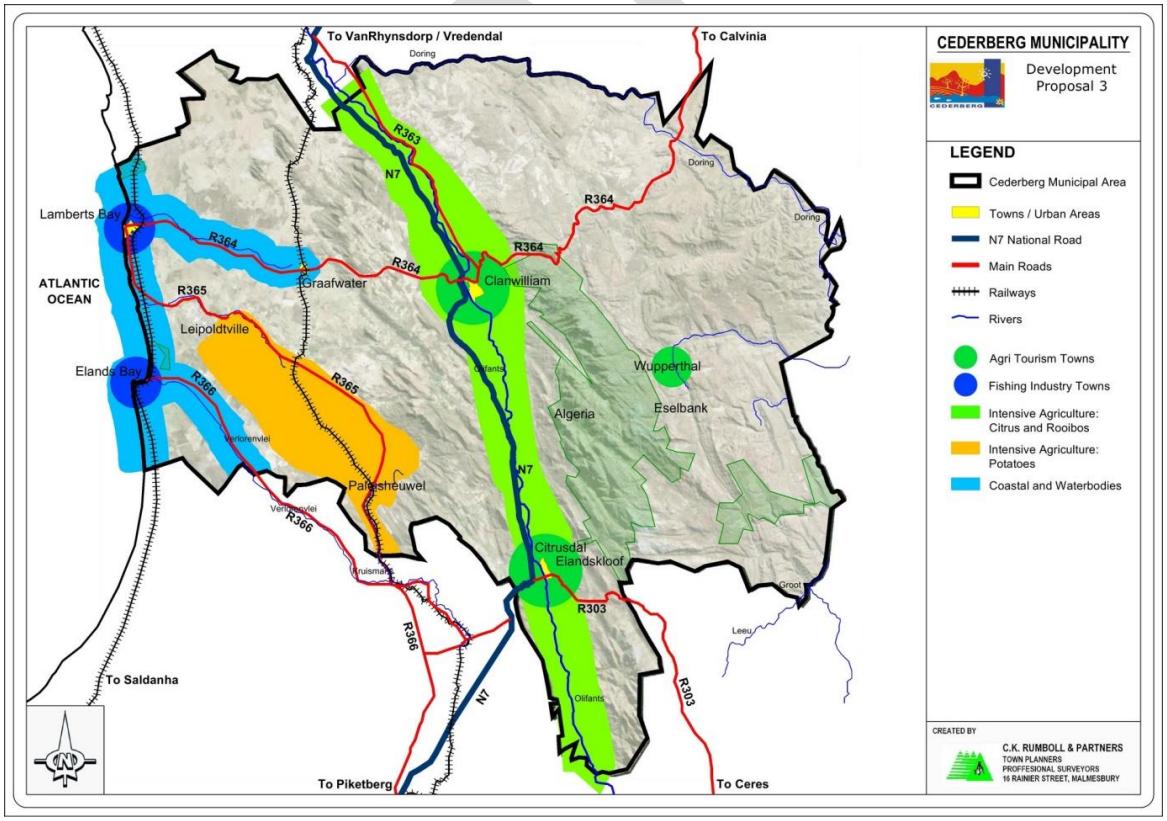
1. Develop the N7 rural and intensive agricultural corridor along the Olifants River.
2. Expand the Cederberg Nature Reserve Area.
3. Develop a precinct plan for the Verlorenvlei.
4. Develop the biodiversity corridor between the Cederberg Nature reserve area and the coast and a second corridor along the coast. (Bio regions 1 & 2)
5. Develop rural and urban tourism.

The proposals each include the following priorities:

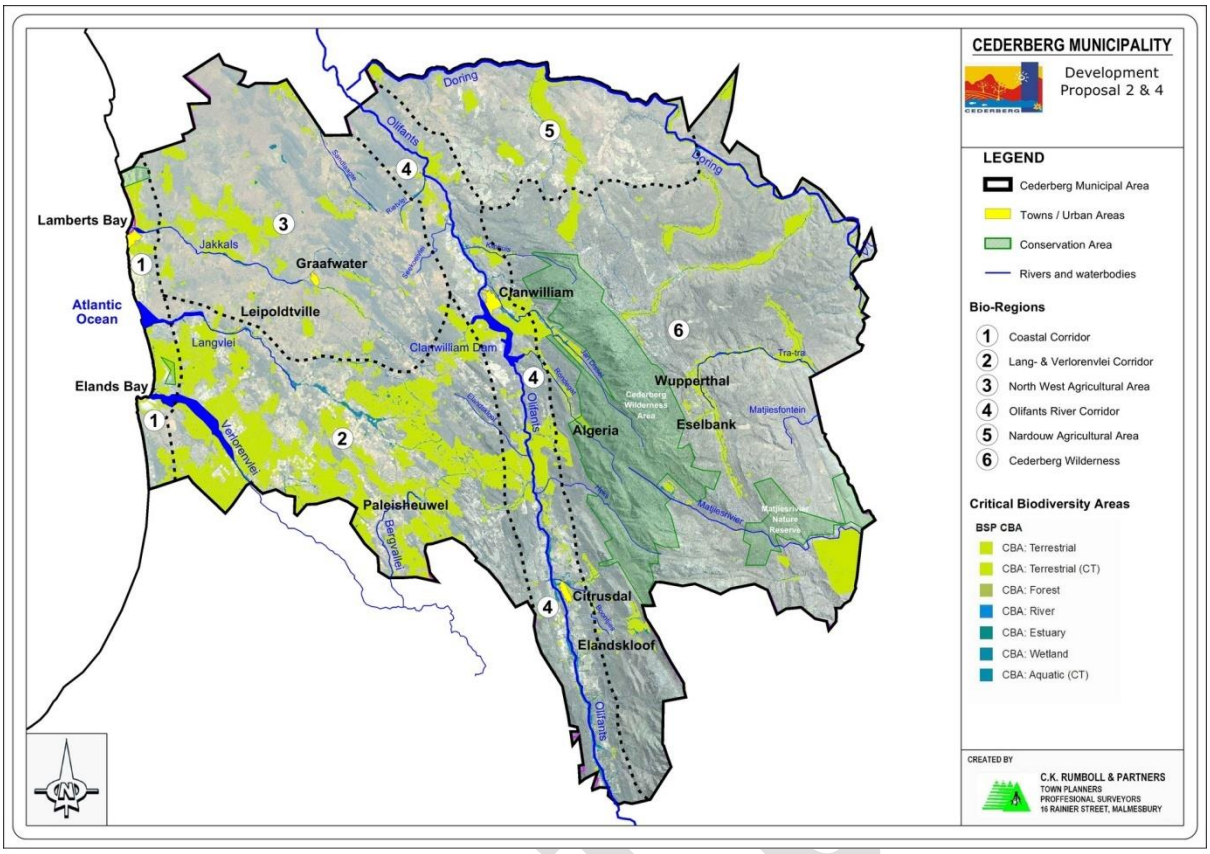
- Protecting critical resources
- Protecting and preserve Sensitive habitats
- Enhancing Ecosystem services
- Unlocking Economic opportunity (tourism)
- Strengthening Sense of place



Map 12: Development Proposal 1; intensive agricultural corridor along Olifants River



Map 13: Development Proposal 3: Develop precinct plan for Verlorenvlei



Map 14: Development Proposal 2 & 3; expand Cederberg Nature reserve & establish conservation corridor

These proposals conclude the spatial framework for the Cederberg.