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DR BEYERS NAUDE

MUNICIPAL SPATIAL DEVELOPMENT FRAMEWORK

2024/2025

PHASE 3&4:

SPATIAL PROPOSALS

(DRAFT MSDF & IMPLEMENTATION FRAMEWORK)

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ABBREVIATIONS

BLMCs	Biodiversity Landscape Management Classifications
BNLM	Dr Beyers Naudé Local Municipality
CAPE	Cape Action for People and the Environment
CBD	Central Business District
COGTA	Department of Cooperative Governance and Traditional Affairs
DALRRD	Department of Agriculture, Land Reform and Rural Development
DDG	Deputy Director General
DDM	District Development Model
DEDEAT	Department of Economic, Development, Environmental Affairs and Tourism
DM	District Municipality
DSDF	District Spatial Development Framework
EC	Eastern Cape Province
ECBCP	Eastern Cape Biodiversity and Conservation Plan
EC-SDF	Eastern Cape Spatial Development Framework
FPSU	Farmer Production Supporting Unit
GDP	Gross Domestic Product
GIS	Geographic Information System
GVA	Gross Value Addes
HDI	Index (HDI) is a composite measure used to assess the overall
HOD	Head of Department
ICT	Information and Communication Technology
IDP	Integrated Development Plans
IUDF	Integrated Urban Development Framework
KRSDF	Karoo Regional Spatial Development Framework
LM	Local Municipality
LQ	Location Quotient
LSU	large stock unit
ML/d	Mega litre per day
MTSF	Medium-Term Strategic Framework
NDP	National Development Plan
NSDF	National Spatial Development Framework
NSDP	National Spatial Development Perspective
OTP	Office of the Premier
P-MTSF	Provincial Medium-Term Strategic Framework
PSC	Project Steering Committee
PSDF	Provincial Spatial Development Framework
SACN	South African Cities Network
SALGA	South African Local Government Association
SDG	Sustainable Development Goals
SDF	Spatial Development Framework
SKEP	Succulent Karoo Ecosystem Plan
STEP	Subtropical Thicket Ecosystem Project
WTW	Water Treatment Works
WWTW	Waste Water Treatment Works

GLOSSARY OF TERMS

Bioregional Planning

The bioregional approach is intended to simultaneously include many aspects of the natural and human life in a community. It will have a different emphasis depending on the conditions and location of the place.

Biosphere Reserve

A biosphere reserve is a designated area where conservation, sustainable development, and scientific research are promoted and balanced to protect biodiversity and support human well-being.

Central Business District

The central business district (CBD) is the commercial and economic hub where the majority of businesses, retail establishments, offices, and financial institutions are concentrated.

Community Property Association

Commonly known as a homeowner's association (HOA) or property owners' association (POA), is a legal entity established within a residential community to manage and govern common areas and amenities.

Economic Development Economic development refers to the sustained, concerted actions of policymakers and communities to improve the economic well-being and quality of life of a region's inhabitants.

Environmental Planning

This involves designing human development and construction projects that are both practical and sustainable, aiming to achieve project goals while safeguarding the environment and conserving undeveloped land.

Heritage Asset A heritage asset is a building, monument, site, place, area, or landscape that holds historical, cultural, architectural, or archaeological significance. These assets are recognized for their value in preserving the history and identity of a community or region.

Integrated Planning

In recent years, calls for cross-sectoral coordination and integrated planning approaches have echoed across different fields of planning. Internationally recognized, one of spatial planning's primary roles is to enhance the integration between sectors such as housing, transport, energy, and industry, and to integrate planning policy within the often-complex hierarchy of plans. It is therefore crucial that the approach to the preparation of a regional strategy must facilitate cross-sectoral analysis and institutional arrangements while also ensuring constant consideration of the various scales of planning, highlighting the links between policymaking and delivery at national, regional, and local scales.

Land Use Planning

Land use planning is the process of organising and regulating the use of land to balance development needs with environmental and community goals.

Offset Agreement

An offset agreement refers to a contractual arrangement where an entity must compensate for its project's environmental impact by undertaking conservation or restoration activities elsewhere.

Precinct Plan

A precinct plan is a detailed plan that focuses on a specific area within a city or town and provides a comprehensive framework for that area's physical, social, and economic development.

Spatial Planning

Spatial planning is mostly recognized as a public sector function to influence the future spatial distribution of activities. The aim is to create a more rational territorial organization of land use and the linkages between them, to balance demands for development with the need to protect the environment, and to achieve social and economic objectives (Wegener, 1998). Spatial planning tries to coordinate and improve the impacts of other sectoral policies on land use, to achieve a more even distribution of economic development within a given territory than would otherwise be created by market forces. Spatial planning is, therefore, an important function for promoting sustainable development and improving quality of life.

Sustainable Development

The planning system is facing up to some of the most important challenges of our time – climate change, economic restructuring, demographic shifts, housing affordability, and deep questions about the nature of our democracy. The acknowledgement of major global issues of environmental degradation and resource depletion, as well as the deterioration of living standards has contributed to the collective agreement that sustainability is no longer a minor developmental issue,

but a trans-disciplinary challenge that must be placed at the forefront of the development agenda.

Regional Planning

Regional planning is the management of a specific area's economic, social, and physical resources. It involves the efficient placement of land use, infrastructure, and settlement growth over a larger area than a single city or town. Regional planning is related to urban planning but on a broader scale.

Strategic Planning

Strategic planning is the process of setting long-term goals and determining the best spatial development patterns to achieve sustainable growth and efficient land use.

Settlement Upgrading

This is a process that aims to improve the lives of people living in informal settlements by enhancing their access to basic services and infrastructure.

Urban Planning

Urban planning is the process of designing and managing the development of cities, including the arrangement of land use, infrastructure, and public services to create functional and sustainable urban environments.

Urbanisation

Urbanisation is the increase in the proportion of people living in towns and cities. Urbanisation occurs because people move from rural areas (countryside) to urban areas (towns and cities).

Urban Edge

This line defines the outer limits of development around an urban area. The goal is to establish limits beyond which urban development shouldn't occur and to prevent urban sprawl.

Urban Regeneration

This is the process of revitalising and redeveloping neglected or underutilised urban areas to improve physical, economic, and social conditions.

Urban Sprawl

Urban sprawl is the uncontrolled expansion of urban areas into surrounding rural land, leading to low-density, car-dependent development.

Zoning and Zoning Scheme

It is a regulatory tool used in urban and land use planning to designate specific areas for different types of land uses with various development parameters.

CONTENTS

TABLES, FIGURES AND MAPS

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PREAMBLE

The Spatial Development Framework (SDF) for the Dr Beyers Naudé Local Municipality is designed as a strategic blueprint to advance sustainable growth, foster innovation, and promote economic prosperity across our diverse communities. With a commitment to transparency and excellence, this framework provides a structured roadmap that aligns with the Spatial Planning and Land Use Management Act (SPLUMA) principles.

This SDF addresses the challenges of fragmented planning and optimizes the opportunities unique to Dr Beyers Naudé Municipality. Positioned as a key connector within the Eastern Cape, we aim to build on our rich assets, including dynamic tourism destinations, abundant natural resources, a resilient agricultural sector, and a history of adaptive development.

By prioritizing strategic partnerships and an innovative outlook, we seek to expedite housing development, enhance tourism support, and encourage agricultural diversification. This framework serves as a cornerstone for future planning, offering vital insights and guidelines to support effective land use management.

Aligned with the Municipal Systems Act and SPLUMA, our vision is to cultivate a resilient, inclusive community that values sustainable growth and equal opportunities. As caretakers of our region's rich natural and cultural heritage, we are dedicated to preserving and enhancing the character of our urban and rural areas for generations to come.

Furthermore, the SDF is not merely a planning tool but a catalyst for spatial transformation, pivotal in realizing our development aspirations. Its implementation aims to support meaningful spatial transformation, ensuring that our municipality evolves in a socially inclusive and environmentally sustainable manner.

To achieve this, we will deploy strategic development levers, drivers, and action areas as outlined in the National Spatial Development Framework. Additionally, alignment with the three themes of the Provincial Spatial Development Framework and cooperation with neighbouring municipalities will be Prioritised to promote integrated regional development.

Through collaboration and a shared commitment to progress, we strive to unlock the full potential of the Dr Beyers Naudé Municipality and move toward a prosperous, sustainable future.

THE NEED FOR AN SDF

Spatial Development Frameworks (SDFs) are essential strategic tools designed to shape current and future land use patterns within a municipality, ensuring that the vision, goals, and objectives of the Integrated Development Plan (IDP) are realized.

In accordance with the Municipal Systems Act (MSA) of 2000 (Act 32 of 2000), an SDF "must include the provision of basic guidelines for a land use management system for the Municipality."

The Dr Beyers Naudé SDF will guide planning horizons of 5 years (2024-2029), 10 years (2024-2034), and 20 years (2024-2044), with these periods reflected in urban edge delineations that accommodate future growth.

While a key element of the IDP, an SDF does not confer or revoke land use rights; rather, it offers critical guidance for municipal decision-making on land development.

Section 22 of SPLUMA specifies that: Municipal Planning Tribunals or other authorized entities must not make land development decisions contrary to the municipal SDF. Deviation from the SDF provisions is allowed only if site-specific circumstances justify such deviation.

Section 21 of SPLUMA outlines essential SDF components:

- Development principles, norms, and standards
- A five-year spatial development plan in both written and spatial format
- A long-term spatial development vision
- Identification of structuring and restructuring elements

- Population growth estimates
- Housing demand estimates
- Economic activity and employment trend analysis
- Requirements for infrastructure locations
- Designated areas for inclusionary housing
- Environmental impact assessment
- Incremental upgrading strategies
- Areas requiring detailed planning
- Sector policies
- Capital expenditure framework

SPLUMA PRINCIPLES

SPLUMA's Chapter 2 details the guiding principles for SDFs:

- Spatial Justice – to address past inequities by improving access to land.
- Spatial Sustainability – to support food security and natural resource protection.
- Spatial Efficiency – to maximize resource use for increased opportunities.
- Spatial Resilience – to foster communities that withstand economic and environmental shocks.
- Good Administration – to ensure coordinated efforts across government spheres.

VALIDITY OF THE SDF

The Municipal Spatial Development Framework (MSDF) and the IDP validity periods are aligned. Therefore, a new MSDF should be compiled or an existing one re-adopted with each new Council term. In municipalities with slow population growth and stable political leadership, the previous Council's IDP and MSDF may be re-adopted if they remain relevant and align with the current leadership's objectives.

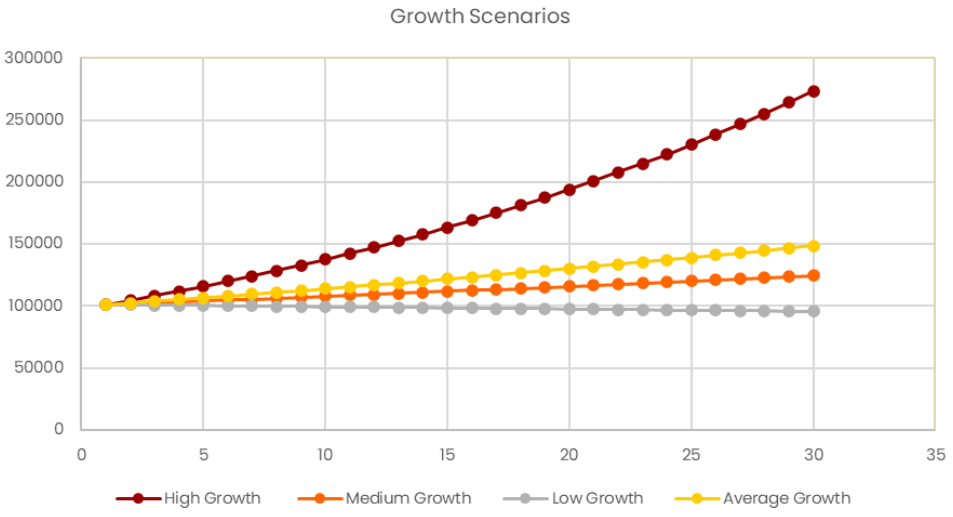
STRUCTURE OF THE SDF

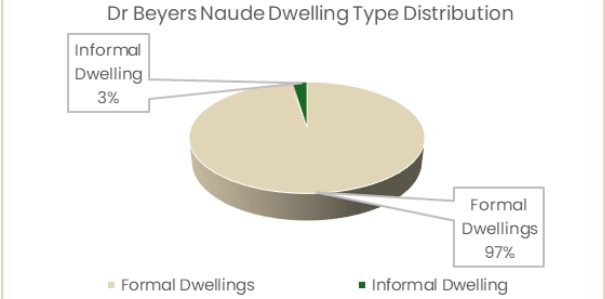
This SDF follows the structure and methodology outlined in the National Guidelines on Spatial Development Frameworks (DRDLR, 2017) for municipal SDFs:

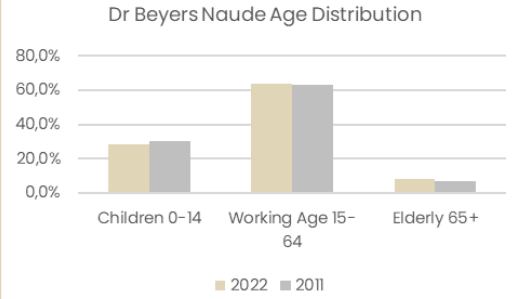
- Overview of the report's purpose and scope
- Simplified and practical SDF approach with visual emphasis
- Policy context and vision guiding the SDF
- Key spatial development challenges and opportunities
- Analysis of key economic sectors and their growth potential
- Local and regional spatial levers, drivers, and action areas
- Land use policies and management guidelines
- Framework for spatial governance and Decision-making
- Capital investment strategy aligned with SDF objectives
- Implementation strategies, monitoring, and evaluation mechanisms

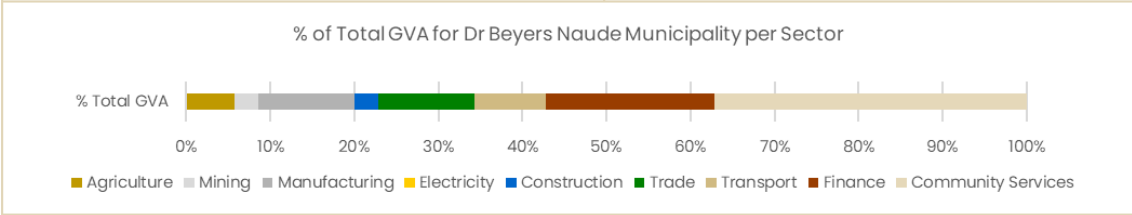
STUDY AREA

The Dr Beyers Naudé Local Municipality, located in the Sarah Baartman District of the Eastern Cape, spans a vast 28,690 km² area and serves as a gateway to the Karoo. Formed in 2016 from the merger of the Camdeboo, Ikwezi, and Baviaans municipalities, it is the district's largest municipality, encompassing towns like Graaff-Reinet, Willowmore, Aberdeen, and Nieu-Bethesda. Graaff-Reinet, known as the "Gem of the Karoo," is the municipal seat and a hub for agritourism, administration, and political activities, while Willowmore anchors tourism and agriculture in the southern part of the municipality. This region is known for its cultural and natural landmarks, including the Baviaanskloof World Heritage Site, the Valley of Desolation, and numerous historical buildings and museums.

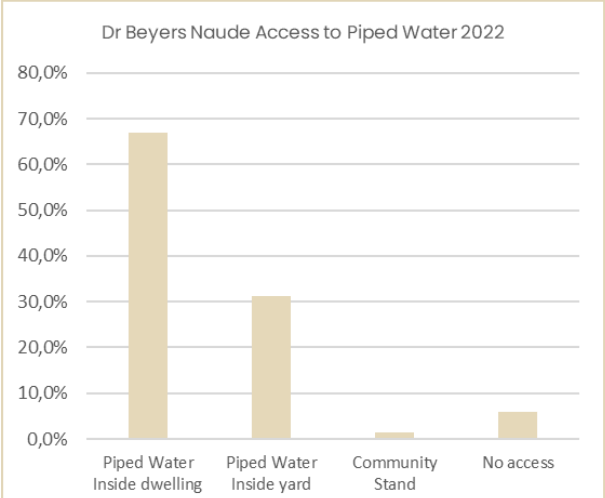








Ward	Area	Population (2011)	Estimated Population (2022)
1	Lotusville & Thembalesizwe	8,048	10,230
2	Graaff-Reinet (CBD & Horseshoe), Nieu-Bethesda & Pienaarsig	8,262	10,520
3	Asherville, Geluksdal, Smartie Town & Blikkiesdorp	5,394	6,860
4	Umasizakhe South, Hillside, Cyprus Grove, Sunnyside, Graaff-Reinet Industrial area, Spandauville & Bergendal suburbs	6,294	8,000
5	Kroonvale (North)	6,705	8,530
6	Umasizakhe North, Chris Hani Village & Eunice Kekana Village	5,077	6,450
7	Aberdeen CBD & residential area, Adendorp & Wolwas	3,214	4,080
8	Willowmore CBD, Rietbron & Baviaanskloof (incl. Saaimanshoek)	4,981	6,330
9	Willowmore (residential), Hillview & Vaalblok townships	4,473	5,690
10	Klipplaat	2,236	2,840
11	Jansenville	5,549	7,050
12	Steytlerville CBD, Golden Valley & Volstruis Valley townships, Mount Stewart, Baroe, Waterford & Wolwefontein settlements	4,038	5,130
13	Willowmore & Steytlerville residential areas, Miller & Fullarton settlements	5,736	7,290
14	Kroonvale (south), Selfbou, Santaville & Asherville	8,000	10,160
TOTAL		**79 291**	**101 001**



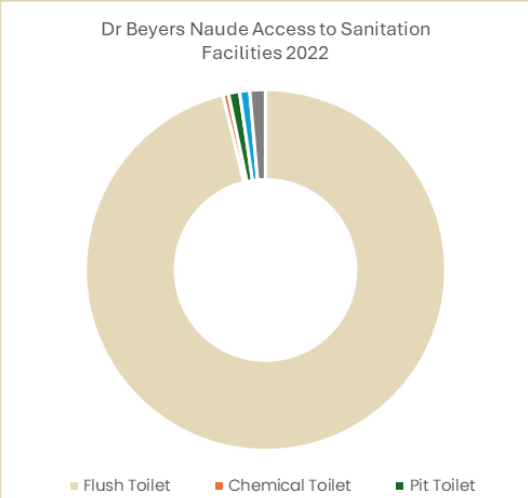


Figure 1: Statistical Overview of the Dr Beyers Naude Municipality (Stats SA, 2022)

POLICY ECOSYSTEM

The primary mandate and focus of the Municipal Spatial Development Framework (MSDF) is to ensure that broader spatial and strategic objectives, as outlined in relevant national policies and legislation (including the District Spatial Development Framework, Provincial Spatial Development Framework, and National Spatial Development Framework), are effectively implemented at the local level. The MSDF thus serves as a critical tool within the planning system, incentivizing development that aligns with a range of locally specific policy objectives while ensuring that these objectives are meaningfully applied on the ground. This structured approach helps translate high-level spatial visions and objectives into practical actions within Dr Beyers Naudé Municipality's jurisdiction, ensuring that the local landscape reflects the principles established by national and regional frameworks.

1 MULTI-LEVEL POLICY ECOSYSTEM

Strategic and spatial planning occurs across various spheres of government, each bringing its own set of priorities and legislative frameworks, resulting in a complex multi-level policy ecosystem. Navigating this intricate landscape is essential to achieving alignment and coherence across municipal, provincial, and national spheres, ensuring that each level's strategic intent is reflected in a coordinated and cohesive manner. The following figure illustrates the various policy and legislative objectives that must be considered within Dr Beyers Naudé Municipality to achieve this alignment and guide effective, integrated development planning.

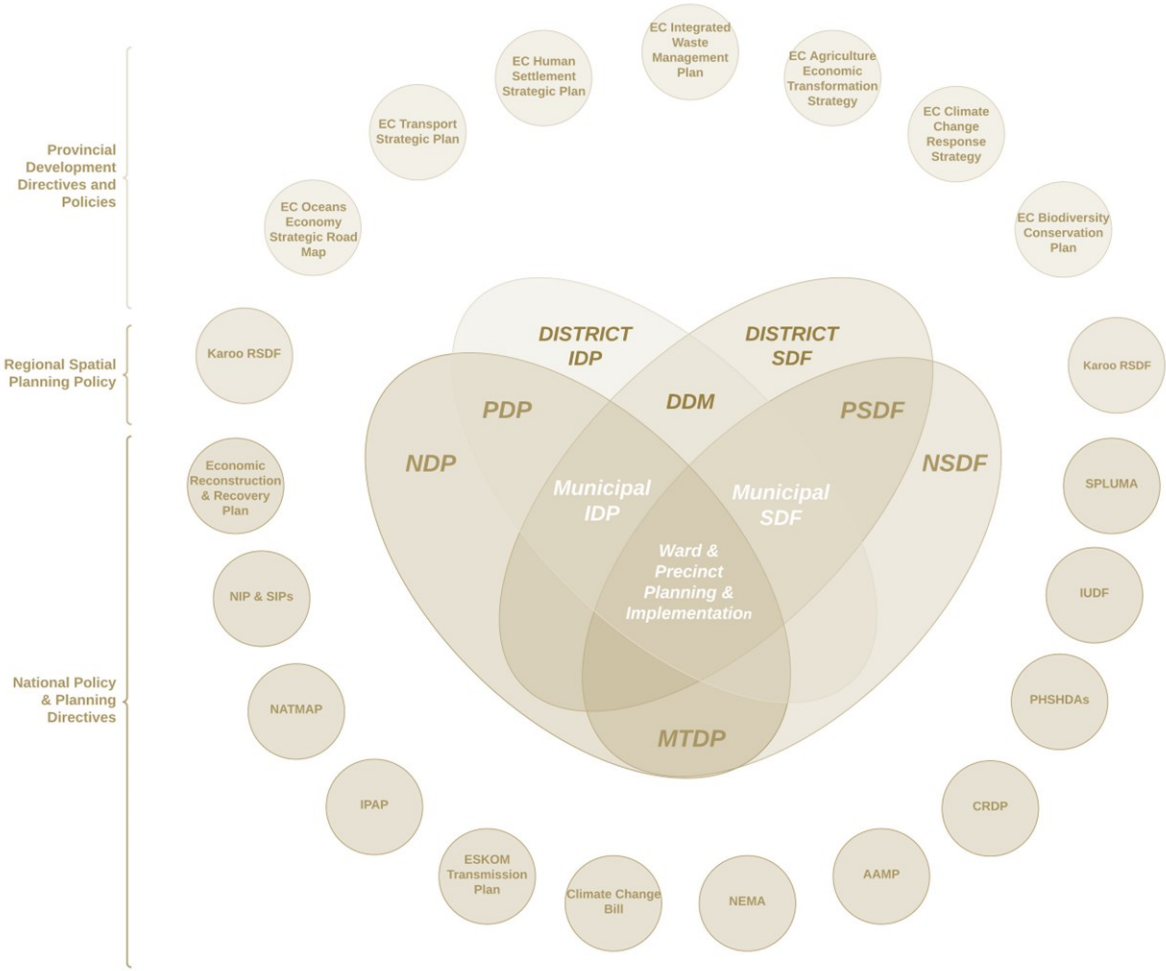


Table 1: Broad Directive Implications on the Dr Beyers Naude SDF

Legislation/Policy	Description	Relevance to Dr. Beyers Naudé SDF
Sustainable Development Goals (SDGs)	Global goals adopted by the United Nations for sustainable development, are to be achieved by 2030.	Guides the municipality in aligning local development with global sustainability targets, particularly in environmental and social aspects.
National Medium-Term Strategic Framework (MTSF) 2019-2024	A five-year plan of government to implement the National Development Plan (NDP) Vision 2030.	The SDF must align with the MTSF priorities, particularly in spatial integration, human settlements, and local government focus.
National Spatial Development Perspective (NSDP)	An indicative tool for development planning in government, focusing on coordinating government action and aligning spatial planning.	Provides spatial guidelines to ensure that the SDF aligns with national spatial development goals and maximizes economic and social impact.
National Development Plan (NDP) Vision 2030	A comprehensive plan to eliminate poverty and reduce inequality by 2030 through inclusive development and infrastructure investment.	The SDF must align with the NDP's vision, ensuring that spatial planning supports long-term national development goals.
Eastern Cape Vision 2030	The provincial vision and long-term plan for the Eastern Cape, guiding development priorities from 2015-2030.	The SDF must reflect the priorities of redistributive and inclusive economic development, quality health, education, and vibrant communities.
Provincial Medium-Term Strategic Framework (P-MTSF) Priorities	A provincial-level plan aligned with the National MTSF, setting out priorities for 2019-2024.	The SDF should incorporate these provincial priorities, particularly in spatial integration, economic transformation, and capable institutions.
Local Government Back to Basics Strategy	A national initiative ensuring municipalities perform their core mandate of delivering basic services, based on principles like community engagement, good governance, and sound financial management.	The SDF must support these principles, ensuring spatial planning contributes to effective service delivery, community involvement, and governance in the municipality.
Integrated Urban Development Framework (IUDF)	National initiatives such as the small-town regeneration strategy stem from IUDF to revitalise rural towns.	Graaff-Reinet and Aberdeen have been classified as Priority Level 1 towns whereas Janesville has been identified as Priority Level 3.
Provincial Priorities	Principles guiding the provincial development plan, emphasizing social, economic, and spatial justice, gender equality, citizen participation, and accountability.	The SDF should incorporate these principles, ensuring that spatial planning promotes equitable and sustainable development in the municipality.
District Perspective - Sarah Baartman District Municipality	The district municipality focuses on integrated development, sector alignment, and capacity building for local municipalities within its jurisdiction.	The SDF must align with the district's strategies, ensuring integration with the district's development processes and priorities.
National Spatial Development Framework (NSDF), 2022	The NSDF serves as a strategic blueprint for nationwide spatial development, aiming to stimulate fair and sustainable growth, redress	The SDF must align with the NSDF to ensure that spatial planning supports national goals such as spatial transformation, integrated planning,

Legislation/Policy	Description	Relevance to Dr. Beyers Naudé SDF
	spatial imbalances, and encourage cohesive spatial planning and development practices.	environmental sustainability, and social inclusion.
Eastern Cape Spatial Development Framework (EC-SDF)	The EC-SDF provides a long-term vision and strategy for spatial development in the Eastern Cape, emphasizing sustainable, inclusive, and balanced development.	The SDF should incorporate the principles and objectives of the EC-SDF, ensuring alignment with provincial spatial planning and development priorities.
Eastern Cape Biodiversity and Conservation Plan (ECBCP)	The ECBCP outlines a vision and framework for the conservation and sustainable utilization of biodiversity in the Eastern Cape, identifying key biodiversity hotspots and addressing potential threats.	The SDF should consider the ECBCP's objectives, ensuring that spatial planning supports biodiversity conservation and sustainable land use practices.
Eastern Cape Sustainable Development Goals Framework	The Eastern Cape Provincial SDGs Framework aligns the development priorities of the province with the 17 SDGs, focusing on poverty eradication, quality education, health and well-being, gender equality, and environmental sustainability.	The SDF should integrate the strategic objectives of the SDGs Framework, promoting sustainable and inclusive development within the municipality.
Karoo Regional Spatial Development Framework (KRSDF)	Spatial Framework developed to coordinate the development of rural settlements located within the Karoo.	The SDF must align with the KRSDF development strategies to give effect to the development proposals situated within the BNLM jurisdictional area.

1.1 NATIONAL DIRECTIVE IMPLICATIONS

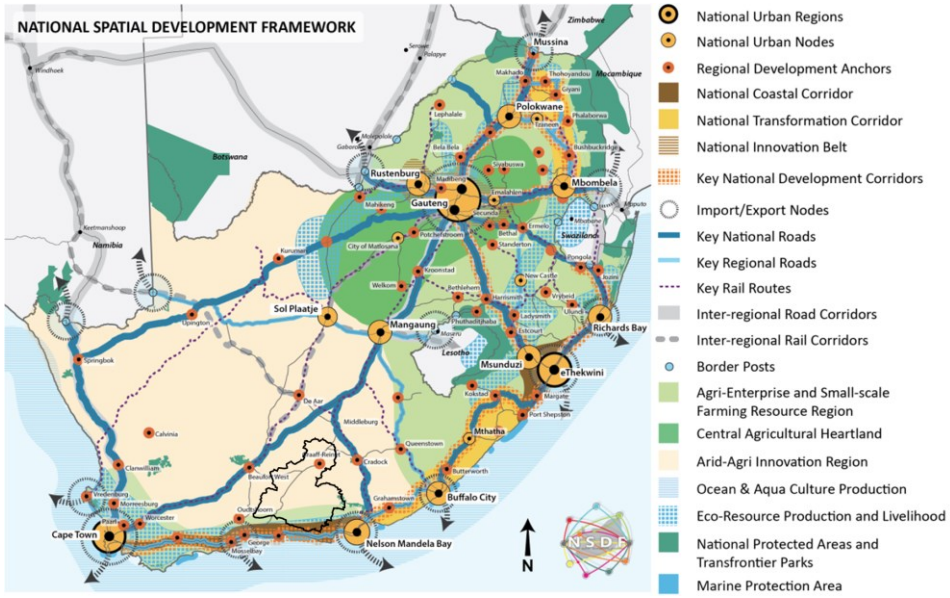


Figure 2: Alignment and Directives from the NSDF, 2020

The Dr Beyers Naudé Local Municipality, located in the Arid Innovation Region, aligns its Spatial Development Framework (SDF) with national directives outlined in the National Spatial Development Framework (NSDF). As Graaff-Reinet is identified as a Regional Growth Development Anchor, the SDF focuses on promoting **regional adaptation, economic diversification, and large-scale agri-innovation to enhance resilience**. It also emphasises compact settlement development around social service nodes and existing regional anchors, rather than expanding new settlements in arid areas.

The SDF advocates for collaborative spatial planning across regional, provincial, and municipal boundaries and the establishment of growth compacts involving all key stakeholders, including government and communities. Additionally, it encourages isolated towns and villages to become self-sufficient in water, electricity, and food production, while

enhancing ICT infrastructure to support distance learning and access to social services and economic opportunities.

1.2 REGIONAL AND CROSS-BOUNDARY DIRECTIVE IMPLICATIONS

1.2.1 KAROO REGIONAL SPATIAL DEVELOPMENT FRAMEWORK

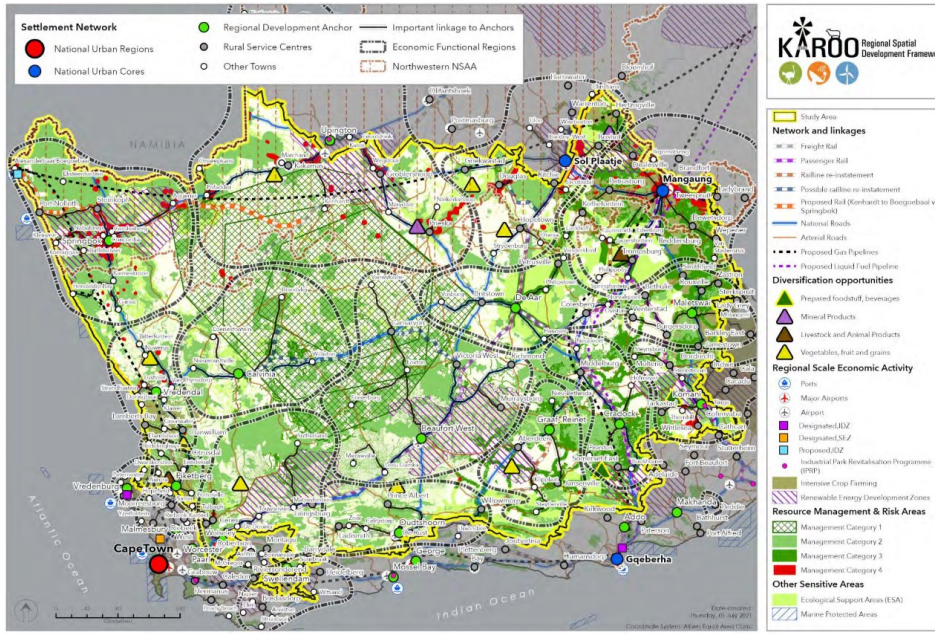


Figure 3: Alignment and Directives from the Karoo Regional SDF

Key observations from the Karoo Regional Spatial Development Framework (Karoo RSDF) relevant to the Dr Beyers Naudé Local Municipality include its incorporation into the Graaff-Reinet Functional Region, excluding Willowmore, which is part of the Oudtshoorn Functional Region. A significant Renewable Energy Development Zone is identified to the south of Aberdeen, highlighting opportunities for energy investments in the area. Additionally, diversification opportunities in agriculture are emphasized, particularly in vegetable, fruit, and grain production south of Aberdeen, alongside support for Karoo Lamb production. The framework underscores the importance of managing key resource and risk areas, especially in the northern and southern parts of the municipality.

The Karoo RSDF identifies four regional development pillars: the Natural Resource Base, Human Resource Base, Movement Infrastructure and Connectivity Base, and Institutional and Government Services Base. These pillars guide a compatible approach to agricultural planning, including the establishment of agricultural nodes, such as Agri Parks, and specific typologies for production areas. Spatial targeting for investment focuses on supporting mining and beneficiation, enhancing educational opportunities, diversifying agriculture, developing tourism nodes or gateways, and prioritizing the reinstatement of the railway line to improve freight and public transportation.

1.3 DISTRICT DIRECTIVE IMPLICAITONS

1.3.1 DRAFT SARAH BAARTMAN SPATIAL DEVELOPMENT FRAMEWORK

The Draft Sarah Baartman SDF consists of a set of drivers aimed at stimulating sustainable development within the district. The below figure provides an outline of the strategic approach of the DSDF.

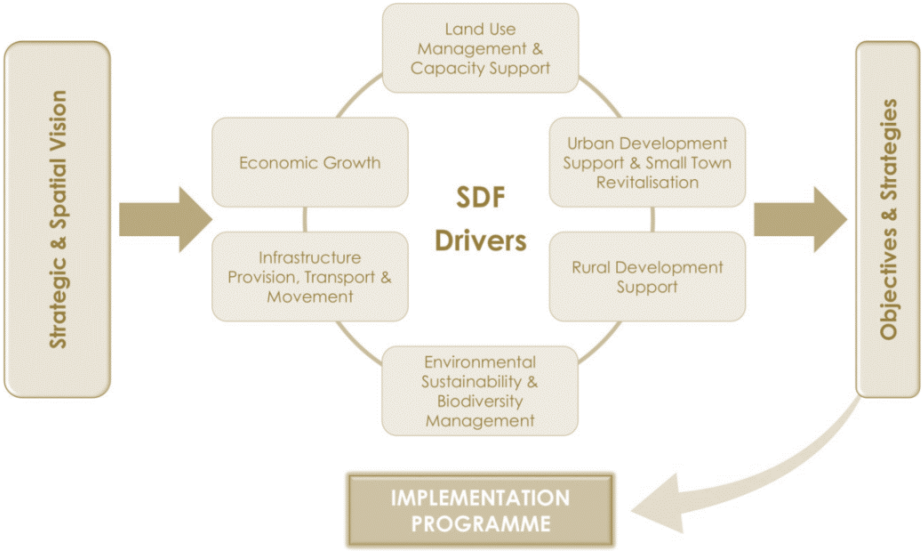


Figure 4: Draft Sarah Baartman SDF Strategic Approach

The main component to take note of in the draft DSDF, is the identification of Graaff-Reinet as a District Centre, as indicated by the figure below. This will have a direct impact on the proposals to ensure growth around the node is promoted in support of the DSDF proposal.

Furthermore, the Dr Beyers Naude municipality falls within Functional Region 1, indicating coordination between Dr Beyers Naude and Blue Crane Route municipalities must be strengthened.

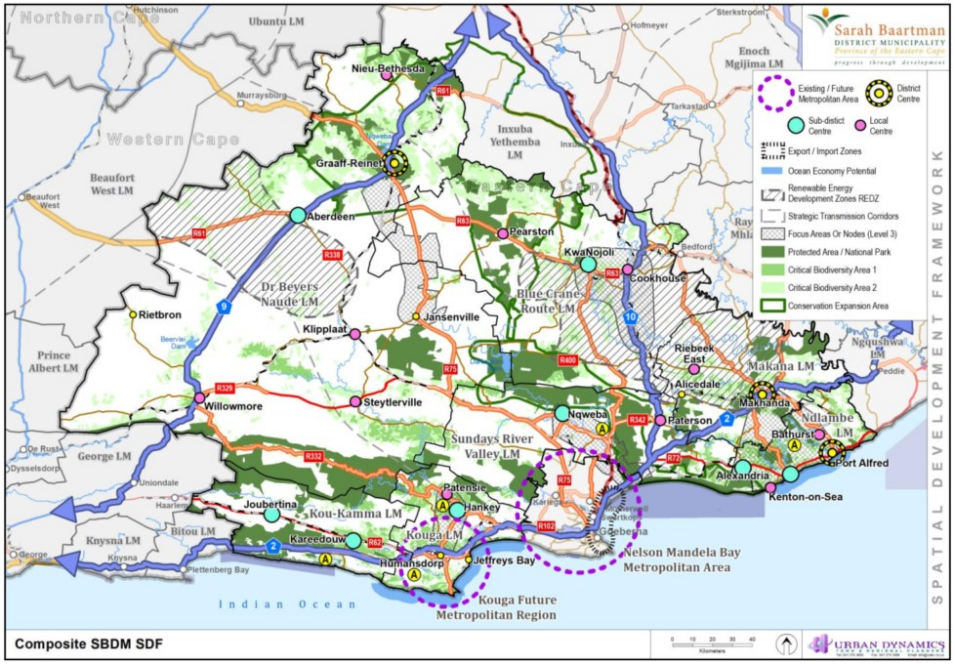


Figure 5: Draft Sarah Baartman SDF Composite Map

1.3.2 SARAH BAARTMAN ONE PLAN (DISTRICT DEVELOPMENT MODEL)

The Sarah Baartman District Municipality DDM One Plan aims to implement the District Development Model (DDM) to enhance service delivery and development impact through integrated planning, budgeting, and execution by all government levels in collaboration with stakeholders and communities. It seeks to align and synergise key national and provincial policies, such as the National Development Plan (NDP) and Integrated Urban Development Framework (IUDF), with the district's socio-economic and spatial development goals. The plan provides a unified approach to these priorities through a Long-Term Strategic Framework, ensuring coherent governance and financial management, fostering an investment-friendly environment, and tracking performance and spending to meet the district's shared vision for future development.

The DDM One Plan is grounded in a Theory of Change with six transformation focal areas: People Development and Demographics, Economic Positioning, Spatial Restructuring and Environmental Sustainability, Infrastructure Engineering, Integrated Services Provisioning, and Governance and Management. These areas aim to improve the quality of life, attract investment, create jobs, and establish sustainable and integrated human settlements. The plan emphasises holistic service delivery, efficient infrastructure investment, and effective governance to achieve the district's socio-economic and spatial transformation goals. The following table provides a summary of the DDM Focal Areas.

Table 2: Sarah Baartman One Plan Focal Area Summary

Sarah Baartman DDM Focal Areas	Description
People Development and Demographics	Aims to improve quality of life through understanding population dynamics and integrating skills development with economic, spatial, and governance transformations.
Economic Positioning	Focuses on creating a competitive, inclusive economy to attract investment and create jobs, informing sustainable spatial restructuring.
Spatial Restructuring and Environmental Sustainability	Develop efficient, sustainable spatial patterns to support a competitive economy and integrated human settlements, guiding infrastructure investment.
Infrastructure Engineering	Plans and invests in essential infrastructure to support economic needs and sustainable, integrated human settlements.
Integrated Services Provisioning	Delivers comprehensive human settlement, municipal, and community services in partnership with communities, transforming spatial patterns for sustainable settlements.
Governance and Management	Ensures effective, transparent planning and management to achieve spatial transformation goals through land development, management, and public land release.

1.3.3 SARAH BAARTMAN DISTRICT RURAL DEVELOPMENT PLAN

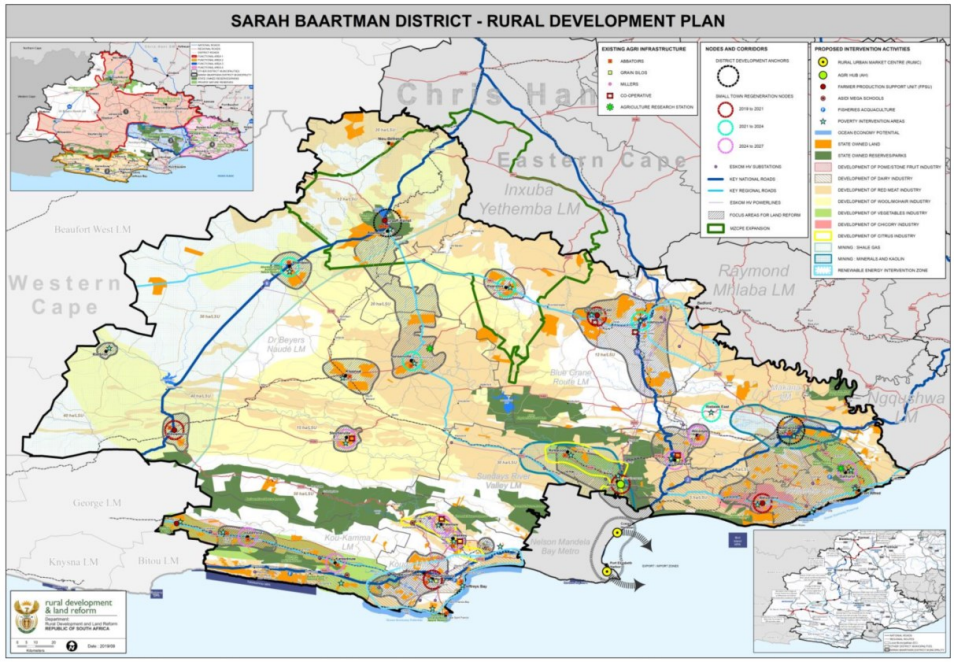


Figure 6: Sarah Baartman Rural Development Plan

The primary focus of this project is land reform, agrarian reform, and food security. Below is a breakdown of the key interventions, their spatial context, and the expected impact on the Spatial Development Framework (SDF):

1.3.3.1 LAND ACQUISITION FOR LAND REFORM (GRAAFF-REINET TO JANSENVILLE CORRIDOR)

Description: This initiative focuses on acquiring land between Graaff-Reinet and Jansenville to improve land distribution for agricultural purposes.

Impact on SDF: The establishment of an agricultural corridor will improve connectivity between key towns, enhancing economic growth through expanded agricultural opportunities and rural development. This also opens new opportunities for emerging farmers and land reform beneficiaries to participate in large-scale farming.

1.3.3.2 FARM STAY TOURISM AND GAME FARMING

Description: There is an exploration of using land for farm stay tourism and game farming, emphasizing eco-tourism and sustainable land use.

Impact on SDF: This would diversify the local economy, integrating tourism and conservation into traditional agricultural land use. Promoting eco-tourism would enhance the region's natural attractions, thus driving infrastructure development, including improved road networks and services for tourists.

Figure 7: Rural Development Strategic Interventions for Dr Beyers Naude Municipality

1.3.3.3 ACQUIRING LAND FOR SMALL-SCALE COMMUNAL FARMING

Description: The focus is on acquiring land specifically for small-scale communal farming.

Impact on SDF: The introduction of small-scale farming areas would encourage a more equitable land-use pattern. This intervention could require updates to zoning regulations, facilitating the development of communal farming clusters and supporting infrastructure such as markets, transportation, and water access.

1.3.3.4 LAND ACQUISITION FOR MOHAIR, WOOL, AND RED MEAT PRODUCTION

Description: Several areas are targeted for acquiring land for specialized farming, particularly mohair, wool, and red meat production.

Impact on SDF: These areas will be designated for specialized agricultural industries, encouraging the development of processing facilities, cold storage, and transport logistics to support these industries. The creation of such agribusiness hubs would also have ripple effects, such as employment creation and rural infrastructure development.

1.3.3.5 COMMUNITY-BASED ECO-TOURISM FARMS

Description: Development of farms that focus on community-based eco-tourism, integrating farming with environmental conservation.

Impact on SDF: The incorporation of eco-tourism farms will require policies that support environmental protection while enabling sustainable economic development. This would also enhance land-use integration by combining tourism, agriculture, and conservation practices. Infrastructure to support eco-tourism, such as access roads and services, would need to be Prioritised.

1.3.3.6 COMMUNITY GARDENS DEVELOPMENT (ABERDEEN, JANSENVILLE, KLIPPLAAT, AND NIEU BETHESDA)

Description: There is a strategic focus on developing community gardens in key settlements to promote local food security.

Impact on SDF: The community gardens will contribute to urban agriculture, encouraging self-sufficiency and reducing the need for food imports. The SDF will need to consider allocating more space within urban areas for these gardens and ensuring they have adequate water and soil resources. This will improve the resilience of smaller towns in terms of food production.

1.3.3.7 REVIVING FARMS FOR RED MEAT PRODUCTION AND CROP FARMING

Description: The revival of underutilized or abandoned farms for red meat production and crop farming, with a focus on genetic development and feed lots.

Impact on SDF: This approach supports the intensification of agricultural production in specific zones, requiring zoning changes to allow for large-scale commercial farming activities. The revival of farms will also necessitate improved infrastructure such as irrigation, roads, and energy supply to sustain the increased agricultural activity.

1.3.4 NEIGHBOURING SDF SPATIAL ELEMENTS AND TRENDS

Various spatial elements in the region have cross-boundary implications that require cooperation and alignment between the affected municipalities. The table below indicates the spatial concepts and elements of the neighbouring municipalities that have spatial implications for the Dr Beyers Naude Municipality.

Table 3: Regional spatial elements & trends

Spatial Element/Trend	Sarah Baartman DM	Garden Route DM	Central Karoo DM	Blue Crane Route	Inxuba Yethemba	Kouga	Koukamma	Sundays River Valley
N9 Corridor Development & Tourism route	◇	◇			◇			
R75 and R63 Regional Corridor	◇		◇	◇				
Support small-town revitalisation in areas of the highest return.	◇							
R332 Grootrivier Poort Tourism Route	◇					◇		
Graaff-Reinet District Centre & Tourism Node	◇							
Baviaans Mega Reserve (Planning domain & conservation area)	◇					◇	◇	
Renewable energy generation	◇		◇			◇		
Nqweba Dam Water Scheme Area	◇							
Eco-tourism support (Game Farming and Nature Reserves)	◇							
Gamtoos Irrigation Board -Kouga Dam	◇					◇		
Lower Sundays River Water User Association - Darlington Dam	◇							◇
Protect high-potential agricultural land (Livestock)	◇			◇				◇
Conservation and Rural Development Protected Area	◇	◇	◇	◇	◇	◇	◇	◇
Orange Fish Water Scheme	◇			◇				◇

1.3.5 LOCAL POLICY & LEGISLATIVE LANDSCAPE

Various sector policies, plans and bylaws guide the implementation and spatial manifestation of development within the municipal area of the Dr Beyers Naude Local Municipality. The table below, extracted from the 2024/2025 IDP provides a summary of the local policy and legislative landscape.

Table 4: Purpose and Status of Local Sector Plans and Bylaws

Sector Plan	Purpose Of the Plan	Status of the Plan
Local Economic Development Strategy (LED)	Strategy to create an enabling and conducive environment for all stakeholders to stimulate economic growth and create decent job opportunities.	The strategy was developed and adopted by the council in July 2022.
Human Settlement Plan	To prioritise the housing needs in the municipality and coordinate the implementation of different housing options in line with the National and Provincial Housing Policy.	The municipality was waiting for feedback on a funding application that was made.
Performance Management Policy Framework	Establishing a culture of performance throughout the whole organization.	The policy is in place and was adopted by the council.
Communication Strategy	To develop an approach of continued interaction and communication between the municipality and a wide range of internal and external stakeholders.	Adopted by the council in July 2023.
Integrated HIV/Aids Plan	To facilitate awareness and proactive strategies to combat HIV/AIDS and provide support to people infected and affected by HIV/AIDS.	Draft
Employment Equity Plan	To ensure that targets are being set for the transformation of the staff structure of the municipality to reflect the demographic composition of the area.	The 5-year plan is in place and reviewed annually.
Workplace Skills Plan	Coordinate training and capacity building of municipal staff as per their career objectives. To plan, budget, and implement staff training activities.	The Annual Training Report and Workplace Skills Plan are submitted to the LGSETA annually.
Public Participation Policy	To facilitate democracy by enabling broad but structured community and sector participation in council affairs.	The policy is in place and was adopted in July 2022.
Water And Sewer Master Plan	Determine the future capacity of adequate sustainable water sources and the capacity of the sewer reticulation system to accommodate future development.	The municipality already received funding to appoint a service provider to assist in developing this plan.
Water Services Development Plan	To coordinate the provision and demand of bulk potable water to different consumers in the municipality.	Approved in March 2024.
Integrated Waste Management Plan	To integrate and optimize waste management, maximize efficiency minimize associated environmental impacts and financial costs, and improve the quality of life for all residents in the municipality.	The service provider tasked with this plan is consolidating the inputs for the final plan.
Storm Water Master Plan	To map out a 5-year master plan to implement stormwater networks in Dr Beyers Naudé Municipality and to maintain the existing stormwater infrastructure.	The municipality is seeking funding to develop the plan.
Integrated Transport Plan	Coordinate the priorities for transport and traffic patterns in the municipality and ensure that provision is made for infrastructure for public transport.	Developed by Sarah Baartman District Municipality, to be reviewed.
Disaster Management Plan	A plan to proactively identify risks and prevent disasters from happening or minimize the impact	The plan is in place and there is a disaster management officer

Sector Plan	Purpose Of the Plan	Status of the Plan
	of such disasters if they cannot be avoided.	at our satellite office in Jansenville.
Bylaw	**Purpose Of Bylaw**	**Status Of The Bylaw**
Prevention Of Public Nuisances And Keeping Of Animals	Regulates public behaviour and the management of animals to prevent nuisances and ensure community safety and hygiene	Approved
Standing Rules Of Order	Establishes procedures and rules for the conduct of meetings within the municipal council to ensure orderly and effective decision-making.	Approved
Water And Sanitation	Governs the provision, use, and management of water and sanitation services to ensure public health and environmental protection.	Approved
Community Fire Safety	Sets standards and regulations to prevent and manage fires, ensuring the safety of the community and protecting property.	Approved
Commonage	Regulates the use and management of municipal common land to ensure it is used sustainably and equitably by the community.	Approved
Aerodrome	Provides rules and guidelines for the operation and management of municipal aerodromes to ensure safety, security, and efficient use of aviation facilities.	Approved

CONCEPTUAL VISION

2 VISION STATEMENT

Spatial Vision Statement for the Dr Beyers Naudé Local Municipality's Spatial Development Framework (SDF):

"To create a spatially integrated and inclusive municipality that offers a safe, sustainable, and vibrant environment for all residents to thrive. Through innovative planning and proactive service delivery, we aim to enhance the quality of life, promote economic growth, and preserve our rich cultural and natural heritage. We will ensure equitable access to services, opportunities, and infrastructure, fostering a cohesive community that embraces unity, respect, and continuous improvement."

Figure 8: Dr Beyers Naude's Spatial Vision

2.1 KEY SPATIAL DIRECTIVES:

The Dr Beyers Naudé Local Municipality is a region rich in ecological, cultural, and historical assets, presenting a wide range of opportunities for sustainable development. Key priorities include the expansion of protected ecological areas to preserve biodiversity, the enhancement of agricultural practices with a focus on local products like Karoo Lamb, and the promotion of renewable energy in off-grid areas. Tourism remains a critical economic driver, with a focus on leveraging the area's unique cultural heritage, natural landscapes, and eco-tourism potential. Strategic infrastructure improvements, such as upgrading road networks and public transportation, aim to improve regional connectivity, while urban regeneration efforts seek to revitalize key towns, fostering economic growth and enhancing the quality of life for residents. Cross-boundary cooperation and the preservation of the region's distinct architectural heritage further strengthen the municipality's position as a vibrant and sustainable area for future development.

Key Considerations for Dr Beyers Naudé Local Municipality

Figure 9: Proposed Conceptual Vision Statement for Dr Beyers Naude

- Expand protected areas and strengthen ecological corridors to preserve biodiversity and promote environmental sustainability.
- Upgrade and preserve towns rich in cultural heritage to boost tourism as a key economic driver.
- Enhance road networks to improve regional connectivity between the Northern, Western, and Eastern Cape provinces.
- Diversify agriculture, focusing on regional products like Karoo Lamb, to ensure sustainability and economic growth.
- Promote renewable energy initiatives and support off-grid development in smaller towns like Klipplaat and Nieu Bethesda.
- Expand eco-tourism, particularly in areas like Baviaanskloof, to leverage natural assets for sustainable tourism growth.
- Improve public transport between towns to reduce costs and improve accessibility.
- Enhance tourism signage along main routes to attract visitors and unlock local tourism potential.
- Support urban regeneration in towns like Graaff-Reinet, Jansenville, Aberdeen, and Willowmore to attract investment and improve liveability.
- Promote regional cooperation and economic integration through cross-boundary movement and development.
- Protect and promote Karoo's architectural style, preserving the region's unique sense of place and historical identity.

SPATIAL PROPOSALS

3 REGIONAL PROPOSALS

3.1 KEY CONCEPTS

3.1.1 STRATEGIC PLANNING MECHANISMS

3.1.1.1 LEVER

A development lever refers to a strategic approach or instrument used to influence and guide spatial development within a specific area or region. These levers are designed to catalyse and direct development initiatives, ensuring that they align with overarching goals and objectives outlined in the SDF. Development levers may include policies, regulations, incentives, investment strategies, infrastructure projects, and other interventions aimed at shaping land use patterns, promoting sustainable growth, enhancing liveability, and fostering economic vitality.

3.1.1.2 DRIVER

A Development Driver refers to a fundamental force or factor that propels and influences spatial development within a particular area or region. These drivers are typically underlying economic, social, environmental, or technological trends, conditions, or opportunities that shape development outcomes and trajectories. Examples of development drivers may include population growth, economic trends, technological advancements, transportation infrastructure, natural resource availability, and policy initiatives. Development drivers serve as essential considerations in guiding spatial planning and decision-making processes.

3.1.1.3 ACTION AREA

Action areas signify specific geographic zones or sectors within an SDF where targeted interventions and initiatives are required to achieve desired development outcomes. Action areas are identified based on various factors such as existing challenges, development needs, opportunities for improvement, and strategic priorities outlined in the planning framework.

Within action areas, it's essential to establish clear objectives, goals, and strategies tailored to address the unique characteristics and requirements of each zone.

Effective coordination, collaboration, and stakeholder engagement are vital in implementing actions within these areas. By mobilizing resources, expertise, and support from relevant stakeholders, including government agencies, private sector entities, community organizations, and residents, planners can enhance the impact and effectiveness of interventions within action areas, thereby advancing the overall goals of the spatial planning framework.

3.1.2 SPATIAL STRUCTURING ELEMENTS

3.1.2.1 CORRIDORS

Corridors are identified as key linear like spatial focus areas designated for concentrated spatial development activities. They play a pivotal role in guiding and organising development projects, infrastructure, and services along specific routes within the municipality. By emphasizing corridors as focus areas, planners can efficiently allocate resources and manage growth while promoting connectivity and sustainability within the region.

3.1.2.2 ZONES

Development zones refer to specific areas within the municipality designated for concentrated development activities (non-linear like). These zones are structural elements in spatial planning that serve as focal points for economic, environmental, tourism, social, and infrastructural growth. They are carefully demarcated to facilitate efficient land use, investment, and the provision of services and amenities.

3.1.2.3 NODES

Within the broader regional context, nodes assume crucial roles in spatial organisation and development. These points serve as pivotal hubs for diverse functions including agriculture, tourism, coastal activities, fishing, administration, and rural services. Their importance is underscored by factors like population density, economic viability, transportation networks, and access to resources and amenities. Regional planning endeavours to identify and fortify these nodes, aiming to foster balanced development, optimise resource distribution, and ensure sustainable regional cohesion.

"Integrating corridors, nodes, and zones into spatial planning initiatives enhances the effectiveness of development levers, addresses key drivers, and implements targeted action areas to achieve sustainable and inclusive growth."

3.2 LEVER 1: CONNECTIVITY & ACCESSIBILITY

Drivers: Accessibility, economic development and trade, urbanisation, economic supporting infrastructure, and technological advancements.

3.2.1 ACTION AREAS:

- **Infrastructure Development:** Upgrade and expand road networks, bridges, and public transportation systems.
- **Transport Planning:** Develop strategies to optimise transportation networks and improve accessibility for all residents.
- **Digital Connectivity:** Enhance broadband infrastructure to ensure reliable internet access across the municipality.
- **Public Transport:** Develop effective and reliable public transport systems to provide affordable and safe transport for residents.
- **Non-motorised Transport (NMT):** Encouraging NMT infrastructure development in all settlements to allow cycling and walking as a safe and viable option within urban areas.

3.2.2 SPATIAL STRUCTURING ELEMENTS:

- **Corridors:** Upgrade key regional transportation corridors linking urban centres, tourism sites and destinations, industrial zones, and residential areas.
- **Nodes:** Develop transportation hubs at strategic locations along major corridors to facilitate intermodal connectivity.
- **Zones:** Designate transit-oriented development zones around transportation nodes to encourage mixed-use development and maximise accessibility.

3.2.3 KEY INITIATIVES AND PROJECTS:

3.2.3.1 ROAD INFRASTRUCTURE AND CONNECTIVITY ENHANCEMENTS

- **Regional Road Upgrades:** Upgrade the gravel road linking Nieu-Bethesda to the N9 National Road to improve access to tourism activities in Nieu-Bethesda and ease travel for residents to other urban centres.
- **R75 maintenance:** Ensure regular maintenance takes place on the R75 route linking Graaff-Reinet with Gqeberha, as it's a key trade route.
- **R329 Upgrade:** Upgrade the single-carriage concrete road section of the R329 and maintain the tarred section linking it with the R75 towards the east. This route will form an east-west corridor adjacent to the Baviaanskloof Mega Reserve, enhancing travel options for communities and tourists in the Baviaans, Willowmore, and Steytlerville regions.
- **Priority Road Maintenance:** Maintain critical routes including R337, R375, R338, R61, R332, R63, R306, and R407, which are essential for tourism and connectivity between smaller towns and main nodes.
- **Key Gravel Route Maintenance:** Ensure consistent maintenance of key gravel roads to support the agricultural sector and tourism, particularly around rural towns like Nieu-Bethesda, Willowmore, and Steytlerville.
- **Low-Water Bridges:** Maintain and repair low-water bridges to improve connectivity between rural areas.
- **Rural Service Accessibility:** Upgrade gravel roads between rural and urban areas to increase accessibility for disadvantaged rural communities and Rural Service Centres.
- **New Transport Routes:** Investigate additional public transport options to improve local and regional accessibility, ensuring regular maintenance on gravel roads, especially where scholar transport is required.
- **Corridor Access Improvements:** Construct and/or rehabilitate feeder roads to facilitate access to major transport corridors, enhancing overall connectivity.

3.2.3.2 PUBLIC TRANSPORT AND INTERMODAL FACILITIES

- **Graaff-Reinet Transport Hub:** Develop a large intermodal transport facility in Graaff-Reinet to integrate various transport modes, supporting efficient and accessible travel options.

- **Public Transport Infrastructure:** Upgrade main regional taxi ranks to improve regional accessibility, with facilities designed to accommodate multiple transportation modes (e.g., buses).
- **Tourist Shuttles:** Promote shuttle services between Graaff-Reinet and Willowmore to enhance tourism distribution within the municipality and foster collaboration between Camdeboo and Baviaans National Parks.
- **Sanitation Facilities:** Ensure placement and maintenance of ablution facilities at transportation hubs, including bus stops and taxi ranks, to support commuter comfort.
- **Non-Motorized Transport (NMT):** Encourage the inclusion of NMT options such as cycling and walking paths in new developments to promote alternative transportation choices and reduce reliance on motor vehicles.
- **Isolated Area Connectivity**: Improve connectivity within towns and townships by focusing on pedestrian, cycling, and public transport routes.

3.2.3.3 ICT AND DIGITAL ACCESS

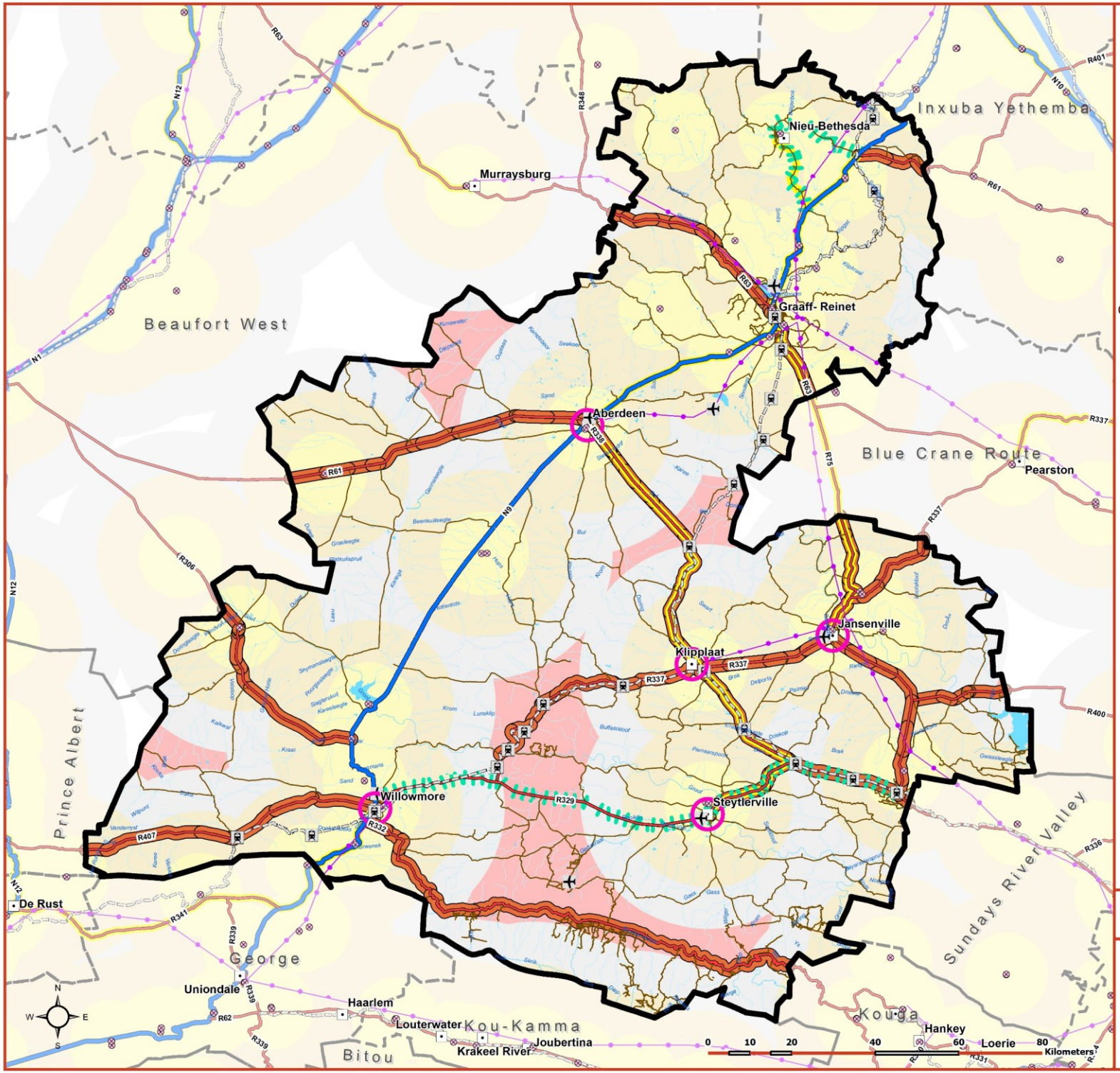
- **Wi-Fi Towers**: Develop Wi-Fi towers in Priority ICT Investment Zones (Aberdeen, Jansenville, Klipplaat, Steytlerville, and Willowmore) to provide free basic internet access for business and educational purposes.
- **Cell Tower Development:** Promote cell tower development along key routes (N9, R61, R337, R338, R306) to improve coverage, facilitating timely reporting and responses to traffic incidents and disaster events.
- **E-Centres:** Transform libraries in Priority ICT Investment Zones into E-Centres with robust internet and technology access. These centres will offer opportunities related to the Fourth Industrial Revolution, digital literacy workshops, and job training, and serve as community hubs for youth and entrepreneurs.

3.2.3.4 TOURISM AND ECONOMIC DEVELOPMENT

- **Tourism Gateways:** Develop tourism gateways in Willowmore and Graaff-Reinet to inform visitors of routes and activities, enhancing tourism awareness and engagement.
- **Public Transport for Tourism:** Improve public transport options for tourists by establishing shuttle services and ensuring accessible infrastructure around tourism nodes.
- **Railway Revitalization:** Revitalize existing railway lines to support freight services across the Eastern Cape, Western Cape, and Free State and promote tourism activities along these routes.
- **Strategic Economic Consolidation:** Strengthen economic activity by consolidating development within strategic corridors, particularly in towns along the N9, fostering sustainable growth in urban areas and nodes.

3.2.3.5 INTERGOVERNMENTAL AND POLICY COORDINATION

- **Transport Infrastructure Cooperation:** Foster intergovernmental cooperation across government spheres to facilitate transport infrastructure development and maintenance.
- **Corridor Development:** Support economic and infrastructure development in strategic corridors, aligning with urban planning objectives to strengthen key growth areas and enhance regional accessibility.



Regional Spatial Strategy: Connectivity & Accessibility

- Priority ICT Investment Zones
- Airstrip or Helipads
- Cellphone Towers
- Railway Stations
- Broadband Network
- Important Linkage to Anchors
- Road Maintenence
- National Road
- Main / Provincial Road
- NSDF Key National Roads
- Railway Network
- Road Upgrade
- Cellphone Towers 10km Buffer
- CellphoneTowers 20km Buffer
- Cellphone Towers 30km Buffer
- No Cellphone Coverage

Source: Beyers Naude LM, Karoo RSDF, NSDF 2023

CITEPLAN
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DR BEYERS NAUDE MUNICIPAL SPATIAL DEVELOPMENT FRAMEWORK

3.3 LEVER 2: KEY RESOURCE MANAGEMENT

Drivers: Economic diversification, sustainability goals, cultural preservation, protection of high potential agricultural land, biodiversity management and market demand.

3.3.1 ACTION AREAS:

- **Agricultural Innovation:** To support sustainable agriculture by advancing research and innovation, promoting conservation practices, and climate-proofing agri-processing in the Dr Beyers Naude Municipality. Furthermore, implement an integrated knowledge system for climate-smart farming techniques to enhance productivity and sustainability across all farming systems.
- **Tourism Promotion:** Develop marketing strategies and infrastructure investments to attract visitors and enhance visitor experiences.
- **Heritage Preservation:** Implement conservation programs and heritage tourism initiatives to protect cultural assets and promote local identity.
- **Transportation Integration:** Improve transportation links between resources to facilitate movement, logistics and distribution.
- **Environmental Conservation:** Developing strategies for low-carbon agriculture and economic development while promoting the protection of valuable natural environments.
- **Harnessing of renewable energy:** Support the development of renewable energy generation projects while taking into consideration the potential impact and trade-offs with agriculture, environmental and aesthetic impacts.
- Align with and support the Baviaanskloof Mega Reserve initiatives to promote ecological development corridors.

3.3.2 SPATIAL STRUCTURING ELEMENTS:

- **Corridors:** Establish scenic routes and heritage trails connecting cultural sites and natural attractions to promote tourism and heritage appreciation (e.g., the Nieu-Bethesda Access Route upgrade).
- **Corridors:** To support and protect high-potential agricultural land within the proposed agricultural corridors, primarily encompassing Protected Agricultural Areas, which form the core of the Dr Beyers Naude agricultural sector.
- **Corridors:** Support the expansion of ecological corridors such as the Eden to Addo Corridor Initiative that aims to connect the Garden Route National Park, The Baviaanskloof World Heritage Site and the Addo Elephant National Park.
- **Nodes:** Create agri-tourism nodes at the intersections of agricultural landscapes and tourist routes, offering farm-to-table experiences and accommodation options.
- **Zones:** Design heritage preservation zones in historic town centres, incentivizing adaptive reuse and restoration of heritage buildings for tourism and cultural activities.
- **Zones:** Determine the best use of land that falls within the identified Trade-Off zones where more than one suitable land use conflicts with one another.
- **Zones:** Prioritise conservation expansion within the protected area buffer zones and within the Critical Biodiversity Areas (CBAs).

3.3.3 KEY INITIATIVES AND PROJECTS:

3.3.3.1 ECOLOGICAL AND AGRICULTURAL INITIATIVES

3.3.3.1.1 RESTORE ECOLOGICAL INFRASTRUCTURE:

- Implement projects to restore wetlands, riverbanks, and other ecological infrastructures.
- Promote the protection of Protected Areas by implementing the 10km expansion buffer zones around these areas.
- Increase landscape productivity, socio-ecological resilience, and soil carbon sequestration through reforestation and sustainable land management practices.
- Increase the removal of alien plant species that pose higher fire risks and threaten water security. The municipality should form

partnerships with organisations such as Working for Water to strengthen the initiative.
- Ensure the support of local authority and national nature reserves as they play crucial roles in protecting critical biodiversity and ecosystems.
- To safeguard Nature Reserves, Protected Areas, and World Heritage Sites registered under the National Environmental Management: Protected Areas Act No. 57 of 2003, efforts should focus on minimizing the impact of adjacent land uses on these vital ecosystems.

3.3.3.1.2 COLLABORATIVE INTEGRATED CATCHMENT MANAGEMENT:

- Form partnerships for integrated catchment management to improve water security in terms of both quality and quantity.
- Create job opportunities through water management projects and conservation efforts.
- Improve the monitoring of aquifer usage to ensure the sustainable usage of groundwater. Research is also required to better understand the aquifers used by the towns and how to best protect the groundwater resources.

3.3.3.1.3 PROMOTE ENERGY EFFICIENCY AND RENEWABLE ENERGY IN AGRICULTURE:

- Develop and showcase case studies of energy-efficient and renewable energy practices in agriculture.
- Encourage local commercial farmers to transition to low-carbon agricultural methods.

3.3.3.1.4 RENEWABLE ENERGY INFRASTRUCTURE:

- Allow for the development of renewable energy infrastructure with special conditions to minimize visual impact, noise pollution, and environmental damage.
- Support renewable energy projects throughout the municipality, provided they do not conflict with high-potential agricultural land or negatively impact tourism activities.

3.3.3.1.5 INFRASTRUCTURE SUPPORT SERVICES:

- Develop infrastructure support services to unlock opportunities in agricultural value chains.
- Establish strong partnerships between subsistence farmers, emerging farmers, and the Department of Agriculture Land Reform and Rural Development (DALRRD).

3.3.3.1.6 PROTECT HIGH-VALUE AGRICULTURAL LAND:

- Prioritise the protection of high-value agricultural land, especially in the areas surrounding Aberdeen and Graaff-Reinet, to prevent destruction and disturbance.
- Implement zoning regulations and policies to safeguard these lands.

3.3.3.1.7 AGRICULTURAL DEVELOPMENT AND DIVERSIFICATION:

- Support diversification and beneficiation of agricultural products through value chain development, including distilleries.
- Develop agricultural zones focused on Agri-processing, leveraging initiatives like the FPSU's and private sector-funded Agri industries.
- Focus on land acquisition between Graaff-Reinet and Jansenville to improve land distribution for agricultural purposes through the Sarah Baartman Rural Development Plan for Land Acquisition for Land Reform.
- Encourage the development of tanning facilities, abattoirs, and related infrastructure focused on the wildlife industry within the proposed Agro-Processing region near Jansenville and Klipplaat, to strengthen and expand the game farming value chain.

3.3.3.1.8 IMPROVE AGRICULTURAL GENETICS:

- Invest in research and development for improved livestock and crop genetics to adapt to climate change.
- Provide training and support to emerging farmers located in areas prone to flooding and high-risk drought areas.

3.3.3.1.9 INFRASTRUCTURE SUPPORT SERVICES:

- Develop infrastructure support services to unlock opportunities in agricultural value chains.
- Establish strong partnerships between subsistence farmers, emerging farmers, and the Department of Agriculture Land Reform and Rural Development (DALRRD).

3.3.3.1.10 NATURE RESERVES & PROTECTED AREAS

- The Protected Areas and Nature Reserves are critical for the sustainable management of the region's environmental resources.
- The various protected areas and nature reserves not only contribute to the preservation of biodiversity and ecosystems but also support sustainable economic development. By integrating environmental sustainability into regional planning processes, the protected areas help ensure that the natural resources of the municipality and the surrounding areas are managed responsibly and effectively for the benefit of current and future generations.
- Any development near or within nature reserves must comply with the regulations outlined in the NEM:PAA and avoid negatively impacting nature reserves or other areas of critical biodiversity.
- Endorse applications for the establishment and expansion of public and private reserves within the 10km expansion buffers for protected areas.

3.3.3.2 MINERAL EXTRACTION

- Ensure the rehabilitation of abandoned mines, especially those mines without approved rehabilitation plans and those within conservation zones.
- Ensure new mining activities fall outside critical biodiversity areas have clear rehabilitation plans and limit their impact on the surrounding environments to a minimum.
- Prohibit any new mining activities inside the 10km buffer zones of the protected areas.
- Possible shale gas exploration and extraction should be closely monitored to ensure that water resources are not polluted.
- Prohibit shale gas exploration within the Protected Areas 10km buffer as well as 10km from critical biodiversity categories one and two.
- Productive agricultural land critical biodiversity and ecologically sensitive areas should be protected against any form of mineral extraction to ensure sustainable development.

3.3.3.3 TOURISM AND HERITAGE INITIATIVES

3.3.3.3.1 TOURISM DEVELOPMENT:

- Develop tourism projects that leverage the natural beauty of the Dr Beyers Naude municipality, focusing on the Karoo and mountainous regions.
- Promote adventure, heritage, agricultural, and eco-based tourism.
- Updated signs for directions to tourism facilities/attractions and public spaces are required to aid visitors on their visit to the municipality.

3.3.3.3.2 COLLABORATE WITH PRIVATE TOURISM OPERATORS:

- Form partnerships with private tourism operators to grow the local tourism industry.
- Promote the region as a key and unique destination for fauna and flora tourism in South Africa.
- Collaboration can also be supported between the tourism operators and education facilities to train new tourism guides and improve overall tourism education in the area.

3.3.3.3.3 STRENGTHEN LOCAL NATURE RESERVES:

- Support and develop tourism activities within local nature reserves to attract more visitors following an approved management plan.
- Improve direct economic participation by the poor in tourism-related activities.

3.3.3.3.4 PROMOTE TOURISM-RELATED INFRASTRUCTURE:

- Develop and enhance overnight facilities, accommodations, and tourist information centres along key routes like the N9 and routes connecting the various Tourism Nodes.
- Ensure sufficient maintenance of tourism routes such as the R337, R332 and Nieu-Bethesda access roads.
- Support tourism activities and facilities in Tourism Nodes by protecting heritage sites, providing sufficient municipal infrastructure and developing signage for tourist attractions.

3.3.3.3.5 HERITAGE PROTECTION AND PROMOTION:

- Protect heritage category A and B buildings in historic towns from demolition and modernisation.
- Prioritise the maintenance of Category A and B Heritage sites.
- Allow for internal modification and modernisation of Category C Heritage sites with the approval from the Eastern Cape Provincial Heritage Resources Authority.
- Develop heritage tourism strategies which prioritise the refurbishment and protection of heritage resources to drive tourism in the municipality.
- Ensure that all heritage sites and surrounding walkways are accessible for wheelchair users and incorporate inclusive features to accommodate tourists with different abilities.

3.3.3.3.6 CAPE FLORAL REGION WORLD HERITAGE SITE (BAVIAANSKLOOF MEGA RESERVE):

- Develop infrastructure to better connect the Cape Floral Region World Heritage site to main roads, enhancing its use as a tourism destination.
- Support and develop tourism activities within the reserve to attract more visitors following an approved management plan.
- Promote cooperation with communities, NGOs, Dr Beyers Naude Municipality and other stakeholders on initiatives such as the Eden to Addo Ecological Corridor Initiative.

3.3.3.4 TRANSPORTATION AND INFRASTRUCTURE INITIATIVES

3.3.3.4.1 ROAD MAINTENANCE AND SIGNAGE:

- Prioritise the maintenance and upgrading of road surfaces and signage along key tourist routes like the R332, R329, R337, R63, R75 and R61. The gravel roads connecting Nieu-Bethesda to the N9 and the Draaikrans gravel road between the R329 and R338 near Steytlerville are important tourism routes that also require priority maintenance through regular scraping.
- Regularly maintain and upgrade roadside picnic areas to encourage longer tourist visits.

3.3.3.4.2 SUPPORT FARM STALLS:

- Promote and support farm stalls along important tourism routes to offer local produce and unique retail opportunities to tourists.

3.3.3.4.3 RENEWABLE ENERGY DEVELOPMENT:

- Prioritise renewable energy projects in the western and central parts of the municipality to align with the National Renewable Energy Development Zone and outside of the ecological conservation zone.
- Support the development of charging stations powered by renewable energy for all modes of electric vehicles along major routes and within towns where possible.

3.3.3.4.4 ENVIRONMENTAL PROTECTION FOR LAND USE CHANGES:

- Provide special approval conditions for land-use changes that prioritise environmental protection and rehabilitation.
- Prohibit activities that could harm groundwater and surface water quality, ensuring sustainable management of water resources.

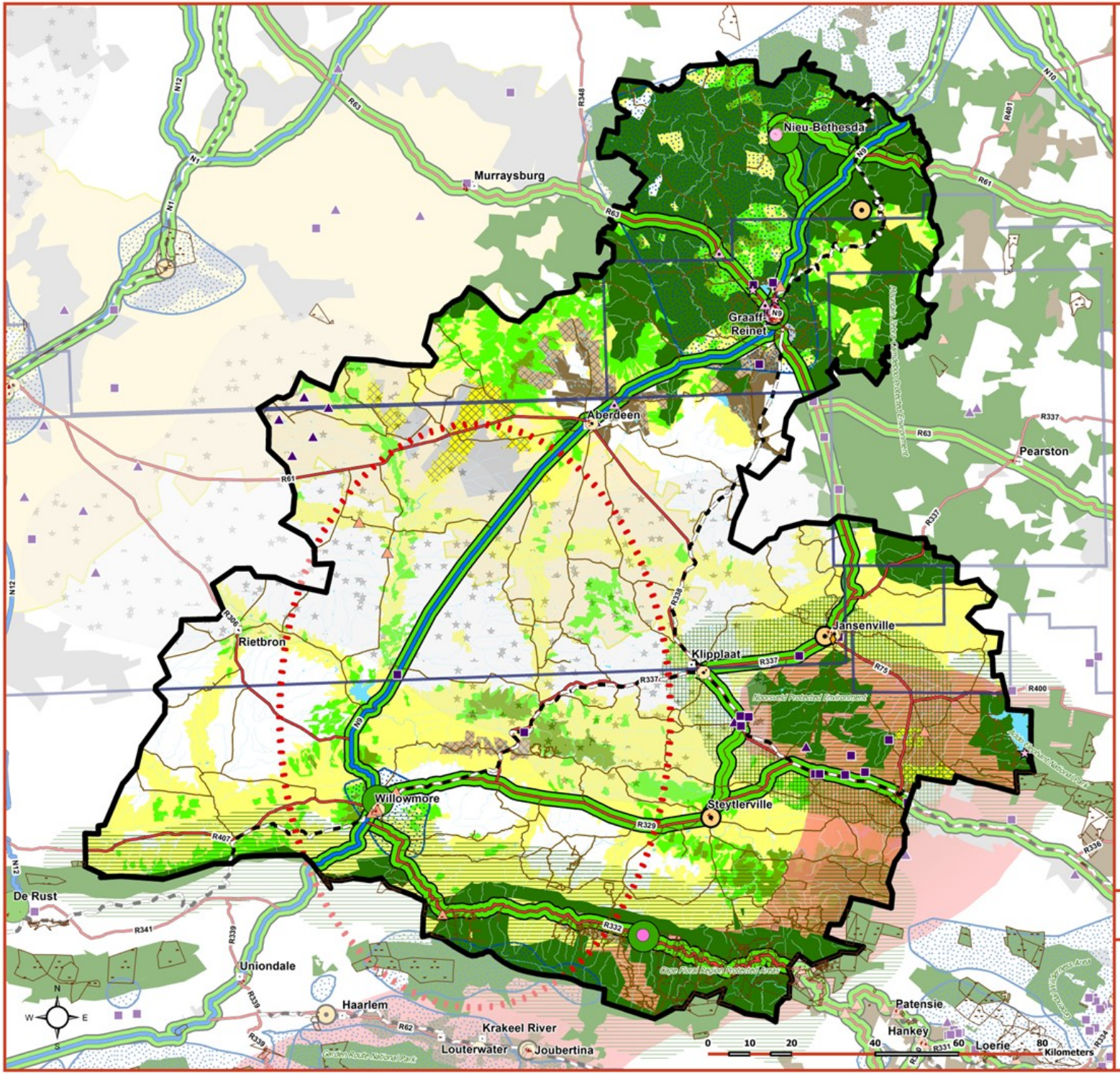
3.3.3.4.5 GAME FARMING AND ANCILLARY TOURISM:

- Allow for the development of game farming and related tourism infrastructure, ensuring it aligns with environmental sustainability goals.

- Focus on the establishment of game-orientated value chains within the dedicated agro-processing area.

3.3.3.4.6 STRENGTHEN CONSERVATION LINKAGES:

- Improve signage and tourism marketing infrastructure to strengthen conservation linkages and promote environmental awareness among visitors.



Regional Spatial Strategy: Key Resources Management

1. Tourism Resources
- Nursery
- Historical Monument
- Lodge
- Museum
- National Park
- ProvincialHeritageSite
- Tourist Information
- Tourism Nodes
- Tourism Routes
- Clear Night Skies

6. Mineral Resources
- Active & Abandoned Mines
- Granted Mining Applications
- Shale Gas Application

7. Other
- National Road
- Main / Provincial Road
- Roads
- Railway Lines
- Urban State Land
- Rural State Land

2. Conservation Resources
- Protected Areas - 10 km Expansion Buffer
- Trade-off (Eco, IPP)
- Agro Processing
- Terrestrial - Critical Biodiversity Areas 1
- Terrestrial - Critical Biodiversity Areas 2
- Terrestrial - Ecological Support Areas
- Eden to Addo Focus Corridor

3. Agricultural Support Areas
- Agricultural
- FPSU
- Agri Hubs
- Protected Agricultural Areas
- Extensive Agriculture (Low Potential)
- Trade-off Zone (Agri, Eco)
- Farm Stall
- Market / InformalMarket
- Abattoirs
- High Drought Tendency

4. Energy Resources
- Renewable Energy Development
- Renewable Energy Development Zones

5. Water Resources
- Water Resource Zones
- Wetlands

Source: Beyers Naude LM, Karoo RSDF, NSDF 2023, DALRRD

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3.4 LEVER 3: URBAN AND RURAL DEVELOPMENT

Drivers: Regional integration, socio-economic disparities, demographic shifts, rural development, urban design and urban renewal interventions and land use patterns.

3.4.1 ACTION AREAS:

- **Land Use Coordination**: Coordinate planning efforts between rural and urban areas to manage growth and preserve rural landscapes.
- **Transportation Connectivity:** Enhance transportation infrastructure to facilitate movement between rural and urban centres.
- **Economic Collaboration:** Foster partnerships between rural and urban businesses to promote value-added activities and market access.
- **Sense of Place:** Highlighting local heritage and culture, enhancing public spaces, promoting local businesses, and developing sustainable tourism initiatives to celebrate the town's unique identities.
- **Climate change response** and mitigation to areas prone to climatic disasters.

3.4.2 SPATIAL STRUCTURING ELEMENTS:

- **Corridors:** Develop multi-use green corridors linking urban green spaces, peri-urban agriculture, and rural landscapes to strengthen ecological connectivity.
- **Nodes**: Establish rural service nodes providing essential amenities and services to surrounding agricultural communities, supporting local economies, and enhancing rural-urban linkages.
- **Zones:** Create rural innovation zones to foster entrepreneurship and knowledge exchange, leveraging rural assets for economic development and diversification.
- **Zones:** Promote climate change and disaster mitigation measures in high-risk areas.

3.4.3 KEY INITIATIVES AND PROJECTS

3.4.3.1 FACILITATE SMART, SUSTAINABLE, AND CONCENTRATED GROWTH OF SETTLEMENTS:

- Promote compact and efficient land use planning to reduce urban sprawl through the densification of areas and urban edges.
- Implement policies that encourage sustainable development practices and energy-efficient infrastructure.
- Ensure industrial developments are focussed on larger population centres and near major routes to ensure easy movement of input materials and the final products. The industrial developments should not be detrimental to other sectors of the economy such as tourism or agriculture.

3.4.3.2 PROMOTE SOCIAL AND ECONOMIC DEVELOPMENT, COMMUNITY LIVELIHOODS, AND SAFETY:

- Ensure the sustainable delivery of social facilities, public open spaces, and recreational opportunities.
- Develop human settlements in alignment with the Social Services Wheel as proposed in the NSDF and Karoo RSDF.
- Focus on developing community gardens in key settlements to promote local food security in Aberdeen, Jansenville, Klipplaat, and Nieu Bethesda.

3.4.3.3 URBAN RENEWAL AND UPGRADING OF GRAAF-REINET CENTRAL BUSINESS AREAS:

- Upgrade street furniture and sidewalks to enhance public spaces' aesthetic and functional quality under the Small-Town Regeneration Strategy.
- Investigate the potential for internal modernisation and modification of Category C Heritage buildings within and on the periphery of the CBD to alleviate growth pressure and restrictions posed by the density of heritage sites.

- Promote non-motorized transport options, such as cycling lanes and pedestrian paths.

3.4.3.4 INCREASE SUPPORT FOR SMME DEVELOPMENT IN KEY SECTORS:

- Develop initiatives to support Small, Medium, and Micro Enterprises (SMMEs) in agriculture, energy, and tourism.
- Prioritise the expansion of commonages where land becomes available or is availed adjacent or in close proximity to existing commonages.
- Provide training, funding, and resources to foster entrepreneurship and business growth.

3.4.3.5 ENCOURAGE SUSTAINABLE INFORMAL SECTOR BUSINESSES:

- Promote the inclusion of informal sector businesses in the local economy.
- Provide support and infrastructure to help these businesses thrive sustainably.

3.4.3.6 DEVELOP MIXED-USE DEVELOPMENT NODES IN STRATEGIC AREAS:

- Identify and develop areas where mixed-use developments can flourish.
- Promote a combination of residential, commercial, and recreational spaces to create vibrant community hubs.

3.4.3.7 PROMOTE INCREMENTAL UPGRADING AND OFF-GRID DEVELOPMENT:

- Support incremental improvements to existing infrastructure and housing. Maintenance and upgrading of existing infrastructure should not be hindered by the development of new infrastructure to cater for future developments.
- Encourage off-grid solutions where traditional services are unavailable, fostering self-sufficient communities.

3.4.3.8 APPLY URBAN DESIGN PRINCIPLES:

- Incorporate key urban design principles such as permeability, legibility, appropriateness, uniqueness, adaptability, and flexibility.
- Ensure new developments are designed to be accessible, understandable, and tailored to the local context.
- Illegal and non-conforming signage in towns and along major roads should be removed to ensure a cohesive image is created and create a sense of place.
- Transform dead and impersonal spaces into vibrant, walkable areas through public art. The municipality will need to collaborate with property owners to enable local artists to create art on designated buildings and streets, fostering a sense of place and community.
- Incorporate shaded spaces where possible to support pedestrian movement during hot days. Maximise the use of these shaded spaces by covering them with renewable energy (PV panels) or rain-catching infrastructure.
- Regularly maintain open spaces and enhance urban design through urban greening projects as a means to decrease the temperature footprint of public spaces and urban areas.

3.4.3.9 PROVIDE REALISTIC DEVELOPMENT GUIDANCE:

- Base planning and design on realistic assessments of physical, economic, social, and institutional factors.
- Ensure development plans are feasible and aligned with community needs and capacities.
- Implement climate resilience development guidelines in all land use decisions, especially in areas prone to flooding or drought.

3.4.3.10 IMPLEMENT DENSITY CONTROLS FOR MIXED-USE AREAS:

- Establish different density levels for each town, allowing for transitional zones between high, medium, and low land use activities.
- Use density controls to manage growth and ensure balanced development across urban and rural areas.

3.4.3.11 PROMOTE AND SUPPORT URBAN AND RURAL LINKAGES:

- Develop transportation infrastructure to improve connectivity between rural and urban areas, including roads, public transit, and non-motorized transport routes.
- Facilitate economic linkages by supporting local markets, supply chains, and distribution networks that connect rural producers with urban consumers.
- Implement communication and technology initiatives, such as broadband expansion, to bridge the digital divide between urban and rural areas.
- Encourage cultural and educational exchanges to foster understanding and cooperation between rural and urban communities.

3.4.3.12 FUNCTIONAL REGIONS

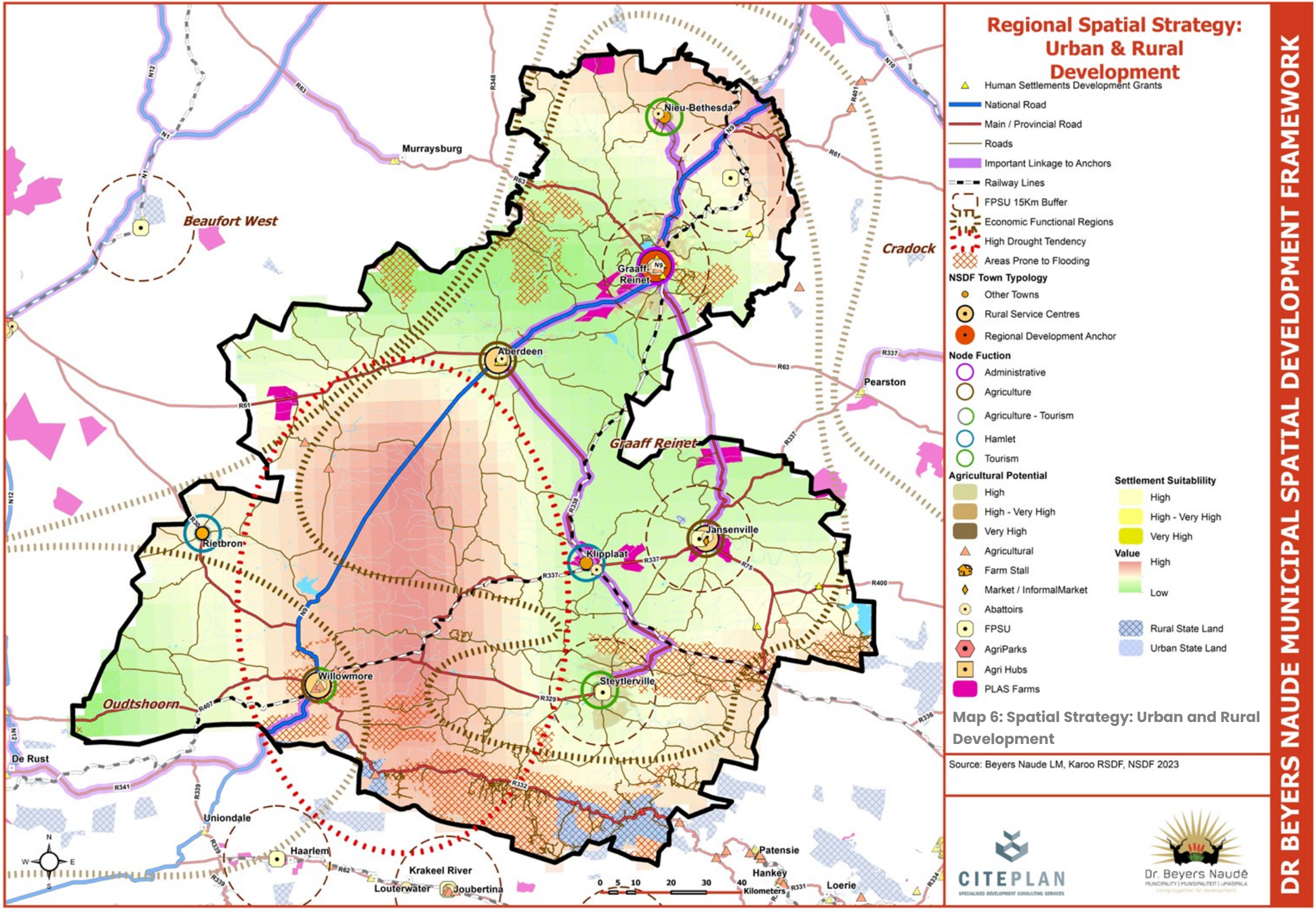
- Improve connectivity between rural and urban regions of the functional regions to enable economic activity throughout the regions.
- Foster cross-border partnerships with neighbouring municipalities where functional regions cross municipal boundaries, such as the case with Willowmore and the relationship with Oudtshoorn.

3.4.3.13 TOWN TYPOLOGIES, NODAL FUNCTION AND OPPORTUNITIES AND SOCIO-ECONOMIC CONSIDERATIONS

Table 5: Settlement Typology

Town	NSDF Typology	PSDF Typology	DSDF Typology	MSDF Typology	Nodal Function	Land Use Function
GRAAFF-REINET	Regional Development Anchor	District Centre	District Centre	**1ST ORDER NODE**	Administrative Node Agriculture Node Institutional Node	• Mixed Use - High and Low Intensity • Social Services • Economic Services • Institutional Services • Agriculture Services • Services and Light Industries • Mixed Housing Development
Aberdeen	Rural Service Centre	Local Centre	Sub-District Centre	**2nd Order Node**	Agriculture Node Institutional Node	• Institutional Services • Low-Density Residential Development • Agriculture Development • Social Services • Economic Services • Services and Light Industries

Town	NSDF Typology	PSDF Typology	DSDF Typology	MSDF Typology	Nodal Function	Land Use Function
Jansenville	Rural Service Centre	Local Centre	-	**2nd Order Node**	Agriculture	• Agriculture Development • Social Services • Economic Services • Low-Density Residential Development
Willowmore	Rural Service Centre	Sub-Local Centre	Local Centre	**2nd Order Node**	Agriculture Node Tourism Node	• Institutional Services • Agriculture Development • Tourism Development • Low-Density Residential Development
Steytlerville	Other Towns	Sub-Local Centre	Local Centre	**2nd Order Node**	Tourism Node	• Agriculture Development • Tourism Development • Low-Density Residential Development • Institutional Use
Nieu-Bethesda	Other Towns	Sub-Local Centre	Local Centre	**3rd Order Node**	Tourism Node	• Tourism Development • Low-Density Residential • Agriculture Development
Klipplaat	Other Towns	Sub-Local Centre	Local Centre	**3rd Order Node**	Hamlet	• Low-Density Residential Development • Transport Development • Institutional Use
Rietbron	-	Sub-Local Centre	-	Other Nodes	Hamlet	• Rural Village • Agriculture Development


Regional Spatial Strategy: Urban & Rural Development
Human Settlements Development Grants
National Road
Main / Provincial Road
Roads
Important Linkage to Anchors
Railway Lines
FPSU 15Km Buffer
Economic Functional Regions
High Drought Tendency
Areas Prone to Flooding
NSDF Town Typology
Other Towns
Rural Service Centres
Regional Development Anchor
Node Fuction
Administrative
Agriculture
Agriculture - Tourism
Hamlet
Tourism
Agricultural Potential
High
High - Very High
Very High
Agricultural
Farm Stall
Market / InformalMarket
Abattoirs
FPSU
AgriParks
Agri Hubs
PLAS Farms
Settlement Suitablility
High
High - Very High
Very High
Value
High
Low
Rural State Land
Urban State Land
Map 6: Spatial Strategy: Urban and Rural Development
Source: Beyers Naude LM, Karoo RSDF, NSDF 2023
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Beaufort West
Murraysburg
Cradock
Pearston
Graaff Reinet
Nieu-Bethesda
Graaff-Reinet
Aberdeen
Jansenville
Klipplaat
Rietbron
Willowmore
Oudtshoorn
Steytlerville
De Rust
Uniondale
Haarlem
Krakeel River
Louterwater
Joubertina
Patensie
Hankey
Loerie
0 5 10 20 30 40 Kilometers

3.5 LEVER 4: INFRASTRUCTURE DEVELOPMENT

Drivers: Environmental concerns, energy security, technological innovation, water security and market demand for sustainable products.

3.5.1 ACTION AREAS:

- Renewable Energy Deployment: Invest in renewable energy projects such as solar and wind farms to reduce carbon emissions and enhance energy security.
- Sustainable Industry Support: Provide incentives for businesses to adopt green practices and technologies, fostering innovation and competitiveness.
- Research and Development: Fund research initiatives to develop and commercialise green infrastructure solutions, creating opportunities for economic growth and job creation.

3.5.2 SPATIAL STRUCTURING ELEMENTS:

- Corridors: Designate renewable energy corridors for the development of solar and wind farms, optimising transmission infrastructure to connect to urban centres.
- Nodes: Establish green technology innovation nodes to incubate clean energy startups and research facilities, driving innovation and commercialisation.
- Zones: Develop industrial zones to attract green industries and businesses, providing access to renewable energy, sustainable infrastructure, and supportive regulatory frameworks.

3.5.3 KEY PROJECTS AND INITIATIVES

3.5.3.1 GREEN ENERGY AND ECONOMY INITIATIVES

3.5.3.1.1 PROMOTE RECYCLING PROGRAMS:

- Implement recycling efforts throughout the municipality by involving the local communities.
- Enhance recycling at landfill sites to save air space and encourage community participation in recycling programs.

3.5.3.1.2 IMPROVE MUNICIPAL BLUE DROP SCORE:

- Upgrade water resources and process control systems to address the low Blue Drop Scores of below 30%.
- Focus on improving water quality and management in all of the towns.

3.5.3.1.3 UPGRADE WASTEWATER TREATMENT WORKS (WWTWS):

- Upgrade critical WWTWs in all of the towns to improve compliance and raise the overall Green Drop Score from its current 15%.
- Address capacity issues in WWTWs operating at or above design capacity to free up capacity for new developments.

3.5.3.1.4 UTILISE TREATED EFFLUENT:

- Re-use treated effluent from WWTWs in Aberdeen and Graaff-Reinet for irrigation or industrial purposes to conserve fresh water.

3.5.3.1.5 DEVELOP OFF-GRID ELECTRICAL PROVISION:

- Identify and promote opportunities for off-grid electrical provision in towns to support local economic development.
- Advocate for amendments to the Integrated Resource Plan (IRP) to facilitate the development of off-grid networks.

3.5.3.1.6 ELECTRICAL GRID INFRASTRUCTURE:

- Invest in upgrading and expanding electrical grid infrastructure to support both economic and residential activities.
- Encourage the use of alternative energy resources to enhance grid resilience and sustainability.

3.5.3.2 SUSTAINABLE WATER RESOURCE MANAGEMENT

3.5.3.2.1 ADOPT IMPROVED WATER RE-USE AND HARVESTING POLICIES:

- Implement policies for water reuse and harvesting in all towns to improve water sustainability.
- Promote rainwater harvesting and greywater recycling among residents and businesses.
- Promote the use of permeable surfaces instead of hard pavements and parking lots to reduce surface runoff in urban areas and enhance groundwater recharge.

3.5.3.2.2 ENHANCE WATER QUALITY AND ACCESS:

- Improve the quality and access to water in communities with low Blue Drop Scores by upgrading water treatment facilities and distribution systems.
- Prioritise the improvement of water pressure to ensure supply to communities in high-lying areas.
- Increase allocated water volumes and maintain pressure in supply pipelines to meet the growing needs of consumers.

3.5.3.2.3 INTEGRATED CATCHMENT MANAGEMENT:

- Collaborate with various stakeholders for integrated catchment management to enhance water security and quality.
- Focus on job creation through conservation and water management projects.
- Develop green infrastructure in urban areas to collect surface runoff where it can be filtered by natural processes before it enters rivers, oceans and groundwater systems. This can be achieved through bioswales, rain gardens and permeable paving.

3.5.3.3 TRANSPORTATION AND INFRASTRUCTURE DEVELOPMENT

3.5.3.3.1 REVITALISE RAIL FOR TOURISM AND FREIGHT:

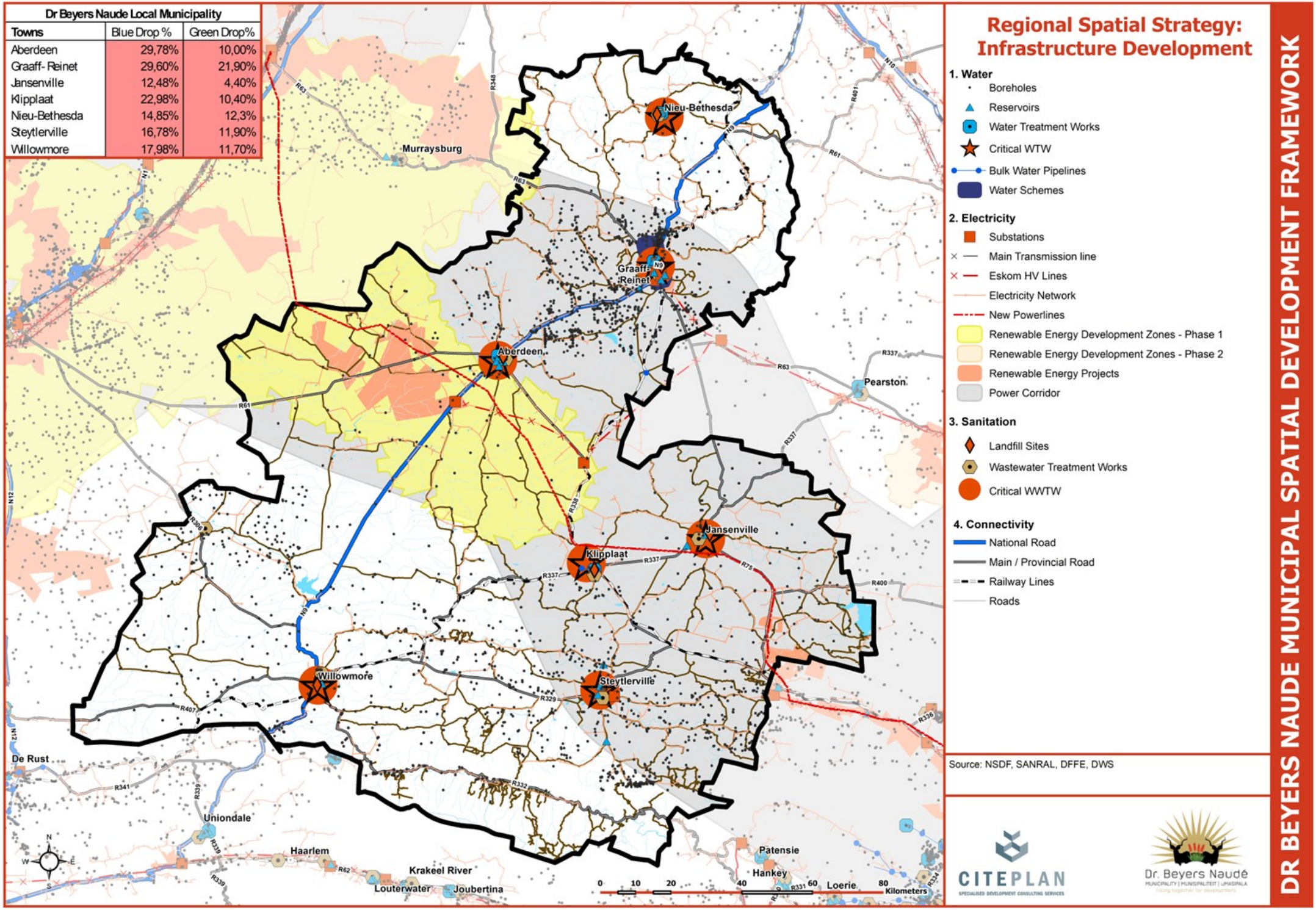
- Refurbish existing railway lines and stations to implement tourism train journeys and aid freight movement between the Eastern Cape and Western Cape.

3.5.3.3.2 COMPREHENSIVE INFRASTRUCTURE PLAN:

- Develop and implement a comprehensive infrastructure plan that responds to the region's current and future needs.
- Prioritise upgrades to existing infrastructure over extending services to new areas, ensuring sustainability and efficiency.
- Prioritise development in areas with existing services and densification in existing areas to limit the need to extend infrastructure.

3.5.3.3.3 RENEWABLE ENERGY DEVELOPMENT:

- Prioritise renewable energy projects in the western and central parts of the municipality to align with the National Renewable Energy Development Zone.
- Ensure that renewable energy infrastructure development includes provisions for minimizing visual impact, noise pollution, and other environmental concerns.


Dr Beyers Naude Local Municipality
Towns | Blue Drop % | Green Drop%
Aberdeen | 29,78% | 10,00%
Graaff- Reinet | 29,60% | 21,90%
Jansenville | 12,48% | 4,40%
Klipplaat | 22,98% | 10,40%
Nieu-Bethesda | 14,85% | 12,3%
Steytlerville | 16,78% | 11,90%
Willowmore | 17,98% | 11,70%
Regional Spatial Strategy: Infrastructure Development
1. Water
Boreholes
Reservoirs
Water Treatment Works
Critical WTW
Bulk Water Pipelines
Water Schemes
2. Electricity
Substations
Main Transmission line
Eskom HV Lines
Electricity Network
New Powerlines
Renewable Energy Development Zones - Phase 1
Renewable Energy Development Zones - Phase 2
Renewable Energy Projects
Power Corridor
3. Sanitation
Landfill Sites
Wastewater Treatment Works
Critical WWTW
4. Connectivity
National Road
Main / Provincial Road
Railway Lines
Roads
Source: NSDF, SANRAL, DFFE, DWS
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Nieu-Bethesda
Murraysburg
Graaff-Reinet
Aberdeen
Pearston
Jansenville
Klipplaat
Willowmore
Steytlerville
De Rust
Uniondale
Haarlem
Krakeel River
Louterwater
Joubertina
Patensie
Hankey
Loerie
0 10 20 40 60 80 Kilometers

3.6 COMPOSITE REGIONAL SPATIAL DEVELOPMENT FRAMEWORK

Drivers: Regional connectivity patterns, environmental conservation imperatives, agricultural productivity potential, settlement hierarchy, cross-boundary integration, resource management requirements, tourism development opportunities, and transportation infrastructure networks.

3.6.1 ACTION AREAS:

- Regional Integration: Strengthen physical and economic linkages between settlements along major transport corridors (N9 and R75) while respecting environmental constraints.
- Resource Management: Implement integrated management approaches for water resource zones, protected areas, and agricultural lands.
- Settlement Hierarchy: Support differentiated development approaches based on settlement classification and function.
- Environmental Protection: Preserve and enhance ecological conservation zones while managing development pressures in trade-off zones.
- Tourism Development: Leverage heritage assets and natural attractions through coordinated route development.

3.6.2 SPATIAL STRUCTURING ELEMENTS:

- Corridors: Develop and enhance primary (N9) and secondary (R75) transport corridors as economic development spines, integrating tourism routes with regional movement networks.
- Nodes: Strengthen hierarchical settlement structure with Graaff-Reinet as Regional Development Anchor, supported by Rural Service Centres at Aberdeen, Jansenville, and Willowmore.
- Zones: Implement differentiated development approaches for Conservation Zones, Agricultural Zones, Development Zones, and Resource Zones as depicted on the Regional Spatial Strategy map.

3.6.3 KEY INITIATIVES AND PROJECTS

3.6.3.1.1 STRENGTHEN THE REGIONAL DEVELOPMENT ANCHOR:

- Consolidate Graaff-Reinet's role as a primary service centre through targeted infrastructure investment.
- Implement urban edge management within the 10km expansion buffer zone.
- Promote mixed-use development in the urban core to enhance efficiency and vitality.

3.6.3.1.2 ENHANCE RURAL SERVICE CENTRE FUNCTIONALITY:

- Support Aberdeen, Jansenville, and Willowmore as key service points for surrounding rural areas.
- Develop public transport interchanges at these centres to improve regional mobility.
- Implement appropriate density controls to manage growth while maintaining rural character.

3.6.3.1.3 PROTECT AND MANAGE ENVIRONMENTAL RESOURCES:

- Enforce development restrictions in designated Ecological Conservation Zones.
- Implement water resource management protocols in Water Resource Zones.
- Manage the interface between Protected Areas and agricultural activities in Trade-off Zones.
- Promote the expansion of protected areas within the 10km Protected Area Buffer Zones.

3.6.3.1.4 PROMOTE SUSTAINABLE AGRICULTURAL DEVELOPMENT:

- Protect high-potential agricultural land from non-agricultural development.
- Support extensive agriculture in designated low-potential areas.
- Implement sustainable farming practices in areas adjacent to water resource zones.

3.6.3.1.5 DEVELOP INTEGRATED TOURISM ROUTES:

- Strengthen tourism corridors linking heritage sites and natural attractions.
- Upgrade tourism-related infrastructure along designated routes.

- Promote integration with regional tourism initiatives, such as the Eden to Addo initiative.

3.6.3.1.6 ENHANCE REGIONAL MOBILITY NETWORKS:

- Maintain and upgrade the N9 as the primary development corridor.
- Improve connectivity between Rural Service Centres by upgrading and maintaining regional transport routes.

3.6.3.1.7 SUPPORT RENEWABLE ENERGY DEVELOPMENT:

- Facilitate renewable energy projects in designated Renewable Energy Development zones.
- Ensure compatibility with agricultural activities and environmental conservation.
- Promote small-scale renewable energy initiatives in rural settlements.

3.6.3.1.8 MANAGE URBAN-RURAL INTERFACES:

- Protect agricultural land from urban encroachment.
- Promote appropriate densification within existing urban areas.
- Promote urbanisation in settlements with prominent economic potential.
- In settlements with limited potential focus should be placed on maintaining existing infrastructure and services, above the expansion and establishment of new projects.

3.6.3.1.9 STRENGTHEN CROSS-BOUNDARY INTEGRATION:

- Coordinate development initiatives with Beaufort West, Greater Oudtshoorn, Blue Crane Route and Sundays River Valley municipalities.
- Align conservation strategies across administrative boundaries.
- Develop integrated tourism routes with neighbouring regions.

3.6.3.1.10 IMPLEMENT RESOURCE PROTECTION MEASURES:

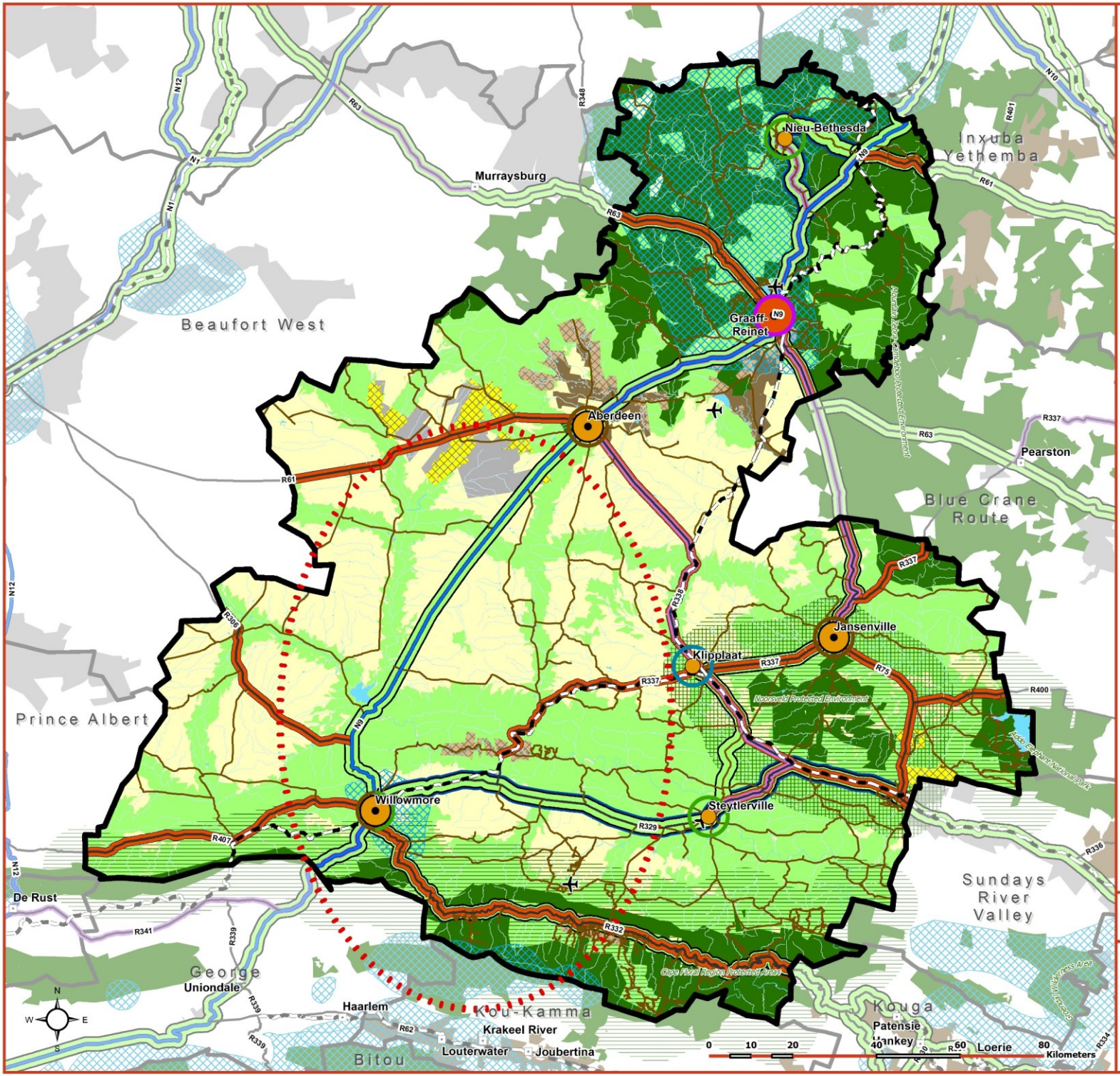
- Enforce development restrictions in Water Resource Zones.
- Protect ecological corridors and biodiversity areas.
- Manage agricultural activities in environmentally sensitive areas.
- Safeguard high-potential agricultural land from being divided or developed for non-agricultural purposes.

3.6.3.1.11 PROMOTE ECONOMIC DIVERSIFICATION:

- Support agricultural value-adding activities in Rural Service Centres and within the agro-processing areas in the Jansenville region.
- Support light industrial activities in Rural Service Centres.
- Develop tourism-related enterprises along designated routes.
- Facilitate renewable energy sector development in appropriate zones.

3.6.3.1.12 FUNCTIONAL REGIONS:

- Strengthen linkages between urban and rural components within each functional region.
- Promote complementary development between settlements based on their roles and functions.
- Support cross-boundary cooperation where functional regions extend beyond municipal boundaries.



Regional Spatial Strategy: Composite Framework

NSDF Town Typology

- Other Towns
- Regional Development Anchor
- Rural Service Centres

Node Fuction

- Agriculture - Tourism
- Administrative
- Agriculture
- Hamlet
- Tourism

Resouce Zones

- Agro Processing
- Ecological Conservation Zone
- Extensive Agriculture (Low Potential)
- Renewable Energy Development
- Protected Agricultural Areas
- Protected Areas
- Protected Areas - 10 km Expansion Buffer
- Trade-off Zone (Agri, Eco)
- Trade-off (Eco, IPP)
- Water Resource Zones

Key Corridors

- National Transport Route
- Regional Transport Route

Key Routes & Linkages

- Important Linkage to Anchors
- Tourism Routes

Other

- Airstrip or Helipads
- High Drought Tendency
- Towns
- National Road
- Main / Provincial Road
- Roads
- Railway Lines

Source: NSDF, SANRAL, DFFE, DWS

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4 LOCAL PROPOSALS

4.1 KEY CONCEPTS

4.1.1 CORRIDORS

4.1.1.1 MIXED-USE CORRIDOR (MU)

A mixed-use corridor in this context is a street or area planned to accommodate various activities like residential, commercial, retail, and office spaces, all in close proximity. It's designed to create a vibrant environment where people can live, work, and socialize conveniently, fostering economic growth and community interaction.

4.1.1.2 OPEN SPACE SYSTEM (OP)

An open space system is a planned network of green areas, parks, sports facilities, and trails designed to enhance residents' quality of life. It includes both active spaces, like parks with facilities for sports and events, and passive spaces, such as natural areas and scenic spots for relaxation and wildlife preservation.

The foundation of an improved open space system lies in its integration and interconnectedness. Rather than isolated pockets of greenery, the system should be designed as a cohesive network, seamlessly linking parks, recreational areas, and natural reserves. This integration fosters accessibility and encourages diverse uses, promoting community interaction and well-being.

4.1.2 ZONES

4.1.2.1 URBAN EDGE

An urban edge refers to a defined boundary or limits delineating the extent of planned urban development. It serves as a framework for managing growth and ensuring the efficient use of land resources. Within this framework:

A **5-year** development vision sets short-term goals for immediate planning and investments to meet community needs. The primary urban edge prioritises infrastructure and services for development within this timeframe.

A **15-year** development window offers flexibility for future growth and infrastructure planning, anticipating future development needs. The secondary urban edge allows controlled expansion beyond the 10-year horizon, contingent on evidence of infrastructure availability or developer commitments to provide necessary services, ensuring responsible development practices.

4.1.2.2 CENTRAL BUSINESS AREA

A central business area (CBA) is a concentrated commercial district within a town that serves as the primary hub for economic activity, business operations, and retail commerce. It typically features a mix of office buildings, retail stores, restaurants, banks, and other commercial establishments. It serves as the focal point for commerce, employment, and social interaction within the community.

4.1.2.3 DENSIFICATION AREA (DZ)

A densification zone is a designated area within a town where urban development is encouraged to increase population density and optimize land use efficiency. This zone operates under a density policy (as included in the SDF), which consists of guidelines or regulations to manage population density. Densification zones prioritise intensified development, either through the redevelopment of existing properties or new development (greenfield), while ensuring that infrastructure supports increased density and enhances the overall liveability of the area.

4.1.2.4 MIXED USE AREA (MIX)

A mixed-use zone is an area within a town or city where a variety of land uses, such as residential, commercial, and industrial, are allowed to coexist within the same zoning district. This zoning designation permits a diverse range of activities

and functions to occur within a single area, promoting efficient land use and encouraging interaction between different uses.

4.1.2.5 INSTITUTIONAL AREA (IZ)

An institutional zone is a designated area within a town or city where institutions such as schools, hospitals, government offices, and religious facilities are permitted to operate. This zoning designation typically restricts other types of development to ensure that institutional uses can function effectively and without disruption. Institutional zones often include facilities that serve essential community needs and provide important services to residents, such as education, healthcare, governance, and spiritual support.

4.1.2.6 INDUSTRIAL AREA (IDZ)

An industrial zone is a designated area within a town or city where industrial activities are permitted and often encouraged. This zoning designation typically restricts other types of development to ensure that industrial operations can function effectively and without disruption. Industrial zones may include manufacturing facilities, warehouses, distribution centres, and other industrial uses. They are planned and regulated to accommodate the unique characteristics and requirements of industrial activities while maintaining compatibility with surrounding land uses.

4.1.2.7 HOUSING DEVELOPMENT AREA (HD)

A housing development zone is an area designated for residential development, accommodating various types of housing typologies. Different density levels may be proposed for each zone:

- **Low-density** - feature single-family homes on larger erven, offering space and privacy.
- **Medium-density** - a mix of single-family homes, townhouses, and low-rise apartments. The maximum gross density is 35 dwelling units per hectare.
- **High-density** - contains multi-story apartment buildings or mixed-use developments, maximizing land use efficiency. The maximum gross density is 60 dwelling units per hectare.

Each zone has specific regulations tailored to achieve its desired density and neighbourhood character.

4.1.2.8 HERITAGE ZONE

A heritage zone is a designated area within a town that contains significant cultural, historical, or architectural landmarks and assets. These zones are established to preserve and protect the heritage value of the area, including historic buildings, sites, and districts, as well as cultural landscapes and archaeological resources. Heritage zones play a crucial role in maintaining the cultural identity and sense of place of a community, while also promoting tourism, economic development, and community pride.

4.1.3 NODES

4.1.3.1 NEIGHBOURHOOD NODE

A neighbourhood node is a central hub within a residential area, offering essential services and amenities to local residents. It includes businesses like grocery stores, cafes, and shops, along with public spaces for socializing and community events. These nodes promote walkability and community cohesion.

4.1.3.2 SPECIALITY NODE

Speciality nodes are specific hubs within a region specialising in industries like agriculture, tourism, transit, gateways, rural development, logistics, automotive, and others. They strategically leverage local resources and expertise to drive economic growth, innovation, and sustainability.

4.1.4 LINKAGES

4.1.4.1 TRANSPORTATION LINK

A transportation link is a physical connection or route that facilitates the movement of people, goods, or vehicles between two or more locations. These links can include roads, highways, railways, waterways, air routes, and pedestrian pathways, as well as associated infrastructure such as bridges, tunnels, ports, airports, and transit stations. Transportation links play a critical

role in enabling mobility, trade, and access to resources, services, and opportunities within and between communities.

4.1.5 NO-GO AREAS

4.1.5.1 FLOOD PRONE AREAS

- Implement natural drainage systems such as swales, bioswales, and rain gardens to manage stormwater runoff effectively and reduce reliance on conventional drainage infrastructure.
- Limit the use of impervious surfaces and promote permeable paving materials to enhance groundwater recharge and minimize surface water runoff.
- Concentrate access infrastructure in areas less susceptible to erosion and flooding to improve safety and accessibility.

4.1.6 KEY POLICY GUIDELINES

4.1.6.1 DEVELOPMENT OUTSIDE THE URBAN EDGE

Development outside the urban edge aims to accommodate larger residential properties that may be used for limited agriculture but primarily serve as places of residence for those seeking a rural lifestyle. Such developments should only be permitted within acknowledged, demarcated urban areas. The development of smallholdings at a **density of 1 dwelling per hectare** may be supported by the local municipality, subject to the following conditions:

- Development is limited to farms abutting the 20-year proposed urban edge of each town. Development may also be considered within the 20-year urban edge.
- Adequate provision of essential services such as water, electricity, and sanitation must be ensured *(either by the Municipality or by Off-Grid Services as approved by the Technical Department).*
- Development should minimise environmental impact and preserve natural landscapes.
- Limited agricultural activities should be permissible, ensuring that land remains productive and contributes to local food security.
- Adequate road access and infrastructure must be in place to support the development and maintain connectivity to the greater area.
- Developments should integrate with existing communities, ensuring that new residents can access local amenities and services.
- All developments must comply with relevant municipal, provincial, and national regulations and planning policies.

4.1.6.2 DENSIFICATION AND MINIMUM ERF SIZES

To promote efficient land use and accommodate population growth, specific guidelines have been established for minimum erf sizes and densification policies. Densification is encouraged along key corridors and collector routes, subject to the availability of services, consent from neighbouring owners, and impact assessments regarding traffic and on-site parking requirements.

Table 6: Minimum erf sizes for different types of developments:

Development Type	Minimum Erf Size	Notes
Duet Developments	800m²	Suitable for smaller family units or shared residential spaces.
Single Residential Developments	500m² per unit	Requires a minimum erf size of 1000m² for two units per plot.
Multiple Residential Developments	3000m²	The minimum "erf" size per unit/density is 150m².

Densification within Dr Beyers Naude is designed to maximise the use of available land while maintaining a high quality of life for residents.

The key principles of the densification policy include:

- Encouraging the development of vacant or underutilised land within existing urban areas to maximize the use of existing infrastructure and services.
- Facilitating mixed-use developments that combine residential, commercial, and recreational spaces to create more dynamic and accessible neighbourhoods.
- Coordinating densification efforts with public transportation plans to reduce reliance on private vehicles and improve connectivity within the municipality.

- Ensuring that densification efforts do not compromise the quality of life for residents by maintaining adequate green spaces, recreational areas, and community facilities.
- Balancing densification with the preservation of the unique character and heritage of different neighbourhoods within Dr Beyers Naude.
- Densification is supported along key corridors and collector routes to optimize land use and improve accessibility.
- Densification is contingent on the availability of necessary services such as water, electricity, and sanitation.
- Neighbouring property owners' consent is required to ensure community support and minimize conflicts.
- Evaluating the impact of densification on local traffic to ensure that it does not lead to congestion or safety issues.
- Ensuring that adequate on-site parking is provided to accommodate increased residential density without straining existing parking resources.

4.1.6.3 BUILDING LINES

Building lines other than those included in the Land Use Scheme:

The building lines included in the SDF are supportive guidelines and do not take preference over the Land Use Scheme. These guidelines are proposed to ensure safe and efficient transportation networks and to accommodate future infrastructure upgrades.

- **Provincial Roads:** A minimum building line of 32 meters from the centre of a provincial road is proposed. This buffer is intended to enhance road safety and allow for potential road widening or improvements.
- **National Roads:** A minimum building line of 64 meters from the centreline of a national road is proposed. This larger buffer accommodates higher traffic volumes and the potential for significant road upgrades.
- **Major and Key Intersections**: A 500-meter buffer or radius is proposed around major and key intersections to support future intersection upgrades along and crossing national and provincial or main routes. This buffer ensures that land use and development do not impede necessary infrastructure enhancements.

4.1.6.4 GUIDELINES FOR COMMONAGE AREAS AND MUNICIPAL LAND

Commonage areas and municipal land may be developed in the future and require specific guidelines to ensure their sustainable and responsible utilization. These areas are crucial for supporting extensive agriculture and grazing while protecting the environment and preventing misuse.

4.1.6.4.1 GUIDELINES

- **Permitted Uses:** Extensive agriculture, grazing camps, and related agricultural activities.
- Implement sustainable practices, conserve biodiversity, and prevent environmental harm.
- Prohibit illegal dumping and enforce proper waste disposal.
- Enforce strict access control, regular monitoring, and security measures.
- Maintain flexibility for future development with EIAs and community engagement.
- Implement land rehabilitation, water resource management, and soil conservation.
- Establish a permit system, formalise usage agreements, and conduct periodic reviews.

4.2 GRAAFF-REINET

4.2.1 HISTORY

Founded in 1786, Graaff-Reinet is South Africa's fourth-oldest town and the oldest in the Eastern Cape. Established by the Dutch East India Company as a remote frontier settlement, it was named after Governor Cornelis Jacob van de Graaff and his wife, Cornelia Reinet. Initially a military outpost and trading centre, it attracted trekboere seeking grazing land beyond Cape Town's colonial boundaries, leading to tensions with the Indigenous San people. In 1795, residents briefly declared independence, forming the Republic of Graaff-Reinet, but British forces soon reincorporated it into the Cape Colony. Throughout the 19th century, it became a key frontier town and supply centre for Voortrekkers.

From the mid-1900s Dr. Beyers Naudé's had profoundly impacted Graaff-Reinet and is recognized in the naming of the Dr Beyers Naudé Municipality. Although born elsewhere, his life and work resonate strongly with the town's commitment to justice, equality, and community resilience. Naudé, initially aligned with Afrikaner nationalism, experienced a transformation that led him to openly oppose apartheid, resigning from the influential Afrikaner Broederbond and denouncing the Dutch Reformed Church's support of racial segregation. His dedication to social justice serves as a historical anchor for Graaff-Reinet's modern identity, shaping its role as a centre of heritage and diversity.

1st Order Node

4.2.2 SOCIO-ECONOMIC CONSIDERATIONS

The socio-economic considerations for Graaff-Reinet focus on addressing the key challenges and opportunities to ensure sustainable growth, enhance the town's liveability, and preserve its historical and cultural heritage. The following are the primary considerations:

- There is a pressing need for urban regeneration initiatives to revitalize key areas of the town. This includes upgrading infrastructure, enhancing public spaces, and promoting economic development to improve the overall quality of life for residents.
- The establishment of a bypass route is essential to divert heavy traffic away from the town center. This will help reduce road damage, protect infrastructure, and enhance safety for pedestrians and local traffic, contributing to a more pleasant urban environment.
- The revitalization of Graaff-Reinet should align with the Small-Town Regeneration Strategy, with a strong focus on implementing Karoo-themed urban design guidelines. This approach will help preserve the historical character of the town, attract tourism, and enhance its cultural appeal.
- The town has limited suitable land for development due to its unique topography. It is crucial to integrate and maximize the use of available land efficiently for housing and other developments, balancing growth with environmental conservation.
- There is a need to improve public transportation networks to enhance access to socio-economic and economic services for all residents. Better connectivity will facilitate access to education, healthcare, and job opportunities, supporting inclusive growth.
- The town's infrastructure requires significant investment to meet the growing demand driven by population increases and economic activities. Upgrading water, sewerage, and road infrastructure is necessary to support sustainable urban growth.

- The conservation and protection of riverine and wetland areas are critical to maintaining the ecological balance and natural beauty of Graaff-Reinet. These areas should be preserved and integrated into the town's green spaces, providing recreational opportunities and enhancing biodiversity.
- There is a need for town beautification projects, including landscaping, street furniture, and public art installations. These efforts will enhance the aesthetic appeal of the town, attract tourists, and contribute to a positive community image.

In summary, the socio-economic considerations for Graaff-Reinet emphasize the need for a **balanced approach to development** that integrates urban regeneration, infrastructure investment, environmental conservation, and heritage preservation. These strategies aim to create a vibrant, sustainable, and inclusive town that meets the needs of its residents while attracting visitors and investors.

4.2.2.1 POPULATION GROWTH PROJECTION FOR GRAAFF-REINET (2011 - 2040)

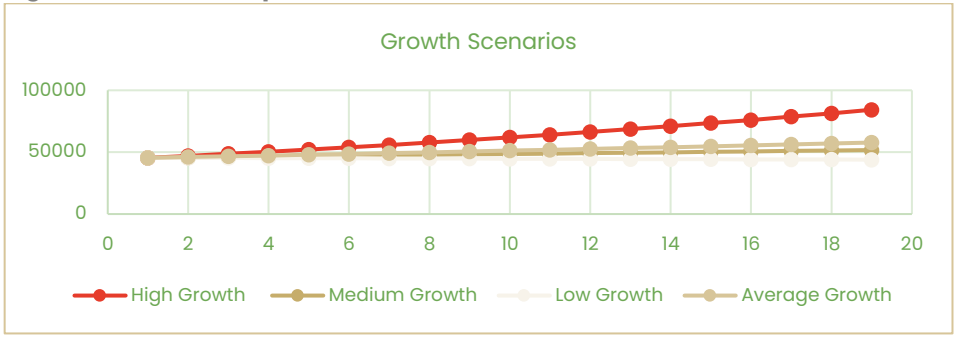
The population growth in Graaff-Reinet is based on historical data and trends within the Dr Beyers Naude Local Municipality, showing variations across different periods. In 1996, the municipal population was 74,431, which slightly declined to 73,732 by 2001, indicating a -0.19% growth rate, likely due to economic challenges or migration. By 2011, the population had increased to 79,292, with a growth rate of 0.73%, reflecting moderate expansion. From 2011 to 2016, the growth rate was relatively stable at 0.72%, bringing the population to 82,197.

The period from 2016 to 2022 saw a significant acceleration in growth, with the population reaching 101,001, reflecting a 3.49% growth rate. This surge may be attributed to increased development activities, inward migration, and an overall positive economic trend in the region. For future planning and development in Graaff-Reinet, different growth scenarios have been considered:

- **High Growth Scenario**: Assumes a growth rate of 3.49% per annum, similar to the rapid increase observed between 2016 and 2022.
- **Medium Growth Scenario**: A more conservative growth rate of 0.72% per annum, aligned with the trend seen from 2001 to 2016.
- Low Growth Scenario: Assumes a slight decline with a growth rate of -0.19% per annum, reflecting periods of economic slowdown.
- **Average Growth Scenario**: Based on a long-term average growth rate of 1.34% per annum, measured from 1996 to 2022.

Given the need for sustainable human settlements and realistic growth expectations, the Medium Growth Scenario of 0.72% per annum will be adopted for future projections and planning purposes. This analysis provides a basis for estimating future population trends and informs the strategic allocation of resources and infrastructure to accommodate the expected growth in Graaff-Reinet.

Figure 10: Possible Population Growth Scenarios for Graaff-Reinet



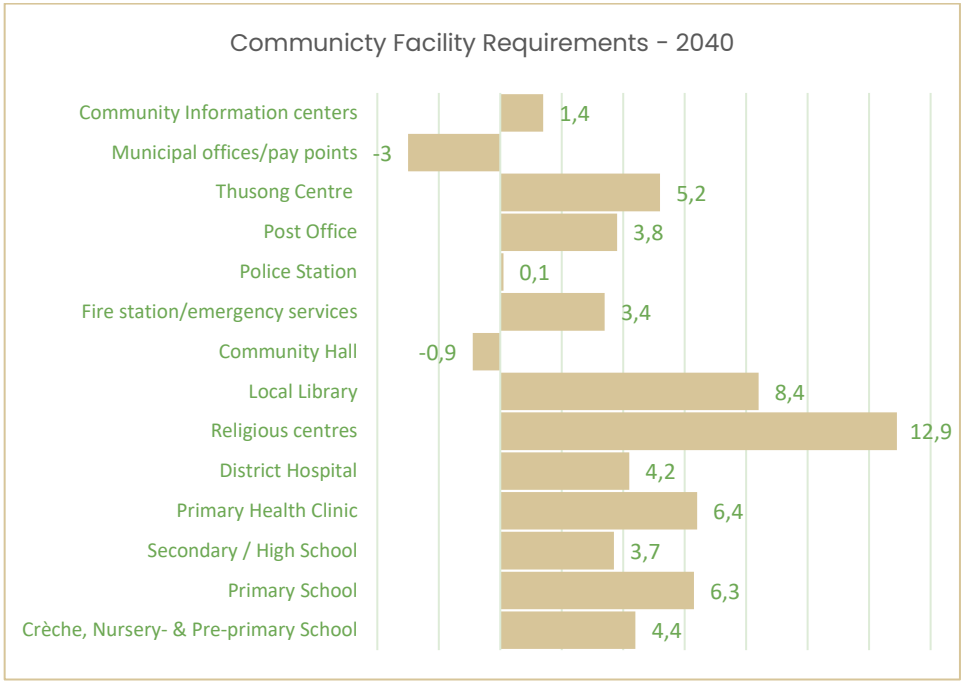
4.2.2.2 SOCIAL FACILITY NEEDS

Table 7: Social Facility Needs Assessment

SOCIAL FACILITIES NEEDS ASSESSMENT					
Facility	**Existing**	**Need 2024**	**Need 2030**	**Need 2040**	**Ha Required**
Education					
Crèche, Nursery- & Pre-primary School	6	3	4	4	1.26
Primary School	11	4	5	6	15.12
Secondary / High School	5	3	3	4	17.02
Health					
Primary Health Clinic	4	5	6	6	0.64
District Hospital	1	4	4	4	4.2
Community Services					
Religious centres	13	10	11	13	1.935
Local Library	2	7	8	8	0.126

SOCIAL FACILITIES NEEDS ASSESSMENT					
Facility	**Existing**	**Need 2024**	**Need 2030**	**Need 2040**	**Ha Required**
Community Hall	6	-2	-1	-1	-0.45
Fire station/emergency services	1	3	3	3	4.08
Police Station	2	0	0	0	0.025
Post Office	1	3	3	4	0.19
Thusong Centre	0	5	5	5	5.2
Municipal offices/pay points	4	-3	-3	-3	-0.9
Community Information Centres	1	1	1	1	0.014

The social facilities need assessment for Graaff-Reinet projects a significant increase in demand for educational, health, and community services by 2040, driven by anticipated population growth and urban expansion. The analysis highlights the necessity for additional infrastructure, with an estimated 52.2 hectares of land required to meet these needs. In education, the town will need 4 new crèches and pre-primary schools, 6 additional primary schools, and 4 new secondary/high schools, requiring a total of 33.4 hectares. Health services will also need to expand, including 6 primary health clinics and 4 district hospitals, covering 4.84 hectares to ensure adequate healthcare access. Community services demand will increase, necessitating 13 religious centers, 8 libraries, and 3 additional fire stations, alongside 4 new post offices and 5 Thusong Centres for integrated community support, utilizing 11.53 hectares. While existing facilities like police stations and municipal offices may suffice, there is a clear need for enhanced infrastructure across education, health, and community amenities to accommodate future growth. This expansion aims to support sustainable development, improve service delivery, and enhance the overall quality of life for residents in Graaff-Reinet.



4.2.3 SPATIAL PLANNING CONSIDERATIONS

4.2.3.1 KEY SPATIAL PLANNING GUIDELINES:

- Strengthen the protection of heritage buildings in accordance with the National Heritage Resources Act, ensuring compliance with regulations set by the South African Heritage Resources Agency.
- Explore the possibilities of modifying Category C Heritage sites in order to accommodate more business and commercial activity along the existing edges of the CBD.
- Define and reinforce key land use zones within Graaff-Reinet to establish a clearer spatial structure, particularly in the central business district (CBD).
- Promote low-intensity mixed-use activities along the main link and access roads to enhance the vitality of mixed-use corridors.
- Improve transportation networks to better integrate the east, central, and west sections of the town, including the development of pedestrian bridges.

- Support urban regeneration initiatives within the CBD as outlined in the Spatial Development Framework (SDF).
- Upgrade key intersections and prioritize urban greening efforts in significant public spaces.
- Develop a more cohesive and integrated open space network through the implementation of street furniture, enhanced paving, and signage.
- Restrict building heights to three stories to preserve the rural character of Graaff-Reinet.
- Establish walking routes to showcase the town's historical significance and educate visitors about its heritage.
- Enhance non-motorized transport infrastructure along the N9, R61 and R63 to promote walking and cycling as viable transportation options.

4.2.3.2 OPEN SPACE SYSTEM

Active Open Spaces (OP1)

- Ensure flexibility in layout and amenities to accommodate various recreational pursuits and community events.
- Include playgrounds with swings, slides, and climbing structures tailored to different age groups.
- Establish consistent design standards for active open spaces to create a cohesive and visually appealing environment.
- Develop outdoor gyms to improve community health and diversify the use of the properties.
- Supported Zonings: **Open Space Zone 1**

Passive Open Spaces (OP2)

- Incorporate local vegetation such as various species of aloes, succulents and grasses into open space design, creating scenic routes and gardens.
- Employing native flora in landscaping and gardening endeavours fosters sustainability. Indigenous plants are naturally suited to local environments, demanding minimal water, fertilizer, and pesticides compared to exotic species. They offer cost-effective maintenance solutions, conserve water reservoirs, and bolster the indigenous ecosystem.
- Develop well-marked trails linking open spaces, offering opportunities for exploration.
- Identify picturesque spots with amenities like tables and benches for picnics.
- Provide strategically placed waste management facilities for cleanliness.
- Place restroom facilities strategically for user convenience and hygiene.
- Ensure proper lighting and maintenance along hiking trails and public facilities.
- Use lighting and landscaping for visibility and surveillance.
- Establish pathways linking passive spaces to active recreation zones.
- Supported Zonings: **Open Space Zone 2 & Passive Open Space**

Conservation Management (OP4)

- Conduct thorough ecological assessments to understand the biodiversity, habitats, and ecological processes present within conservation areas.
- Use this information to inform management strategies and prioritize conservation efforts.
- Designate specific areas for low-impact recreational activities such as hiking, birdwatching, and nature photography, while restricting access to sensitive areas.
- Enhance ecosystem resilience through measures such as habitat connectivity, water resource management, and invasive species control.
- Supported Zonings: **Protected Area & Open Space Zone 2**

Sport Facilities (OP5)

To upgrade existing sports facilities by considering the following:

- Choose a centrally located site with ample space for various sports facilities and parking.
- Ensure zoning regulations permit a mix of indoor and outdoor sports activities.
- Design multipurpose facilities for padel tennis, field sports, and other sports clubs.
- Include amenities like changing rooms, seating, and equipment rental.
- Ensure sufficient parking spaces and accessible pathways.

- Enhance the facilities with greenery, seating areas, and amenities like drinking fountains.
- Create a welcoming environment for visitors to relax and socialize.
- Involve local sports clubs and community members in the planning process.
- Develop a diverse program of sports activities and events to engage residents of all ages.
- Supported Zonings: **Open Space Zone 1**

Recreation Facilities (OP6)

Support the upkeep and upgrading of the Botanic Sportsgrounds to ensure safe and functional sports facilities for various sports. Future developments should aim at diversifying the use of the property for other recreational and tourism activities such as markets, festivals and events.

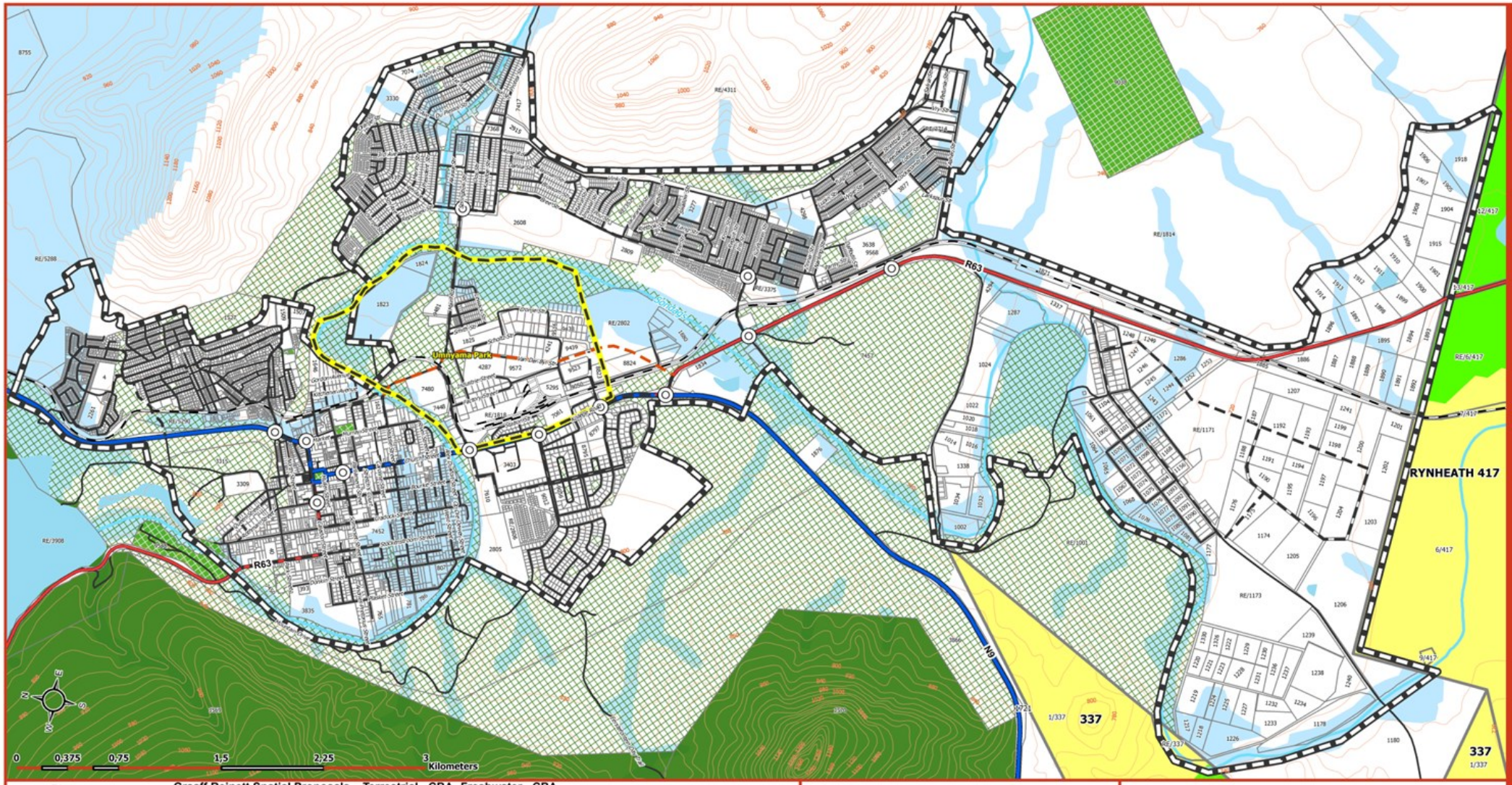
- Supported Zonings: **Open Space Zone 1**

General Open Space Guidelines

To enhance and sustainably manage open spaces in urban areas, the following general guidelines are proposed:

- Use drought-tolerant and waterwise plant species to reduce irrigation needs.
- Implement rainwater harvesting systems and greywater recycling for efficient water use in green spaces.
- Integrate open spaces with urban areas through a network of footpaths, trails, and paved walking routes.
- Design multi-use pathways to accommodate walking, running, and cycling, improving access and encouraging active use.
- Prioritize the use of native plants and trees to enhance biodiversity and reduce maintenance.
- Incorporate fruit-bearing trees to provide shade, contribute to food security, and enhance the aesthetic value of public spaces.
- Design open spaces to support a variety of uses, including areas for community events, markets, and recreational activities.
- Provide versatile, multi-purpose facilities that cater to different recreational needs.
- Encourage local community involvement in the care and maintenance of open spaces through volunteer programs.
- Establish advisory committees with community stakeholders to guide the planning and improvement of open spaces.

Image 1: Typical Open Space approach to be followed for Graaf Reinet's Open Space System



Rivers
Contours
Main / Provincial Road
National Road
Roads
Railway Lines
Wetlands
Parent Farm
Farm Portions
Erf

Graaff Reinett Spatial Proposals	Terrestrial - CBA	Freshwater - CBA
Heritage and Tourism Area	CBA 1	CBA 1
Open Space System	CBA 2	CBA 2
Protected Areas	ESA 1	ESA 1
Current Urban Edge	ESA 2	ESA 2
Proposed Umnyama Park	Other	Other

Map 15: Graaff Reinet (Open Space System)

Open Space System Graaff Reinet

Source: Dr Beyers Naude SDF 2024

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DR BEYERS NAUDE MUNICIPAL SPATIAL DEVELOPMENT FRAMEWORK

4.2.3.3 HUMAN SETTLEMENTS DEVELOPMENT

The housing development strategy for Graaff-Reinet aims to address the growing demand for diverse residential options, driven by increasing population and urban expansion. By 2030, approximately 27 hectares of land will be required for housing, with the need rising to 63 hectares by 2040. This includes a projected demand for 626 additional housing units by 2030, increasing to 1,461 units by 2040. The proposed housing development zones are designed to accommodate varying densities and cater to a range of income levels, from low-density residential areas to high-density social housing projects.

The development zones focus on sustainable land use, integrating both infill and greenfield projects to maximize available land and provide essential services. Special emphasis is placed on maintaining the town's unique Karoo character, enhancing pedestrian connectivity, and incorporating green spaces. The zones prioritize efficient road design, access to basic services, and a mix of housing types to meet diverse community needs. Additionally, the proposals align with the town's heritage and aesthetic values, supporting its historical charm and tourism appeal. The following sections outline the specific residential development zones (HD1 to HD11), detailing land extent, proposed densities, and key design considerations to support the growth and future needs of Graaff-Reinet's residents.

Table 8: Graaf Reinet Housing Assessment

Housing Development Needs - 2030		
Ha Required - @ 10 U/Ha	62.6205	ha
Ha Required - @ 20 U/Ha	31.3103	ha
Ha Required - @ 40 U/Ha	15.6551	ha
Ha Required - @ 50 U/Ha	12.5241	ha
TOTAL - Distributed Densities	**26.9268**	ha
Housing Development Needs - 2040		
Ha Required - @ 10 U/Ha	146.14	ha
Ha Required - @ 20 U/Ha	73.07	ha
Ha Required - @ 40 U/Ha	36.535	ha
Ha Required - @ 50 U/Ha	29.228	ha

TOTAL - Distributed Densities	**62.8402**		ha
Total number of Additional Houses Required	2022	2030	2040
	0	**626**	**1461**

The housing development forecast for Graaff-Reinet indicates a small increase in land requirements to meet future population growth. By 2030, approximately 27 ha hectares of land will be needed, distributed across various densities, rising to 63 hectares by 2040.

Low-Density Infill Residential Development (HD1)

- The area covers approximately 110 hectares in total and requires a holistic road design approach to enable more effective planning.
- The various properties can be developed in phases as required and considering the availability of basic services.
- The maximum density allowed is 20 dwelling units per hectare.
- Various housing types are encouraged for medium to high-income households.
- Preserving the rural ambience of the neighbourhood is essential.
- Supported Zonings: **Residential Zone 2 & Residential Zone 4 (Townhouses)**

Low-Density Residential Development (HD2)

- The area covers slightly more than 32 hectares and requires a holistic road design approach to enable more effective planning.
- The property is identified as the primary area for low-density residential development, intended to complement the existing residential neighbourhood towards the east. This area provides for long-term demands for low-density residential development.
- The maximum density allowed is 20 dwelling units per hectare.
- Prioritize pedestrian-friendly design principles, with interconnected streets, sidewalks, and green spaces to promote walkability and community interaction.
- Incorporate sustainable design features such as rainwater harvesting systems, and energy-efficient appliances to reduce environmental impact.
- Various housing types are encouraged to cater to diverse needs.

- Preserving the rural ambience of the town is essential.
- Supported Zonings: **Residential Zone 2, 3 & Residential Zone 4 (Townhouses)**

Medium Density Residential development (HD3)

- The area is characterised by ±360 informal dwelling units which should be formalised with proper road design and provision of basic services.
- The area is approximately 6 hectares in extent.
- Density Up to 40 Dwelling Units per Hectare.
- Prioritize pedestrian-friendly design principles, with interconnected streets, sidewalks, and green spaces to promote walkability and community interaction.
- HD3 can be used for emergency housing.
- Supported Zonings: **Residential Zone 1 & Residential Zone 5**

Medium-Density Infill Residential Development (HD4)

- The areas are approximately 10 hectares.
- Density Up to 40 Dwelling Units per Hectare.
- Allow for incremental upgrading of the housing areas.
- It is proposed that the southern section (±5ha) adjacent to HD3 be developed as a priority area and the northern remainder area be developed for medium to long-term housing needs.
- The development is regarded as Greenfield Development.
- Provide basic services.
- Support IRDP housing grant development.
- Supported Zonings: **Residential Zone 1 & Residential Zone 3**

Medium Density Residential development (HD5)

- Evidence of a previous human settlement development can be seen in the area. The proposal is the completion of the previous housing development.
- The area consists of 174 medium-density stands averaging ±320m² Erf size.
- The existing dilapidated and vandalised structures should be demolished to make space for new medium-density dwellings at 30 dwellings per hectare.
- Supported Zonings: **Residential Zone 1, 3 & 4**

Informal Settlement Upgrading (HD6)

- The area encompasses various smaller properties throughout Graaff-Reinet which require the formalisation of informal settlements. The properties are slightly less than 2ha in total.
- Prioritize pedestrian-friendly design principles, with interconnected streets, sidewalks, and green spaces to promote walkability and community interaction.
- Medium-density development at a maximum of 40 dwelling units per hectare.
- Supported Zonings: **Residential Zone 1**

High-Density Residential Development (HD7)

- The area covers just over 2ha in extent.
- Provision of social housing projects for low-income households.
- Provision of Community Residential Units (CRU) at a maximum of 60 dwelling units per hectare.
- Prioritize pedestrian-friendly design principles, with interconnected streets, sidewalks, and green spaces to promote walkability and community interaction.
- Supported Zonings: **Residential Zone 1 & Residential Zone 5**

Medium-Density Infill Residential Development (HD8)

- The areas are approximately 7 hectares.
- Density Up to 40 Dwelling Units per Hectare.
- Allow for incremental upgrading of the housing areas.
- The development is regarded as Greenfield Development.
- Provide basic services and a holistic road design approach.
- Support IRDP housing grant development.
- Prioritize pedestrian-friendly design principles, with interconnected streets, sidewalks, and green spaces to promote walkability and community interaction.
- Supported Zonings: **Residential Zone 1**

Medium-Density Infill Residential Development (HD9)

- The areas are approximately 5.3 hectares.
- Density Up to 40 Dwelling Units per Hectare.
- Allow for incremental upgrading of the housing areas.
- The development is regarded as Greenfield Development.
- Provide basic services and a holistic road design approach.
- Support IRDP housing grant development.
- Supported Zonings: **Residential Zone 1, 3 & 4**

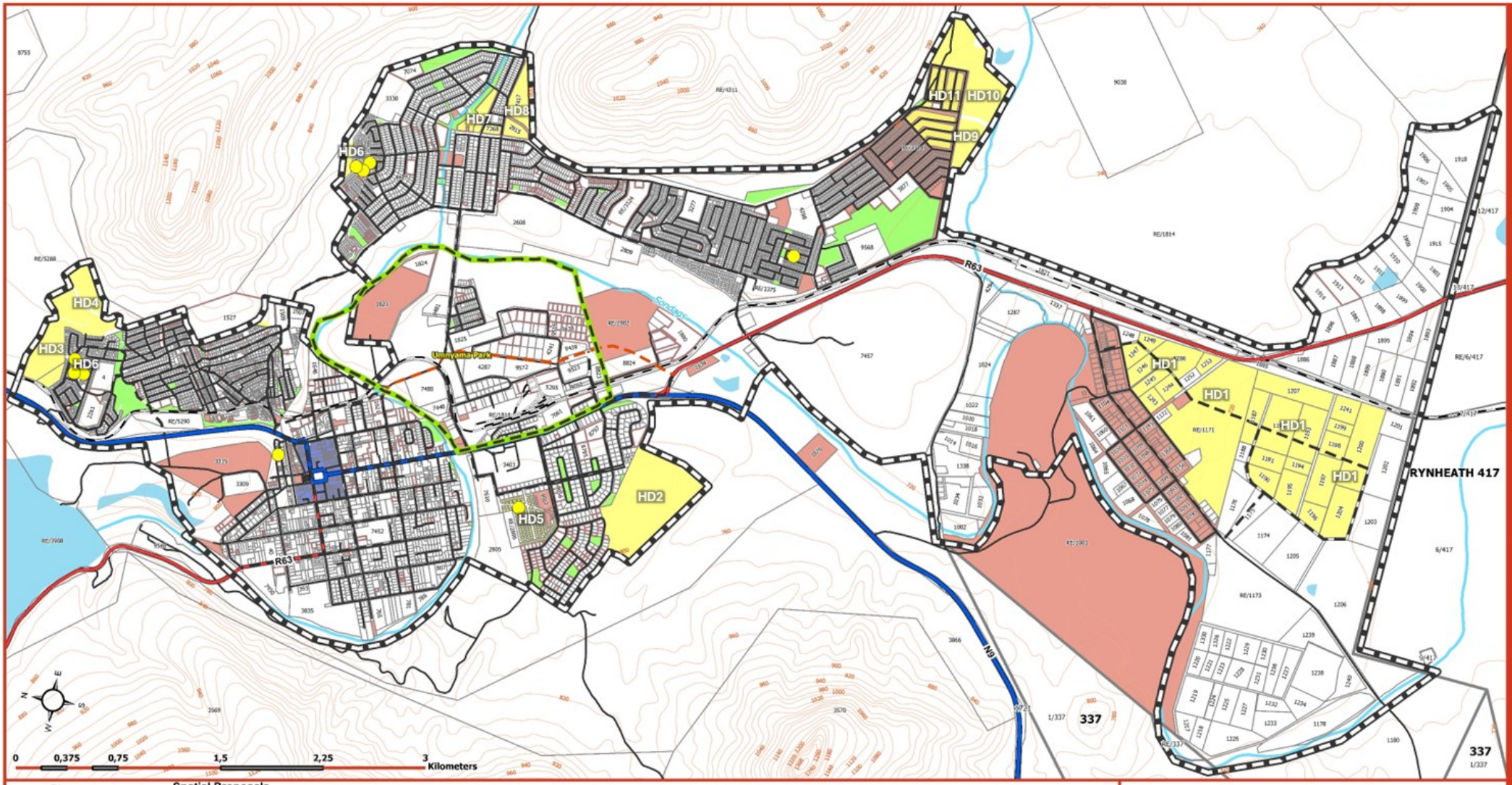
Medium-Density Infill Residential Development (HD10)

- The areas are approximately 19 hectares.
- Density Up to 40 Dwelling Units per Hectare.
- Allow for incremental upgrading of the housing areas.
- The development is regarded as Greenfield Development.
- Provide basic services and a holistic road design approach.
- Support IRDP housing grant development.
- Prioritize pedestrian-friendly design principles, with interconnected streets, sidewalks, and green spaces to promote walkability and community interaction.
- Supported Zonings: **Residential Zone 1, 3 & 4**

Medium Density Residential development (HD11)

- The areas are approximately 11.5 hectares.
- Density Up to 30 Dwelling Units per Hectare.
- Allow for incremental upgrading of the housing areas.
- The development is regarded as a formalisation of an existing informal settlement.
- Provide basic services and a holistic road design approach.
- Support IRDP housing grant development.
- Prioritize pedestrian-friendly design principles, with interconnected streets, sidewalks, and green spaces to promote walkability and community interaction.
- Supported Zonings: **Residential Zone 1 & Residential Zone 4**

Image 2: Karoo-style architecture should be incorporated as the design philosophy for housing developments, including affordable housing projects. This traditional aesthetic, characterised by simple lines, pitched roofs, verandas, and the use of local materials, should be embraced to maintain the regional heritage and enhance the visual appeal of the residential areas.



Rivers
Contours
Main / Provincial Road
National Road
Roads
Railway Lines
Wetlands
Parent Farm
Farm Portions
Erf

Spatial Proposals
Central Business Area (CBD)
Housing Development Area
Current Urban Edge
Proposed Umnyama Park

General Category
Municipal
Vacant
Public Place
Human Settlement Development

Map 18: Graaff Reinet (Human Settlement Development Areas)

Human Settlement Development Graaff Reinet

Source: Dr Beyers Naude SDF 2024

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4.2.3.4 SPATIAL STRUCTURING

The spatial structuring elements pertain to the proposed mixed-use development corridors and zones for the town. While the terminology for these corridors and zones may be consistent, they differentiate between areas designated for future development and those that are already developed. This section also addresses the Central Business Area, Industrial Development Focus Areas, and Institutional Zones. Additionally, it highlights key nodes identified for each town and references areas designated for government and municipal uses.

4.2.3.4.1 DENSIFICATION AREAS

Key Considerations for Densification in Graaff-Reinet:

- Densification will be guided by the specified density parameters for each zone, aligning with the town's spatial development framework.
- New developments must respect the existing architectural style and character of the neighbourhood, integrating with surrounding land uses.
- Adequate parking must be provided on-site to accommodate the increased density and avoid congestion.
- **A minimum erf size of 1,500 m²** is required for densification projects to ensure appropriate site layout and functionality.
- All densification initiatives are contingent upon the availability of adequate municipal services, including water, sewerage, and electricity.

4.2.3.4.2 MIXED-USE DEVELOPMENT CORRIDORS (MU)

Implement mixed-use corridors to support low-intensity business and retail development. Key areas include:

MU1- Low-intensity neighbourhood retail and business zones to promote access to necessities for local residents (neighbourhood service area, Informal trading is also supported and subject to the Informal trading and Hawkers Policy of the Municipality

- Supported Zonings: **Business Zone 2**

MU2 – Low-intensity business and retail services development corridor to support services and light industries, retail and shops, house shops, taverns, religious, office and institutional uses activities. Informal trading is also supported and subject to the Informal Trading and Hawkers Policy of the Municipality.

- Supported Zonings: **Business Zone 1, 2 & 3**

MU3 – High-intensity business and retail uses, including service and light industries, to be considered as a mixed-use development zone in support of retail, medical, business office and light industrial uses closer to the eastern residential areas of the greater Graaff Reinet area.

- Supported Zonings: **Business Zone 1, 3 & 4**

MU4 – Low-intensity tourism, accommodation, offices, medical consulting rooms and institutional uses to be supported.

- Supported Zonings: **Business Zone 2, Institution Zone 2 (Low-intensity medical uses) & Resort Zone**

MU5 – To promote medium to high-intensity land uses adjacent to the Central Business District, including overnight accommodation, Restaurants, medical consulting rooms, offices, and densification up to a maximum density of 35 dwellings per hectare, contingent upon service availability.

- Supported Zonings: **Business Zone 1, 2, 3 & 4**

MU6 – To promote low-intensity land uses, including overnight accommodation, light and service industries, offices, and densification up to a maximum density of 20 dwellings per hectare, contingent upon service availability.

- Supported Zonings: **Business Zone 2, Business Zone 3, Residential Zone 3 & Residential Zone 4**

MU7- to support high-intensity retail, business, automobile services, service stations, light and service industries and takeaway restaurants in support of the transient traffic flow through Graaff Reinet.

- Supported Zonings: **Business Zone 1, 3 & 4**

MU8- High and Medium intensity, Automobile, Light and Services Industries land use activities

- Supported Zonings: **Business Zone 3 & Business Zone 4**

4.2.3.4.3 INSTITUTIONAL DEVELOPMENT ZONES

Educational Facilities (IZ1)

- The following guidelines and uses are proposed:
- Provision of education facilities and related uses.
- Includes schools, crèches, tertiary facilities, and support activities.
- Supported Zonings: **Institution 1**

Community Services (IZ2)

The following guidelines and uses are proposed:

- Ensuring wheelchair-accessible parking spaces are available around the facility.
- Provision for worship facilities and related uses.
- Includes places of assembly
- Provision of a wide range of community facilities, including institutions.
- Supported Zonings: **Business Zone 1 & Institution 2**

Municipal and Government Use (IZ3)

Guidelines and supported uses encompass:

- Government and municipal uses, including magistrates' courts, municipal offices, police stations, and others.
- Ensuring the safety and accessibility of facilities for all individuals.
- Installing clear signage to facilitate access to services.
- Allocating adequate parking areas, including wheelchair-friendly spaces.
- Supported Zonings: **Institution 1, Authority Zone, Business Zone 1 & Business Zone 2**

Authority Precinct Area (IZ4)

- Designating a specific area for government and municipal purposes to facilitate the provision of necessary social and community services to the local community in the short, medium, and long term.
- Ensuring the integration of the precinct area with surrounding land use proposals and open space systems through urban design and street furniture development.
- Supported Zonings: **Institution 1, Institution 2, Authority Zone, Business Zone 1 & Business Zone 2**

Health Development Zone (IZ5)

A designated zone for health services and related facilities, including laboratories, ambulance services, and disaster management. Accessibility should prioritize non-motorized transport, with wheelchair-friendly parking areas provided. Traffic calming measures should be implemented sparingly around this zone. High-intensity residential or business uses that could significantly increase traffic to and from the health services area should be restricted.

- Supported Zonings: **Institution 2**

Also consider:

- Implement landscaping and greenery to create a healing environment conducive to well-being.
- Ensure adequate lighting and security measures to enhance safety for patients and staff, especially during night hours.
- Provide designated drop-off and pick-up zones for ambulances and emergency vehicles to optimize response times.
- Design the layout to facilitate efficient patient flow and minimize congestion within the health services zone.
- Incorporate sustainable design principles, such as energy-efficient buildings and water-saving features, to reduce environmental impact.
- Establish clear signage and wayfinding systems to guide patients and visitors to different facilities within the health zone.
- Include amenities like rest areas, waiting lounges, and recreational spaces to improve the overall experience for patients and their families.
- Collaborate with local healthcare providers and community organizations to ensure that the range of services offered meets the needs of the population.
- Plan for future expansion and scalability to accommodate potential growth in demand for healthcare services over time.

Cemetery Development (IZ6)

Areas designated for cemeteries and future cemetery expansion to accommodate future needs as they arise.

- Supported Zonings: **Authority Zone**

4.2.3.4.4 INDUSTRIAL DEVELOPMENT ZONE

Light and Services Industrial Development (IDZ1)

- An area designated for the light and services industries.
- Incorporate renewable energy sources, such as solar or wind power, to minimize environmental impact and promote sustainability.
- Encourage rainwater harvesting systems to conserve water resources and reduce reliance on municipal water supply.
- Promote the recycling of materials and waste within industrial processes wherever possible to minimize landfill waste and promote circular economy principles.
- Supported Zonings: **Business Zone 4 & Industrial Zone 1**

General Industrial Development (IDZ2)

- Land utilisation for manufacturing and general industrial purposes is intended within this zone.
- While allowance for non-industrial activities is possible, such activities should not undermine the primary industrial use of the land.
- Acknowledging the intensive nature of industrial operations, it is recognized that this land use may result in adverse effects on nearby properties and the surrounding environment. Therefore, activities categorized as noxious or posing high risk are prohibited within this land use zone.
- Furthermore, it is essential to upgrade the infrastructure and implement signage within the zone to enhance the visibility of the services provided and improve market awareness of the industrial activities conducted therein.
- Supported Zonings: **Industrial Zone 1 & Industrial Zone 2 (Excluding Noxious Industry)**

General and Agri Industries (IDZ3)

- An area spanning approximately 4 hectares is designated for future industrial expansion, primarily to bolster agricultural value chain activities.
- Hazardous industries are supported within this zone.
- Additionally, provisions should be made for heavy truck parking and overnight facilities, including ablution amenities.
- Supported Zonings: **Industrial Zone 1 & Industrial Zone 2**

4.2.3.4.5 CENTRAL BUSINESS DISTRICT (CBD)

The following guidelines are to be considered:

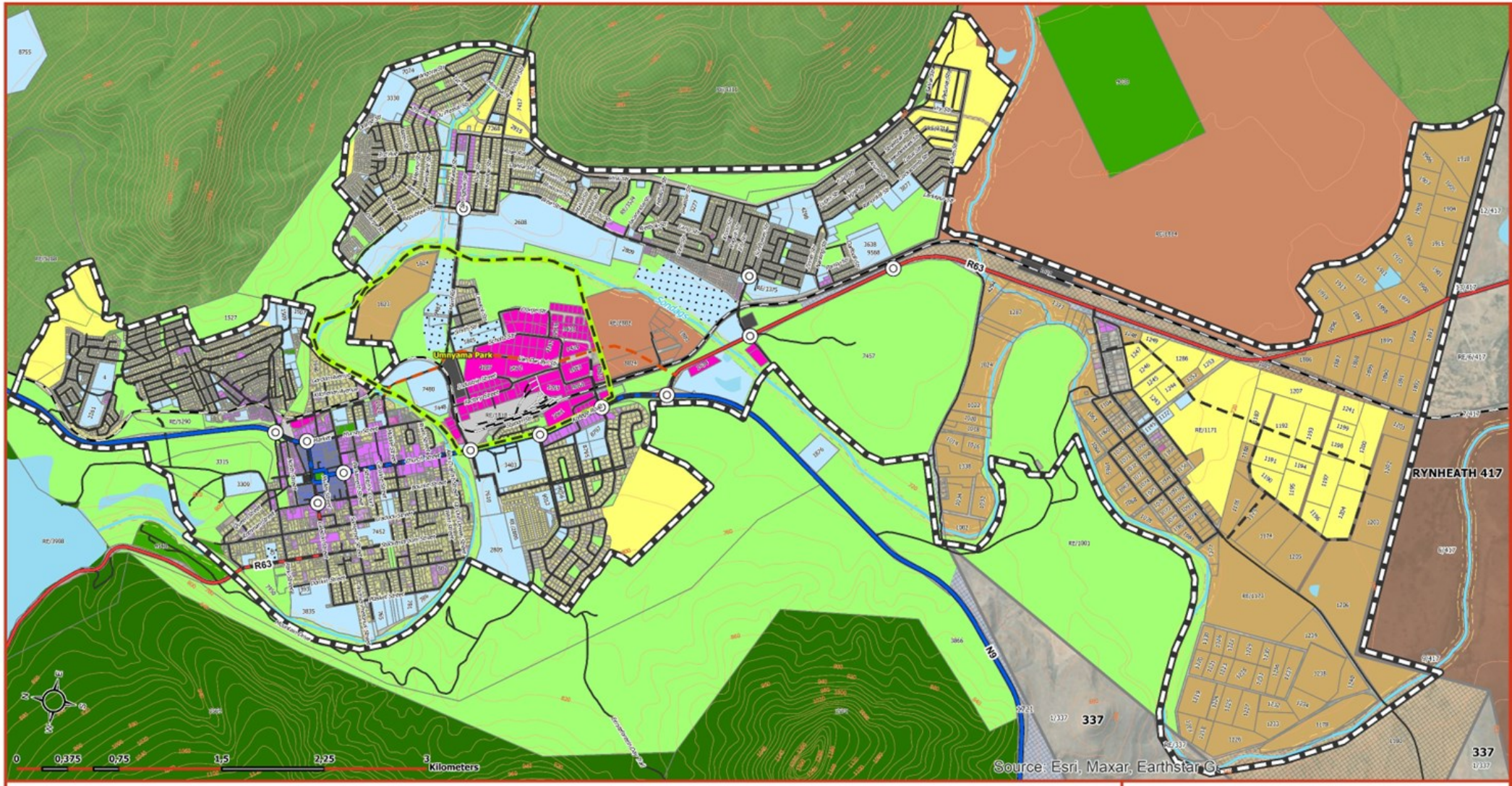
- Give priority to the renovation and revitalization of existing structures to promote urban renewal and preserve historical character.
- Enhance the streetscape with aesthetically pleasing street furniture and greenery to create a welcoming and pedestrian-friendly environment.
- Designate areas within the CBD for attractive pedestrian spaces that encourage community gatherings and social interactions.
- Promote a mix of retail, business, and service establishments to diversify economic activities and enhance vibrancy.
- Encourage efficient land use by prioritizing retail spaces on ground floors and offices or residences above to maximize space and functionality.
- Ensure adequate parking facilities are provided and explore traffic flow improvements to accommodate the needs of visitors and residents.
- Limit building height to three storeys to maintain the scale of the CBD and preserve scenic views of the surrounding area.
- Incorporate elements of local culture and heritage into building design and public spaces to reinforce the town's identity.
- To support the arts and crafts approach towards the development and upgrading of the CBD area.
- Upgrade and redevelop the open space area of Angel Park, situated along Van Den Berg and Barry Streets, with a specific emphasis on creating a space that reflects the culture and history of the town.
- In the redesign, consider a variety of activities and events.

- Supported Zonings: **Business Zone 1, 2, 3 & 4**

4.2.3.4.6 HERITAGE AND TOURISM ZONE

Key considerations within the Heritage and Tourism Zone include:

- Use plastic or aluminium windows/doors on street facades while maintaining authenticity with the town's heritage design.
- Ensure materials used match the heritage style of the area.
- Obtain approval from local authorities, and in provincial heritage areas, consent from the Eastern Cape Provincial Heritage Resources Authority is required.
- Submit sketch plans and site photographs before preparing final plans to incorporate recommendations.
- Depart from zoning regulations if proposed developments align with heritage area aims.
- Maintain street-facing building edges, limited to two stories high from any adjacent street boundary.
- For original buildings, additions can be made at the rear of the existing courtyard.
- Refer to the South African Heritage Resources Agency for guidance, established under the National Heritage Resources Act.
- Supported Zonings: **Resort Zone, Protected Area, Passive Open Space, Opens Space Zone 1, Opens Space Zone 2 & Residential Zone 3**



Rivers
Contours
Main / Provincial Road
National Road
Roads
Railway Lines
Wetlands
Parent Farm
Farm Portions
Erf

Protected Agricultural Areas

Graaff Reinett Spatial Proposals

Agriculture
Cemetery
Central Business District (CBD)
Heritage and Tourism Area
Residential Development Area
Industrial Area
Key Intersection
Activity Corridor
Proposed Bypass Route

Infrastructure Development
Institutional Area
Mixed Use Corridor
Open Space System
Protected Areas
Small holdings
Transportation
Current Urban Edge
Proposed Umnyama Park

Existing Spatial Planning Land Use

Agriculture
Heritage and Tourism Area
Industrial
Informal Settlement
Institutional Area
Mixed Use
Open Space System
Residential Development Area
Smallholdings
Transportation

River Buffer Distance

20 m
50 m

Map 21: Graaff Reinet (Spatial Proposals)

Local Spatial Proposals Graaff Reinet -Full Extent-

Source: Dr Beyers Naude SDF 2024

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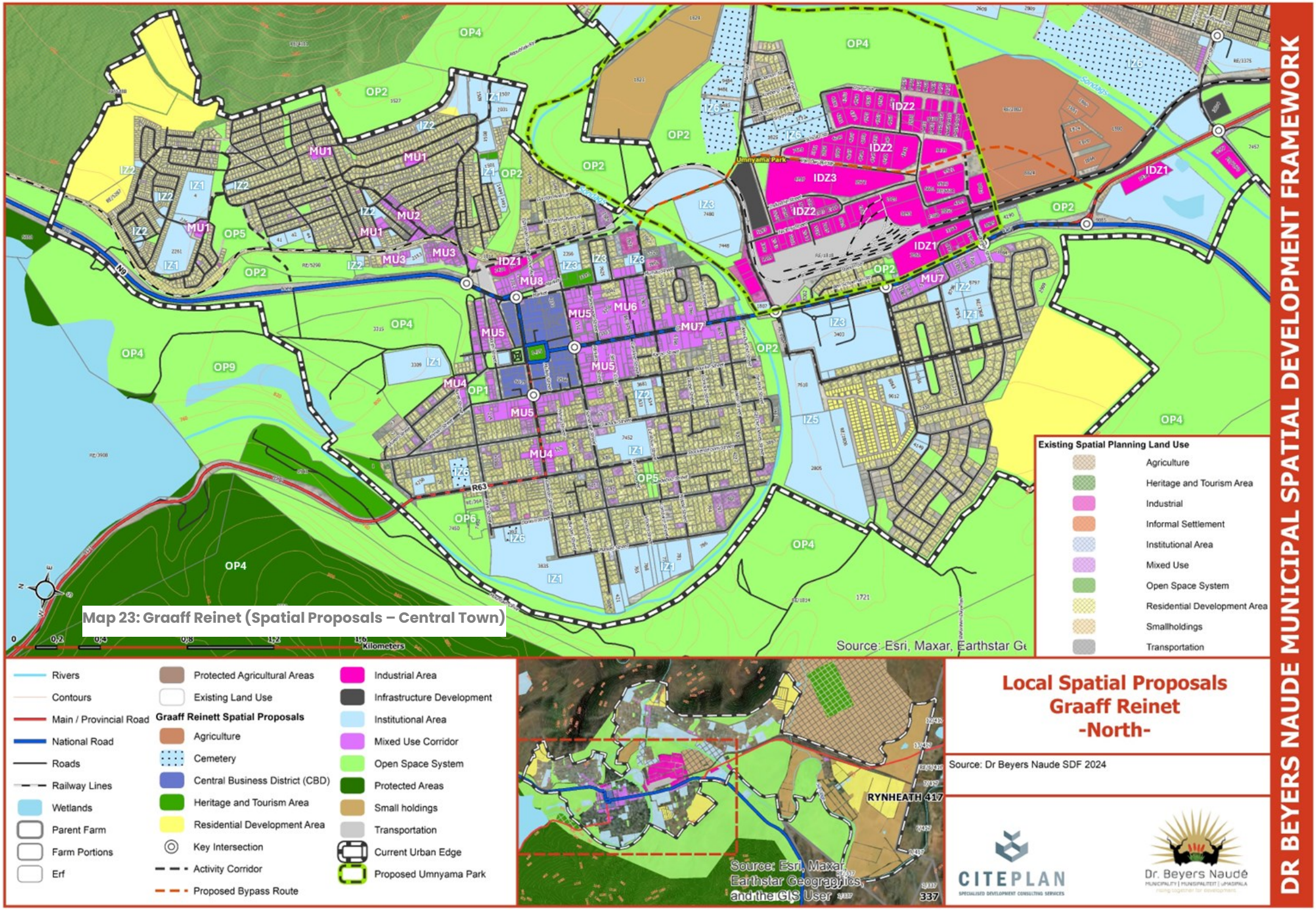
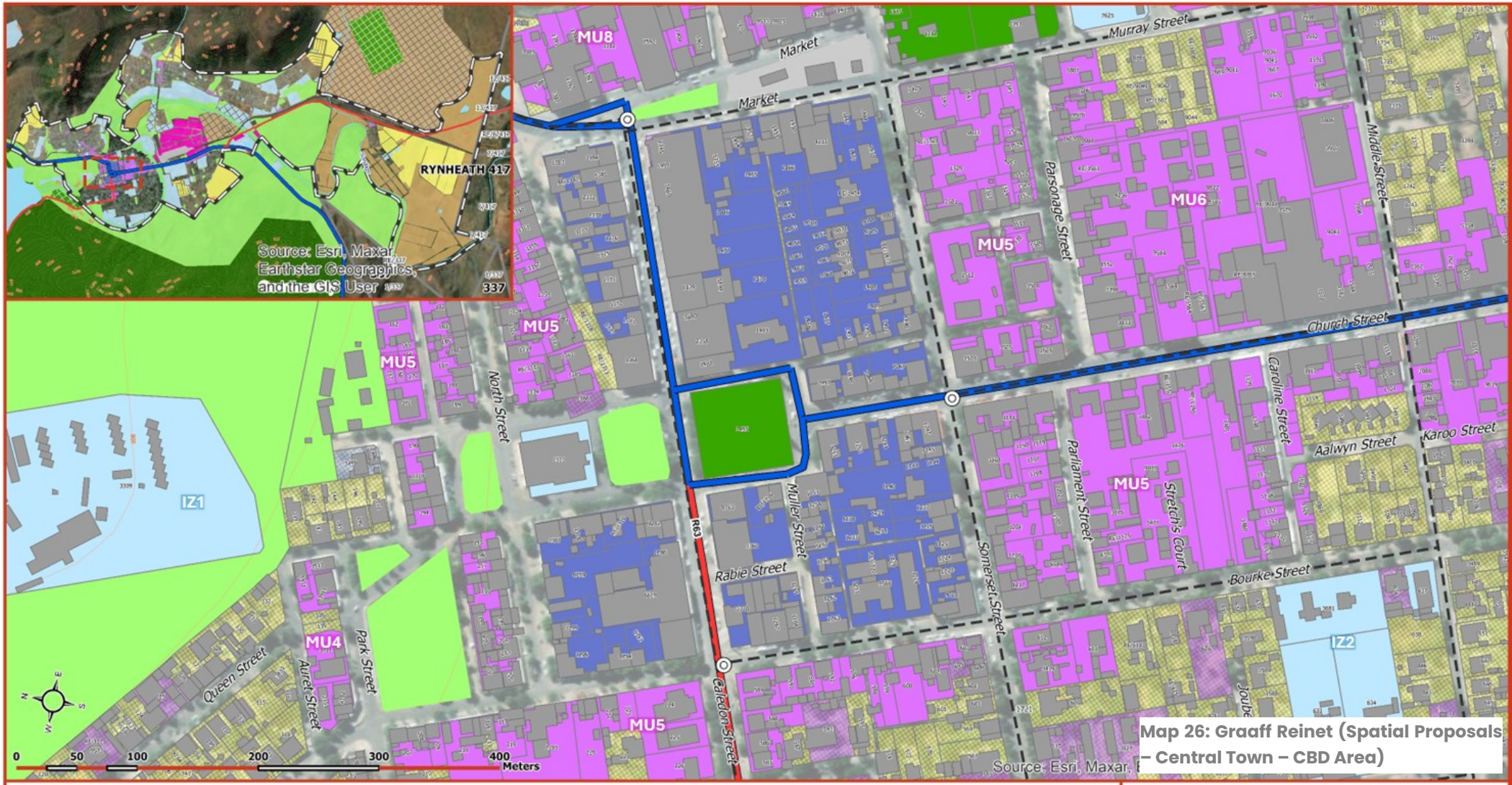

DR BEYERS NAUDE MUNICIPAL SPATIAL DEVELOPMENT FRAMEWORK
Existing Spatial Planning Land Use
Agriculture
Heritage and Tourism Area
Industrial
Informal Settlement
Institutional Area
Mixed Use
Open Space System
Residential Development Area
Smallholdings
Transportation
Source: Esri, Maxar, Earthstar Ge
Map 23: Graaff Reinet (Spatial Proposals – Central Town)
0 0,2 0,4 0,8 1,2 1,6 Kilometers
Rivers
Contours
Main / Provincial Road
National Road
Roads
Railway Lines
Wetlands
Parent Farm
Farm Portions
Erf
Protected Agricultural Areas
Existing Land Use
Graaff Reinett Spatial Proposals
Agriculture
Cemetery
Central Business District (CBD)
Heritage and Tourism Area
Residential Development Area
Key Intersection
Activity Corridor
Proposed Bypass Route
Industrial Area
Infrastructure Development
Institutional Area
Mixed Use Corridor
Open Space System
Protected Areas
Small holdings
Transportation
Current Urban Edge
Proposed Umnyama Park
RYNHEATH 417
Source: Esri, Maxar, Earthstar Geographics, and the GIS User
Local Spatial Proposals
Graaff Reinet
-North-
Source: Dr Beyers Naude SDF 2024
CITEPLAN
Dr. Beyers Naudé



Map 26: Graaff Reinet (Spatial Proposals – Central Town – CBD Area)

- Rivers
- Contours
- Main / Provincial Road
- National Road
- Railway Lines
- Wetlands
- Parent Farm
- Farm Portions
- Erf
- Protected Agricultural Areas
- Existing Land Use

Graaff Reinett Spatial Proposals

- Agriculture
- Cemetery
- Central Business District (CBD)
- Heritage and Tourism Area
- Residential Development Area
- Industrial Area
- Infrastructure Development
- Institutional Area
- Mixed Use Corridor
- Open Space System
- Protected Areas
- Small holdings
- Transportation
- Public Place
- Current Urban Edge
- Building Footprint

Existing Spatial Planning Land Use

- Agriculture
- Heritage and Tourism Area
- Industrial
- Informal Settlement
- Institutional Area
- Mixed Use
- Open Space System
- Residential Development Area
- Smallholdings
- Transportation

Local Spatial Proposals Central Business District Graaff Reinet

Source: Dr Beyers Naude SDF 2024

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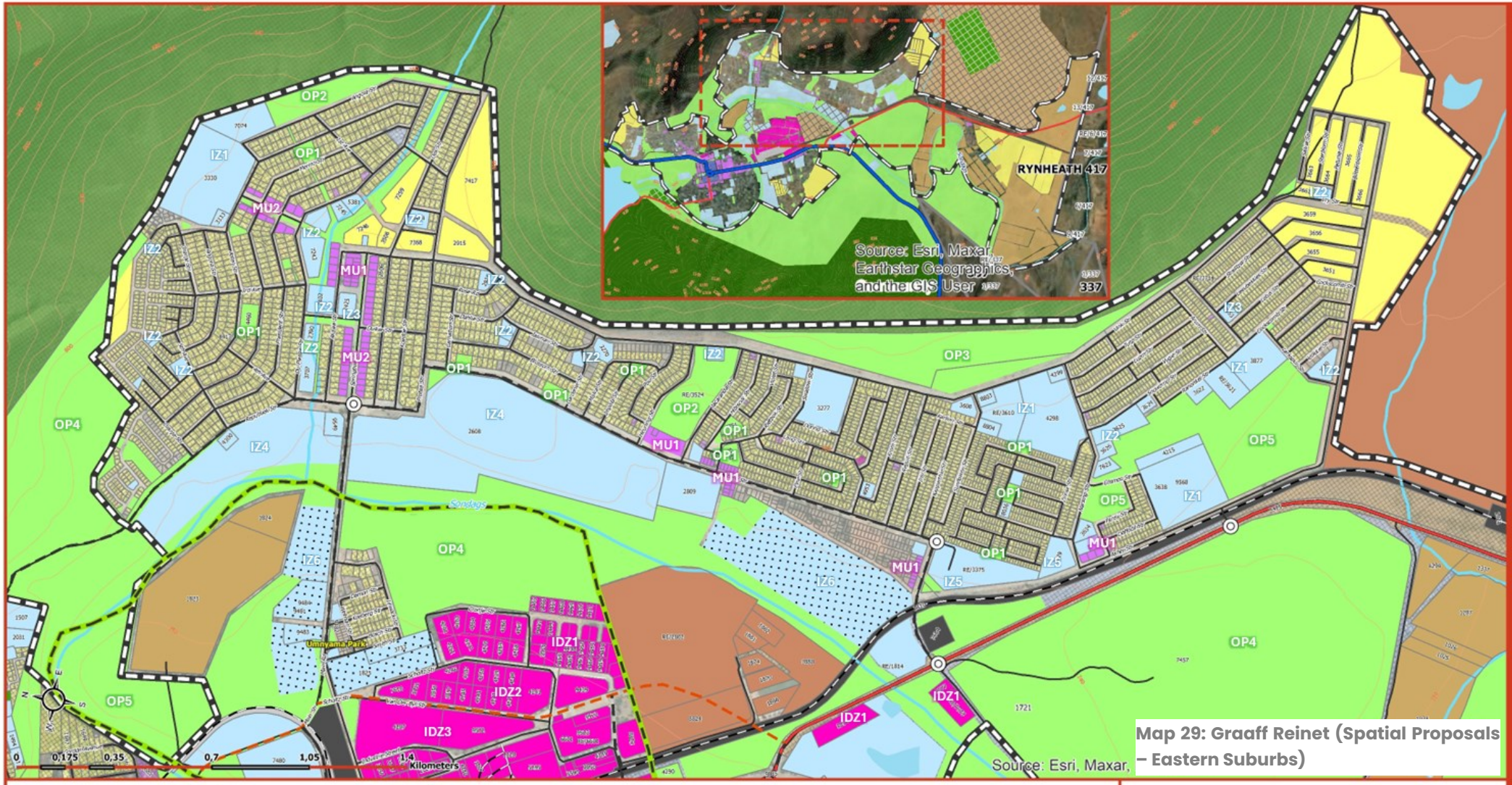

Map 29: Graaff Reinet (Spatial Proposals – Eastern Suburbs)

- Rivers
- Contours
- Main / Provincial Road
- National Road
- Roads
- Railway Lines
- Wetlands
- Parent Farm
- Farm Portions
- Erf

Graaff Reinett Spatial Proposals

- Agriculture
- Cemetery
- Central Business District (CBD)
- Heritage and Tourism Area
- Residential Development Area
- Industrial Area
- Key Intersection
- Activity Corridor
- Proposed Bypass Route
- Protected Agricultural Areas
- Infrastructure Development
- Institutional Area
- Mixed Use Corridor
- Open Space System
- Protected Areas
- Small holdings
- Transportation
- Current Urban Edge
- Proposed Umnyama Park

Existing Spatial Planning Land Use

- Agriculture
- Heritage and Tourism Area
- Industrial
- Informal Settlement
- Institutional Area
- Mixed Use
- Open Space System
- Residential Development Area
- Smallholdings
- Transportation

Local Spatial Proposals Graaff Reinet -East-

Source: Dr Beyers Naude SDF 2024

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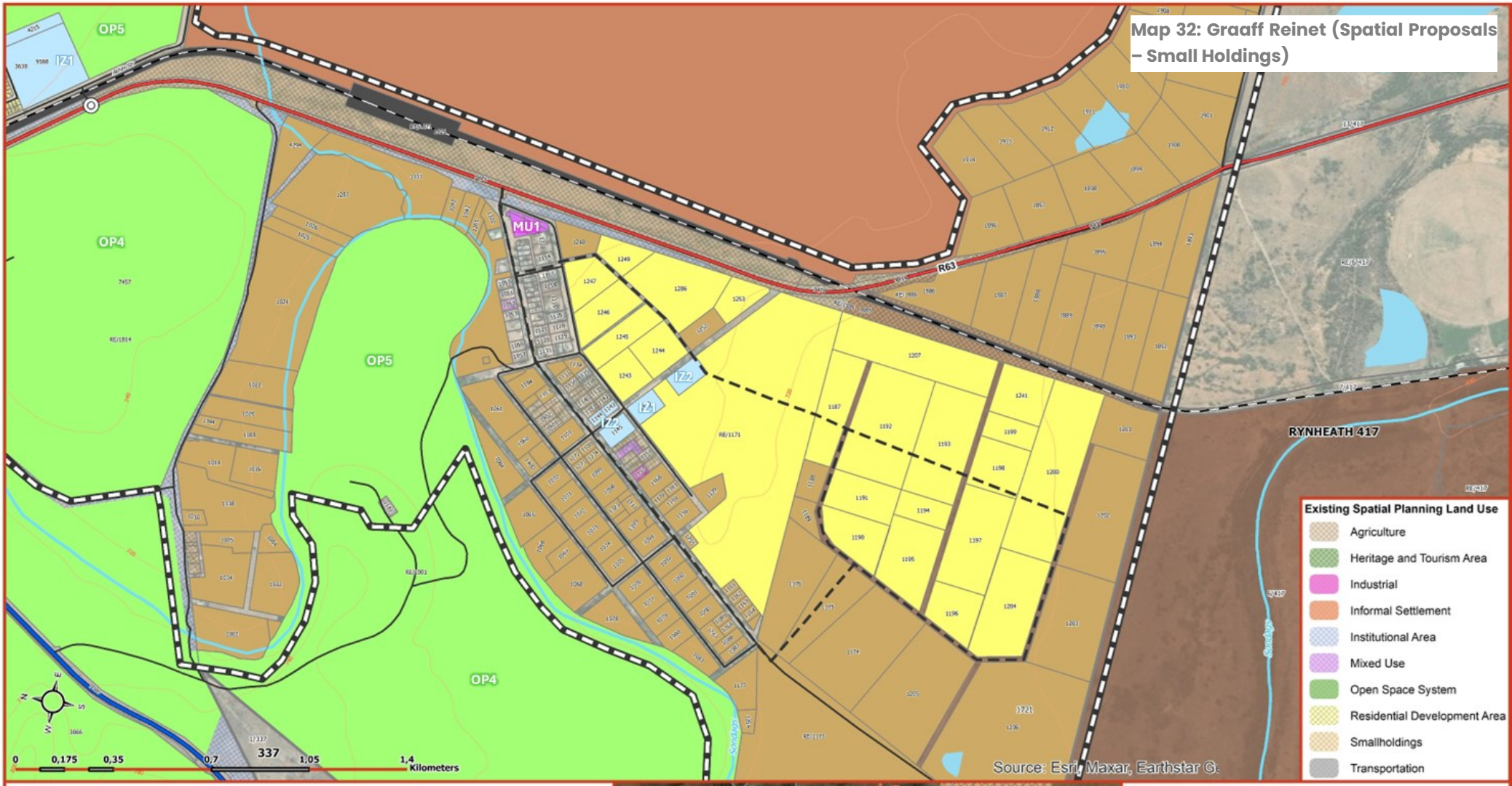
Map 32: Graaff Reinet (Spatial Proposals – Small Holdings)



Rivers
Contours
Main / Provincial Road
National Road
Roads
Railway Lines
Wetlands
Parent Farm
Farm Portions
Erf

Protected Agricultural Areas
Existing Land Use

Graaff Reinett Spatial Proposals

Agriculture
Cemetery
Central Business District (CBD)
Heritage and Tourism Area
Residential Development Area
Key Intersection
Activity Corridor
Proposed Bypass Route

Industrial Area
Infrastructure Development
Institutional Area
Mixed Use Corridor
Open Space System
Protected Areas
Small holdings
Transportation
Current Urban Edge

Local Spatial Proposals Graaff Reinet -South-

Source: Dr Beyers Naude SDF 2024

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4.2.3.5 INFRASTRUCTURE DEVELOPMENT

4.2.3.5.1 TRANSPORTATION DEVELOPMENT

Transportation in Graaff Reinet requires significant improvements to enhance safety, accessibility, and regional connectivity. Safer pedestrian crossings over the N9, particularly in the northern areas, are essential to connect communities divided by the highway. Additionally, there is a need to bolster public transportation networks, especially along the R61, N9, R63 and Main Road, to facilitate easier access to the CBD. Non-motorized transport infrastructure must be improved to accommodate cyclists and pedestrians, particularly along proposed mixed-use corridors. To better serve residents, taxi and bus stops should be strategically placed in key locations, including the R61, N9, R63 and Main Road. Moreover, exploring the development of the proposed bypass route through Umnyama Park could aid traffic congestion through the centre of town. These initiatives aim to make transportation more efficient, safer, and conducive to the town's growth and development.

4.2.3.5.2 INFRASTRUCTURE NEEDS ASSESSMENT

- To ensure the continued growth and well-being of the town, several critical infrastructure development projects are identified:
- Implement traffic calming measures strategically placed within residential areas and near schools to improve road safety and reduce speeding incidents.
- Deploy Wi-Fi towers in public areas and key locations to ensure residents and tourists have access to dependable internet services.
- Build sidewalks and cycling paths along major roads and pedestrian routes to encourage walking and cycling as alternative modes of transportation.
- Upgrade identified key intersections to enhance traffic flow and safety. Consider assessing the intersections on the R61 at Somerset Street and Market Square, as well as Caledon Street and the R63, to enhance traffic circulation to and from the CBD.
- Upgrading of access street to Masizakhe from the N9 connecting to Themba Road.
- Upgrading of the Graaff Reinet Water Treatment Works and Wastewater Treatment Works to improve the Blue Drop and Green Drop Score respectively as well as the availability of continuous water supply to the town.

Table 9: Bulk Services Implications for Proposals

SERVICES IMPLICATIONS	
Water Implications	
The annual average daily demand (AADD) for the proposed population	780 kl /day
The annual average daily water demand (AADD) for the population (Liters per second)	9.09 l /s
The Total Annual Average Daily Demand (TAADD) for the proposed population	1048.81 kl
The Total Annual Average Daily Demand per Second (TAADD) for the proposed population	12.13 kl
The total Peak Hour demand (TPHD)	2700 kl /day
The total Peak Hour demand (TPHD) - Liters per second	31.66 l /s
The total Elevated Storage/Towers supply rate from the storage reservoir should be > -	34.83 kl
The total reservoir storage for the proposed development should be no less than 48 hours of TAADD	3649.95 kl
The total elevated storage volume (6 Hours TAADD and assuming no backup power available	456.24 kl
Sewer Implications	
Sewerage Proposed Average Daily Flow	669 kl /day
Sewer: Peak Dry Weather Flow	1674 kl /day
Sewer: Peak Wet Weather Flow	1925 kl /day
The total sewer effluent peak	22.29 l/l
Electrical Demand	
Total Maximum demand (kVA)	19460
Total Maximum Demand (MVA)	19.46

The infrastructure assessment for Graaff-Reinet indicates substantial needs in water, sewer, and electrical services. The annual average daily demand (AADD) for water is estimated at 780 kl/day, with a peak hour demand of 2 700 kl/day, requiring a storage capacity of at least 3 649.95 kl. Sewer infrastructure must handle peak wet weather flows of up to 1 925 kl/day. The projected maximum

electrical demand is 19 460 kVA, highlighting the need for grid upgrades to meet future demand. These requirements emphasize the importance of comprehensive infrastructure planning and investment to support Graaff-Reinet's anticipated growth.

4.2.4 CONCLUSION

The housing development areas are designed to accommodate the projected growth, which includes at least 1,600 households. Additionally, there are provisions for areas dedicated to meeting future needs for socio-economic facilities and services within the town.

In conclusion, the spatial and land use proposals for Riversdale should focus on several key areas to enhance the town's functionality and appeal. Developing a public transportation system with adequate parking and designated areas for freight, truck, and bus movement is crucial to support both freight and tourist traffic along the N9. Special attention is needed to create a bypass route through Umnyama Park to alleviate traffic congestion within the town centre. The town should support a diverse range of housing typologies to cater to various income groups.

Additionally, all developments will be contingent on the availability of bulk services, which could impact the five-year urban edge proposals. The Central Business District requires urban regeneration and upgrading to integrate better with the open space surrounding the CBD, adhering to aesthetic urban design principles. Preserving and sustaining the town's old buildings and heritage resources is essential.

Finally, a gateway feature is proposed to enhance tourism development at the main access road from the N9, further promoting Graaff Reinet as a destination.

4.3 ABERDEEN

4.3.1 HISTORY

Aberdeen, a historic Karoo town, is nestled between Graaff-Reinet and Willowmore. The town's economy revolves around agriculture, notably sheep farming and wool production, and is increasingly popular for its Victorian-era architecture, including the prominent Dutch Reformed Church with its distinctive steeple. Aberdeen's origins date back to the late 17th century when the Cape Governor, Simon van der Stel, sent Ensign Shriver to trade with the Inqua Khoisan, under Chief Heykon, marking the first documented contact between indigenous people and Europeans in the area. This encounter set the stage for the migration of Trekboers who sought freedom from the restrictive policies of the Dutch East India Company in Cape Town.

The farm Brakkefontein, owned by Jan Vorster, became the site of the new settlement in 1855 when it was sold to the Dutch Reformed Church. Named after the birthplace of Reverend Andrew Murray Sr., Aberdeen became a thriving community. In 1817, British Governor Lord Charles Somerset signed the town's first title deeds, and the area's population grew around the church as land parcels were sold beginning in 1857.

During the Second Anglo-Boer War (1899–1902), Aberdeen saw intense local conflict. Some residents joined Boer forces, despite their official status as British subjects. The Aberdeen Cemetery stands as a record of this turbulent period, with graves and memorials commemorating Boer and British soldiers alike. Commandant Carel van Heerden, who died while trying to secure horses for the Boer forces, is buried here, alongside a memorial for 25 British soldiers who fell in the district.

2nd Order Node

Today, Aberdeen attracts visitors drawn to its history, scenic surroundings, and heritage buildings, maintaining its reputation as a charming and historically rich Karoo town.

4.3.2 SOCIO-ECONOMIC CONSIDERATIONS

The socio-economic considerations for Aberdeen focus on leveraging its unique character and addressing key challenges to promote sustainable growth, preserve heritage, and enhance the quality of life for its residents. The following points outline the primary considerations:

- As a small rural node, Aberdeen's economy relies heavily on extensive and intensive agricultural activities. Expanding access to employment opportunities beyond agriculture is essential, particularly through supporting small businesses, creative industries, and tourism-related ventures.
- Positioned along the N9, Aberdeen has strategic potential to tap into passing tourist traffic. Enhancing tourism infrastructure, creating visitor attractions, and marketing the town's unique character can help boost local economic activity. The town's Victorian architecture, wide streets, and historical landmarks provide a strong foundation for heritage tourism.
- The old Karoo-style heritage architecture, including the iconic Dutch Reformed Church steeple (reputedly the tallest in South Africa) and the ornate post office building, are central to Aberdeen's identity. Preserving these historic structures and incorporating Karoo-themed design guidelines into new developments will help maintain the town's charm and appeal.

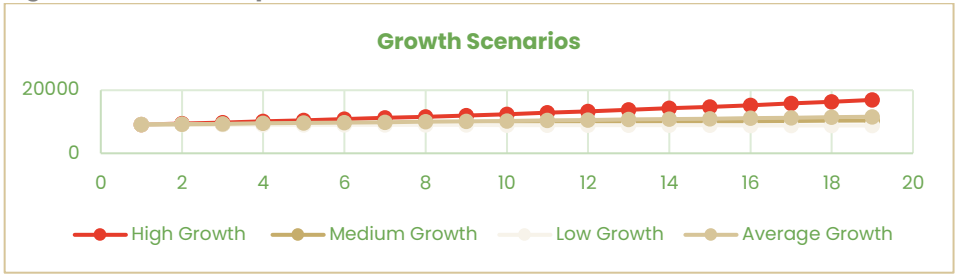
- Investment in upgrading water, sewerage, and road infrastructure is necessary to support the growing needs of the community and the Aberdeen Provincial Hospital. Urban regeneration efforts should focus on revitalizing key areas of the town, improving public spaces, and enhancing basic services.
- Aberdeen's proximity to the Camdeboo Mountains and its surrounding natural landscapes offer opportunities for eco-tourism and recreational activities. Protecting the riverine areas and integrating green spaces into the urban layout will help maintain ecological balance, support biodiversity, and offer residents outdoor recreational options.
- Aberdeen has become a haven for artists, retirees, and creative individuals drawn to its relaxed lifestyle and vibrant cultural scene. Supporting local art, community projects, and cultural events can help strengthen the town's social fabric and attract more visitors.
- Town beautification projects, such as landscaping, street furniture, and public art installations, should be prioritized to enhance the visual appeal of Aberdeen. Efforts to restore and maintain Victorian-era buildings will contribute to the town's unique aesthetic and strengthen its position as a heritage destination.

In summary, the socio-economic strategy for Aberdeen emphasizes preserving its historical character, enhancing tourism potential, improving infrastructure, and supporting economic diversification. By building on its unique assets and addressing key challenges, Aberdeen can foster a vibrant, sustainable, and inclusive community that celebrates its rich heritage and appeals to both residents and visitors.

4.3.2.1 POPULATION GROWTH PROJECTION FOR ABERDEEN (2011 - 2040)

The population projections for Aberdeen show varying growth scenarios based on historical trends and potential future conditions. By 2025, the population is expected to range from 9,071 (Low Growth) to 10,113 (High Growth). By 2030, it could increase to between 8,986 (Low Growth) and 12,007 (High Growth). In 2035, projections range from 8,902 (Low Growth) to 14,255 (High Growth), reflecting a broader gap influenced by economic and migration trends. By 2040, the population may range from 8,818 (Low Growth) to 16,925 (High Growth), while the Medium Growth scenario estimates a population of 10,385. These projections highlight the need for flexible and adaptive planning to accommodate different growth rates and ensure sustainable development in Aberdeen.

Figure 11: Possible Population Growth Scenarios for Aberdeen



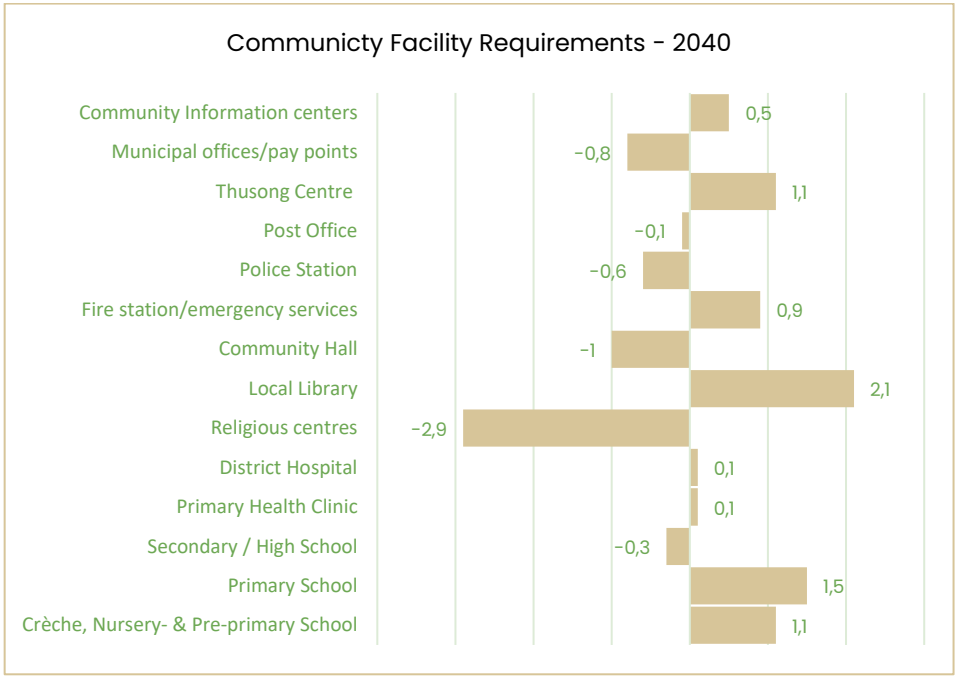
4.3.2.2 SOCIAL FACILITY NEEDS

Table 10: Social Facility Needs Assessment

SOCIAL FACILITIES NEEDS ASSESSMENT					
Facility	**Existing**	**Need 2024**	**Need 2030**	**Need 2040**	**Ha Required**
Education					
Crèche, Nursery- & Pre-primary School	1	1	1	1	0.06
Primary School	2	1	1	2	3.6
Secondary / High School	2	-1	0	0	-1.38
Health					
Primary Health Clinic	2	0	0	0	0.01
District Hospital	1	0	0	0	0.1
Community Services					
Religious centres	8	-4	-3	-3	-0.435
Local Library	0	2	2	2	0.0315
Community Hall	2	-1	-1	-1	-0.5
Fire station/emergency services	0	1	1	1	1.08
Police Station	1	-1	-1	-1	-0.15
Post Office	1	0	0	0	-0.005
Thusong Centre	0	1	1	1	1.1
Municipal offices/pay points	1	-1	-1	-1	-0.24

SOCIAL FACILITIES NEEDS ASSESSMENT					
Facility	**Existing**	**Need 2024**	**Need 2030**	**Need 2040**	**Ha Required**
Community Information Centres	0	1	1	1	0.005

The social facilities need assessment for Aberdeen projects a significant increase in demand for educational services by 2040, driven by anticipated population growth and urban expansion. The analysis highlights the necessity for additional infrastructure, with an estimated 5 hectares of land required to meet these needs. In education, the town will need 1 new crèche and pre-primary school along with 2 additional primary schools requiring a total of 4.2 hectares. Community services demand will stay consistent up to 2040 however certain facilities are already required in 2024. These include 2 libraries, a Thusong Centre and a community information centre. These facilities would require slightly more than 1 ha of land. An additional 1 ha of land is also required to accommodate a fire station to service Aberdeen and provide emergency services. While existing facilities like police stations and municipal offices may suffice, there is a clear need for enhanced infrastructure across education and community amenities to accommodate future growth. This expansion aims to support sustainable development, improve service delivery, and enhance the overall quality of life for residents in Aberdeen.



4.3.3 SPATIAL PLANNING CONSIDERATIONS

4.3.3.1 KEY SPATIAL PLANNING GUIDELINES:

- Strengthen the preservation of Aberdeen's unique Karoo-style heritage and low-key historical character in accordance with the National Heritage Resources Act, ensuring compliance with guidelines from the South African Heritage Resources Agency (SAHRA).
- Restrict new industrial development to designated zones, focusing on low-impact activities that align with the town's rural character and minimize environmental impact.
- Support the growth of tourism-related facilities, including accommodations, cultural attractions, and visitor services, positioning Aberdeen as a gateway hub for eco-tourism, adventure activities, and heritage tourism along the N9.
- Promote agricultural activities and value chain development, including agri-tourism projects and local farm-to-table initiatives, to boost the local economy and showcase the region's agricultural heritage.

- Limit building heights to a maximum of two storeys to maintain the small-town, rural character of Aberdeen and ensure compatibility with existing architectural styles.
- Establish a network of walking routes and trails that highlight historical sites and integrate the town's open spaces, creating a cohesive recreational and tourism experience.
- Create a well-connected open space network with green corridors, pedestrian pathways, and street furniture, enhancing public areas and promoting non-motorized transport.
- Encourage low-intensity, mixed-use activities along main access roads, supporting local businesses while maintaining the town's tranquil and rural atmosphere.
- Facilitate the growth of sustainable agricultural practices, including the development of local value chains and processing facilities, to enhance economic resilience and create employment opportunities.

These spatial planning guidelines aim to preserve Aberdeen's historical charm, support sustainable development, and position the town as a vibrant, tourism-focused gateway to the Karoo region.

4.3.3.2 OPEN SPACE SYSTEM

Active Open Spaces (OP1)

- Ensure flexibility in layout and amenities to accommodate various recreational pursuits and community events.
- Include playgrounds with swings, slides, and climbing structures tailored to different age groups.
- Establish consistent design standards for active open spaces to create a cohesive and visually appealing environment.
- Develop outdoor gyms to improve community health and diversify the use of the properties.
- Supported Zonings: **Open Space Zone 1**

Passive Open Spaces (OP2)

- Incorporate local vegetation such as various species of aloes, succulents and grasses into open space design, creating scenic routes and gardens.
- Employing native flora in landscaping and gardening endeavours fosters sustainability. Indigenous plants are naturally suited to local environments, demanding minimal water, fertilizer, and pesticides compared to exotic species. They offer cost-effective maintenance solutions, conserve water reservoirs, and bolster the indigenous ecosystem.
- Develop well-marked trails linking open spaces, offering opportunities for exploration.
- Identify picturesque spots with amenities like tables and benches for picnics.
- Provide strategically placed waste management facilities for cleanliness.
- Place restroom facilities strategically for user convenience and hygiene.
- Ensure proper lighting and maintenance along hiking trails and public facilities.
- Use lighting and landscaping for visibility and surveillance.
- Establish pathways linking passive spaces to active recreation zones.
- Supported Zonings: **Open Space Zone 2 & Passive Open Space**

Conservation Management (OP3)

- Buffer zones should be implemented around the sensitive riverine areas along the Kraai River/Stream area to protect the critical biodiversity and limit flood damage.
- Conduct thorough ecological assessments to understand the biodiversity, habitats, and ecological processes present within conservation areas.
- Use this information to inform management strategies and prioritize conservation efforts.
- Designate specific areas for low-impact recreational activities such as hiking, birdwatching, and nature photography, while restricting access to sensitive areas.
- Enhance ecosystem resilience through measures such as habitat connectivity, water resource management, and invasive species control.
- Supported Zonings: **Protected Area & Open Space Zone 2**

Sport Facilities (OP4)

To upgrade existing sports facilities by considering the following:

- Choose a centrally located site with ample space for various sports facilities and parking.

- Ensure zoning regulations permit a mix of indoor and outdoor sports activities.
- Design multipurpose facilities for padel tennis, field sports, and other sports clubs.
- Include amenities like changing rooms, seating, and equipment rental.
- Ensure sufficient parking spaces and accessible pathways.
- Enhance the facilities with greenery, seating areas, and amenities like drinking fountains.
- Create a welcoming environment for visitors to relax and socialize.
- Involve local sports clubs and community members in the planning process.
- Develop a diverse program of sports activities and events to engage residents of all ages.
- Supported Zonings: **Open Space Zone 1 & Resort Zone**

Recreation Facilities (OP5)

Support the redevelopment and upgrading of the Fonteinbos Nature Reserve area to enhance tourism, considering developments such as hiking trails, picnic facilities, education centres or other low-risk infrastructure due to the area's critical biodiversity. Development should only be started once an approved nature reserve management plan is put in place to manage the development of facilities.

- Supported Zonings: **Open Space Zone 2, Passive Open Space & Protected Area**

General Open Space Guidelines

To enhance and sustainably manage open spaces in urban areas, the following general guidelines are proposed:

- Use drought-tolerant and waterwise plant species to reduce irrigation needs.
- Implement rainwater harvesting systems and greywater recycling for efficient water use in green spaces.
- Integrate open spaces with urban areas through a network of footpaths, trails, and paved walking routes.
- Design multi-use pathways to accommodate walking, running, and cycling, improving access and encouraging active use.
- Prioritize the use of native plants and trees to enhance biodiversity and reduce maintenance.
- Incorporate fruit-bearing trees to provide shade, contribute to food security, and enhance the aesthetic value of public spaces.
- Design open spaces to support a variety of uses, including areas for community events, markets, and recreational activities.
- Provide versatile, multi-purpose facilities that cater to different recreational needs.
- Encourage local community involvement in the care and maintenance of open spaces through volunteer programs.
- Establish advisory committees with community stakeholders to guide the planning and improvement of open spaces.

Image 3: Typical Open Space approach to be followed for Aberdeen's Open Space System

Open Space System Aberdeen

- Rivers
- Wetlands
- Parent Farm
- Farm Portions
- Erf
- Contours
- Main / Provincial Road
- National Road
- Roads
- Railway Lines

Terrestrial - CBA

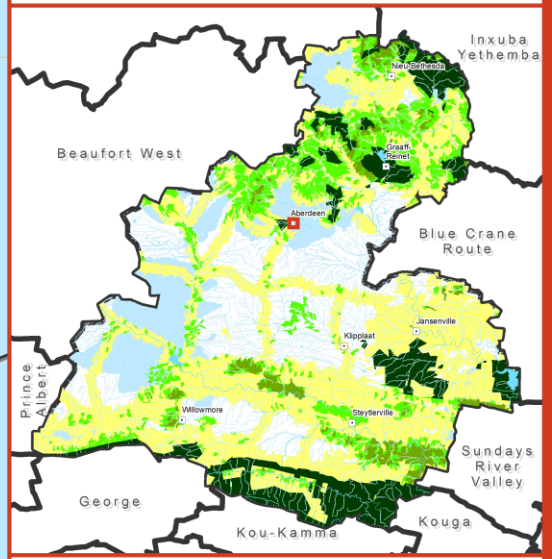
- PA
- CBA 1
- CBA 2
- ESA 1
- ESA 2
- Other

Freshwater - CBA

- CBA 1
- CBA 2
- ESA 1
- ESA 2
- Other

Aberdeen Spatial Proposals

- Open Space System
- Current Urban Edge
- Activity Corridor



Source: Dr Beyers Naude SDF 2024

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4.3.3.3 HUMAN SETTLEMENTS DEVELOPMENT

The housing development strategy for Aberdeen addresses the growing need for diverse residential options while preserving the town's distinct Karoo heritage. By 2030, an estimated 5.4 hectares of land will be needed, increasing to 12.6 hectares by 2040, to accommodate a projected demand of 126 additional housing units by 2030 and 293 units by 2040. The proposed housing zones include a mix of low-density, medium-density, and greenfield developments, focusing on efficient land use, formalization of informal settlements, and infill projects that enhance connectivity and integrate well with existing infrastructure.

Key development zones include HD1 for low-density residential use, catering to short-term housing needs, and HD3 for medium-density formalization projects that prioritize sustainable design. Greenfield projects such as HD4 and HD5 offer higher-density options with incremental upgrades and service provision. Additionally, HD6 targets informal settlement upgrades, while HD7 focuses on high-density social housing. The comprehensive approach aims to accommodate future growth, promote walkability, and support a variety of housing types while enhancing the quality of life and maintaining the rural character of Aberdeen.

Table 11: Aberdeen Housing Assessment

Housing Development Needs - 2030		
Ha Required - @ 10 U/Ha	12.5726	ha
Ha Required - @ 20 U/Ha	6.28628	ha
Ha Required - @ 40 U/Ha	3.14314	ha
Ha Required - @ 50 U/Ha	2.51451	ha
TOTAL – Distributed Densities	**5.4062**	ha
Housing Development Needs - 2040		
Ha Required - @ 10 U/Ha	29.3411	ha
Ha Required - @ 20 U/Ha	14.6705	ha
Ha Required - @ 40 U/Ha	7.33527	ha
Ha Required - @ 50 U/Ha	5.86822	ha
TOTAL – Distributed Densities	**12.6167**	ha

Total number of Additional Houses Required	2022	2030	2040
	0	**126**	**293**
Total Area Proposed (Spatial Proposals)	**Ha**	**Ruling Erf Size**	**Possible Housing Opportunities**
	262,45	298	4060,925

The housing development forecast for Aberdeen shows a moderate increase in land requirements to accommodate projected population growth. The area proposed for housing developments covers approximately 262 ha of land and could provide up to 4060 units at an average erf size of 298 m². The proposed development strategy aims to cater to this growth while integrating sustainable design principles and maintaining the town's unique Karoo character.

Medium-Density Infill Residential Development (HD1)

- The area covers slightly more than 7.4 hectares and requires a holistic road design approach to enable more effective planning.
- The current layout would have to be redesigned to accommodate a higher density of 20 dwelling units per hectare.
- The housing development should aim to provide dwelling units for the GAP market accommodating the medium-income households that require affordable housing options.
- Supported Zonings: **Residential Zone 1 & Residential Zone 4 (Townhouse)**

Low-Density Residential Development (HD2)

- The area covers approximately 1 hectare and is intended to cater to the short-term need of low-density residential erven.
- The maximum density allowed is 20 dwelling units per hectare.
- Various housing types are encouraged to cater to diverse needs.
- Supported Zonings: **Residential Zone 2 & Residential Zone 3**

Medium Density Residential development (HD3)

- A Land Use Application is required to address the re-layout of the multiple residential dwelling units, consolidation and possible rezoning are required to formalise and correct the existing cadastral issue.
- The area is approximately 7.7 hectares in extent.

- Density Up to 35 Dwelling Units per Hectare.
- Prioritize pedestrian-friendly design principles, with interconnected streets, sidewalks, and green spaces to promote walkability and community interaction.
- Incorporate sustainable design features such as rainwater harvesting systems, and energy-efficient appliances to reduce environmental impact.
- Supported Zonings: **Residential Zone 1 & Residential Zone 4**

Medium-Density Infill Residential Development (HD4)

- The areas are approximately 8.7 hectares.
- Density Up to 40 Dwelling Units per Hectare.
- Allow for incremental upgrading of the housing areas.
- The development is regarded as Greenfield Development.
- Provide basic services.
- Support IRDP housing grant development.
- Supported Zonings: **Residential Zone 1 & Residential Zone 4**

Medium Density Residential development (HD5)

- The areas are approximately 4.9 hectares.
- Density Up to 40 Dwelling Units per Hectare.
- Allow for incremental upgrading of the housing areas.
- The development is regarded as Greenfield Development.
- Provide basic services.
- Support IRDP housing grant development.
- Prioritize pedestrian-friendly design principles, with interconnected streets, sidewalks, and green spaces to promote walkability and community interaction.
- Supported Zonings: **Residential Zone 1, 4 & 5**

Informal Settlement Upgrading (HD6)

- The areas are approximately 13 hectares.
- Density Up to 35 Dwelling Units per Hectare.
- Allow for incremental upgrading of the housing areas.
- The development is regarded as Greenfield Development.
- Provide basic services.
- Support IRDP housing grant development.
- Prioritize pedestrian-friendly design principles, with interconnected streets, sidewalks, and green spaces to promote walkability and community interaction.
- Supported Zonings: **Residential Zone 1 & Residential Zone 4**

Medium Density Residential Development (HD7)

- The areas are approximately 3 hectares.
- Density Up to 40 Dwelling Units per Hectare.
- Allow for incremental upgrading of the housing areas.
- The development is regarded as Greenfield Development.
- Provide basic services.
- Support IRDP housing grant development.
- Prioritize pedestrian-friendly design principles, with interconnected streets, sidewalks, and green spaces to promote walkability and community interaction.
- Supported Zonings: **Residential Zone 1 & Residential Zone 4**

Medium-Density Infill Residential Development (HD8)

- Formalisation of the unplanned low-cost housing development units (RDPs), a land use application is required to address the subdivision and rezoning of the existing dwelling units to create individual cadastral erven.
- The area covers slightly more than 9 hectares and requires a holistic road design approach to enable more effective planning.
- Allowing densities of up to 40 dwelling units per hectare.
- Prioritize pedestrian-friendly design principles, with interconnected streets, sidewalks, and green spaces to promote walkability and community interaction.
- Supported Zonings: **Residential Zone 1 & Residential Zone 4**

Medium-Density Infill Residential Development (HD9)

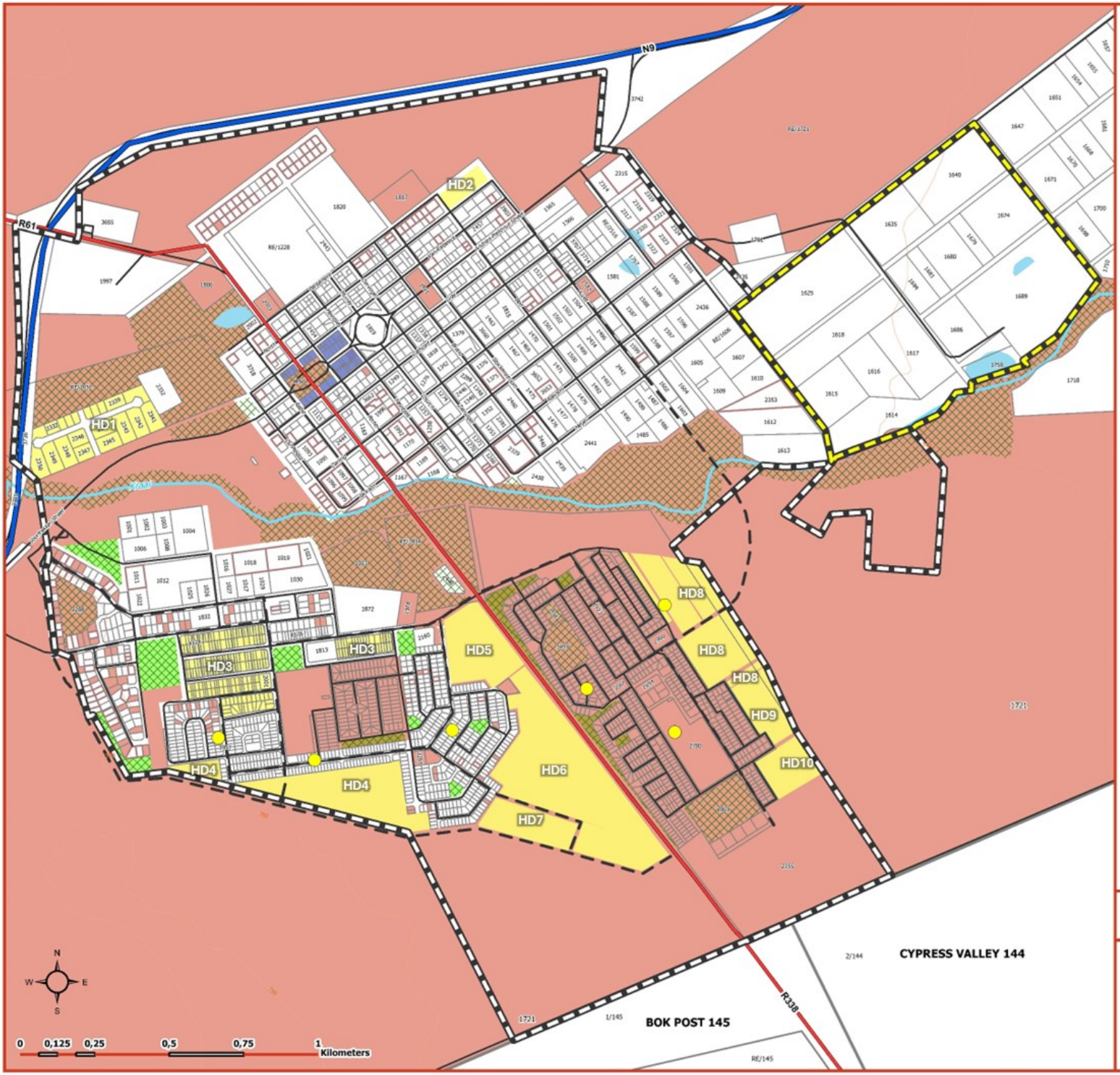
- The areas are approximately 3.1 hectares.
- Density Up to 40 Dwelling Units per Hectare.
- Allow for incremental upgrading of the housing areas.
- The development is regarded as Greenfield Development.

- Provide basic services.
- Support IRDP housing grant development.
- Prioritize pedestrian-friendly design principles, with interconnected streets, sidewalks, and green spaces to promote walkability and community interaction.
- Supported Zonings: **Residential Zone 1 & Residential Zone 4**

Medium-Density Infill Residential Development (HD10)

- The areas are approximately 2.6 hectares.
- Density Up to 40 Dwelling Units per Hectare.
- Allow for incremental upgrading of the housing areas.
- The development is regarded as Greenfield Development.
- Provide basic services.
- Support IRDP housing grant development.
- Prioritize pedestrian-friendly design principles, with interconnected streets, sidewalks, and green spaces to promote walkability and community interaction.
- Supported Zonings: **Residential Zone 1 & Residential Zone 4**

Image 4: Karoo-style architecture should be incorporated as the design philosophy for housing developments, including affordable housing projects. This traditional aesthetic, characterized by simple lines, pitched roofs, verandas, and the use of local materials, should be embraced to maintain the regional heritage and enhance the visual appeal of the residential areas.



Human Settlement Development Aberdeen

- Rivers
- Contours
- Wetlands
- Main / Provincial Road
- Parent Farm
- National Road
- Farm Portions
- Roads
- Erf
- Railway Lines
- Human Settlement Development

Aberdeen Spatial Proposals

- Open Space System
- Housing Development Area
- Central Business Area (CBD)
- Current Urban Edge
- 15 Year Urban Edge
- Activity Corridor

General Category

- Municipal
- Vacant
- Public Place

Map 38: Aberdeen (Housing Development Areas)

Source: Dr Beyers Naude SDF 2024

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4.3.3.4 SPATIAL STRUCTURING

The spatial structuring elements pertain to the proposed mixed-use development corridors and zones for the town. While the terminology for these corridors and zones may be consistent, they differentiate between areas designated for future development and those that are already developed. This section also addresses the Central Business Area, Industrial Development Focus Areas, and Institutional Zones. Additionally, it highlights key nodes identified for each town and references areas designated for government and municipal uses.

4.3.3.4.1 DENSIFICATION AREAS

To consider the following densification zones for Aberdeen:

DZ1 - Densification southwest of Rabie Street between Cathcart and Jackson Street as well as between Parliament and Van Riebeek Street. This area is designated low-density residential infill development with a maximum density of 20 dwelling units per hectare. Supported zonings include **Residential Zone 3 & 4**

DZ2 - Densification south of the Thembalesizwe Cemetery along Hoffman and Van Zyl Street. This area supports densification of up to 30 dwelling units per hectare and should accommodate the ancillary community uses to develop sustainable integrated human settlements. Supported zonings include **Residential Zone 3, 4 & 5**

MIXED-USE ZONES (MIX)

MIX1 – A mixed-use zone for tourism and recreation is proposed to accommodate a range of facilities, including overnight accommodation, tourist attractions, and supporting amenities. The zone will feature a service station, retail spaces for showcasing Karoo artefacts, and outlets for local produce and products, creating a hub for visitors to experience the unique offerings of the area.

- Supported Zonings: **Residential Zone 3, Resort Zone, Open Space Zone 1 & Open Space Zone 2**

MIX2 – A mixed-use agri-processing zone is proposed to support and enhance local agricultural value chains. The zone is specifically intended to facilitate activities that add value to agricultural products, excluding any noxious or harmful uses. It aims to create opportunities for local farmers and producers by providing a strategic location with high visibility to passing traffic, thereby enabling direct sales and access to regional markets.

- Supported Zonings: **Agricultural Zone 2, Industrial Zone 1 & Industrial Zone 2 (Excluding Noxious Use)**

4.3.3.4.2 MIXED-USE DEVELOPMENT CORRIDORS (MU)

Implement mixed-use corridors to support low-intensity business and retail development. Key areas include:

MU1 – **Agri-Tourism Corridor**

This corridor focuses on farm stalls and agri-tourism development, creating opportunities for local agricultural products and experiences. It is designed to showcase local produce, attract tourists, and provide amenities like roadside farm stalls, local craft shops, and tasting rooms. Activities in this area will emphasize the region's agricultural heritage and direct sales of fresh produce.

- Supported Zonings: **Resort Zone, Passive Open Space, Agricultural Zone 2, Business Zone 2 & Business Zone 3**

MU2 – **Low-Intensity Mixed Use and Medical Services**

This area supports low-intensity mixed-use activities, including retail, medical consulting rooms, and office spaces. It serves as a local service hub, providing essential amenities and professional services in a well-integrated, low-impact environment.

- Supported Zonings: **Business Zone 2 & Business Zone 3**

MU3 – **Mixed-Use with Light Industrial Focus**

The MU3 corridor accommodates low-intensity retail and mixed-use activities, with an emphasis on supporting light and service industries. The area is intended for businesses requiring minimal heavy infrastructure but needing strategic

location access, such as workshops, small-scale manufacturing, and service-based enterprises.

- Supported Zonings: **Business Zone 3 & Business Zone 4**

MU4 – Tourism Development Corridor

This corridor is tailored to tourism-related uses, including overnight accommodation, retail, and business activities that cater to visitors. It aims to enhance the local tourism experience by offering a mix of tourist facilities, restaurants, craft shops, and recreational services, contributing to the overall tourism appeal of the area.

- Supported Zonings: **Residential Zone 3, Business Zone 3, Resort Zone, Passive Open Space, Open Space Zone 1 & Open Space Zone 2**

MU5 – Aberdeen Central Business Support Corridor

This corridor supports low-intensity mixed-use activities in alignment with the Aberdeen Central Business Area. It includes retail, business, tourism-related services, overnight accommodation, offices, and institutional uses. Industrial uses are not supported to preserve the character of the area. Key streets include Ziervogel, Murray, Meintjies, Porter, Hoop, Rabie, Van Riebeeck, Voortrekker, and Grey Streets.

- Supported Zonings: **Business Zone 1**

MU6 – Gateway Tourism Corridor

The MU6 corridor serves as a gateway to the Central Business District (CBD), with a strong focus on tourism-oriented uses. It supports overnight accommodation, tourist facilities, curio shops, and institutional activities, enhancing the visitor experience as they approach the CBD. The area aims to create a welcoming and visually appealing entrance to the town.

- Supported Zonings: **Residential Zone 3, Business Zone 2, Resort Zone, Passive Open Space, Open Space Zone 1 & Open Space Zone 2**

MU7 – Mixed-Use Corridor with Visual Impact Management

This area supports a mix of light industries, service industries, and institutional uses while aiming to minimise negative visual impacts along Andries Pretorius Street. The focus is on maintaining an aesthetically pleasing environment, supporting small-scale commercial activities that do not detract from the street's visual character.

- Supported Zonings: **Business Zone 2, 3 & 4**

MU8 – Mixed-Use Neighbourhood Services

Informal trading and small-scale business and retail activities are encouraged, aligned with the Municipality's Informal Trading and Hawkers Policy.

- Supported Zonings: **Business Zone 2**

4.3.3.4.3 INSTITUTIONAL DEVELOPMENT ZONES

Educational Facilities (IZ1)

The following guidelines and uses are proposed:

- Provision of education and related uses.
- Includes schools, crèches, tertiary facilities, and support activities.
- Supported Zonings: **Institution 1**

Community Services (IZ2)

The following guidelines and uses are proposed:

- Ensuring wheelchair-accessible parking spaces are available around the facility.
- Provision for worship facilities and related uses.
- Includes places of assembly
- Provision of a wide range of community facilities, including institutions.
- Supported Zonings: **Institution 2 & Business Zone 1**

Municipal and Government Use (IZ3)

Guidelines and supported uses encompass:

- Government and municipal uses, including magistrates' courts, municipal offices, police stations, and others.
- Ensuring the safety and accessibility of facilities for all individuals.
- Installing clear signage to facilitate access to services.
- Allocating adequate parking areas, including wheelchair-friendly spaces.

- Supported Zonings: **Institution 1, Authority Zone, Business Zone 1 & Business Zone 2**

Authority Precinct Area (IZ4)

- Designating a specific area for government and municipal purposes to facilitate the provision of necessary social and community services to the local community in the short, medium, and long term.
- Ensuring the integration of the precinct area with surrounding land use proposals and open space systems through urban design and street furniture development.
- Supported Zonings: **Institution 1, Institution 2, Authority Zone, Business Zone 1 & Business Zone 2**

Health Development Zone (IZ5)

A designated zone for health services and related facilities, including laboratories, ambulance services, and disaster management. Accessibility should prioritize non-motorized transport, with wheelchair-friendly parking areas provided. Traffic calming measures should be implemented sparingly around this zone. High-intensity residential or business uses that could significantly increase traffic to and from the health services area should be restricted.

- Supported Zonings: **Institution 2**

Also consider:

- Implement landscaping and greenery to create a healing environment conducive to well-being.
- Ensure adequate lighting and security measures to enhance safety for patients and staff, especially during night hours.
- Provide designated drop-off and pick-up zones for ambulances and emergency vehicles to optimize response times.
- Design the layout to facilitate efficient patient flow and minimize congestion within the health services zone.
- Incorporate sustainable design principles, such as energy-efficient buildings and water-saving features, to reduce environmental impact.
- Establish clear signage and wayfinding systems to guide patients and visitors to different facilities within the health zone.
- Include amenities like rest areas, waiting lounges, and recreational spaces to improve the overall experience for patients and their families.
- Collaborate with local healthcare providers and community organizations to ensure that the range of services offered meets the needs of the population.
- Plan for future expansion and scalability to accommodate potential growth in demand for healthcare services over time.

Cemetery Development (IZ6)

Areas designated for cemeteries and future cemetery expansion to accommodate future needs as they arise.

- Supported Zonings: **Authority Zone**

4.3.3.4.4 INDUSTRIAL DEVELOPMENT ZONE

Light and Services Industrial Development (IDZ1)

- An area designated for the light and services industries.
- Incorporate renewable energy sources, such as solar or wind power, to minimize environmental impact and promote sustainability.
- Encourage rainwater harvesting systems to conserve water resources and reduce reliance on municipal water supply.
- Promote the recycling of materials and waste within industrial processes wherever possible to minimize landfill waste and promote circular economy principles.
- Supported Zonings: **Industrial Zone 1 & Business Zone 4**

4.3.3.4.5 CENTRAL BUSINESS DISTRICT (CBD)

The following guidelines are to be considered:

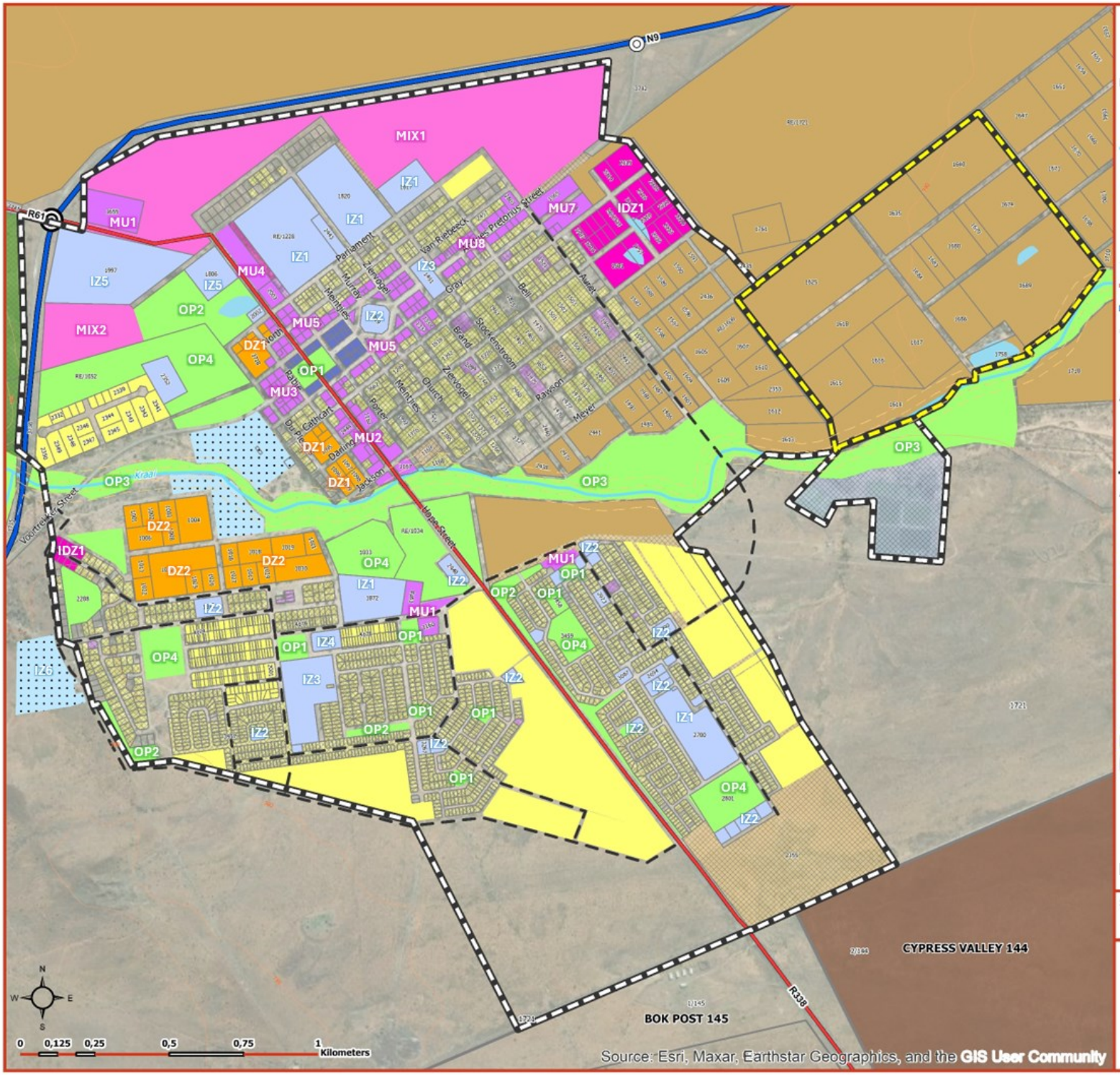
- Give priority to the renovation and revitalisation of existing structures to promote urban renewal and preserve historical character.
- Enhance the streetscape with aesthetically pleasing street furniture and greenery to create a welcoming and pedestrian-friendly environment.

- Designate areas within the CBD for attractive pedestrian spaces that encourage community gatherings and social interactions.
- Promote a mix of retail, business, and service establishments to diversify economic activities and enhance vibrancy.
- Encourage efficient land use by prioritizing retail spaces on ground floors and offices or residences above to maximize space and functionality.
- Ensure adequate parking facilities are provided and explore traffic flow improvements to accommodate the needs of visitors and residents.
- Limit building height to three storeys to maintain the scale of the CBD and preserve scenic views of the surrounding area.
- Incorporate elements of local culture and heritage into building design and public spaces to reinforce the town's identity.
- To support the arts and crafts approach towards the development and upgrading of the CBD area.
- Upgrade and redevelop the open space area opposite the Municipality, situated along Van Den Berg and Barry Streets, with a specific emphasis on creating a space that reflects the culture and history of the town.
- In the redesign, consider a variety of activities and events.
- Supported Zonings: **Business Zone 1, 2, 3 & 4**

4.3.3.4.6 HERITAGE AND TOURISM ZONE

Key considerations within the Heritage and Tourism Zone include:

- Use plastic or aluminium windows/doors on street facades while maintaining authenticity with the town's heritage design.
- Ensure materials used match the heritage style of the area.
- Obtain approval from local authorities, and in provincial heritage areas, consent from the Eastern Cape Provincial Heritage Resources Authority is required.
- Submit sketch plans and site photographs before preparing final plans to incorporate recommendations.
- Depart from zoning regulations if proposed developments align with heritage area aims.
- Maintain street-facing building edges, limited to two stories high from any adjacent street boundary.
- For original buildings, additions can be made at the rear of the existing courtyard.
- Refer to the South African Heritage Resources Agency for guidance, established under the National Heritage Resources Act.
- Supported Zonings: **Resort Zone, Passive Open Space, Open Space Zone 2 & Protected Area**



Local Spatial Proposals Aberdeen

River Buffer Distance

- 20 m
- 50 m
- Rivers
- Wetlands
- Parent Farm
- Farm Portions
- Erf
- Contours
- Main / Provincial Road
- National Road
- Railway Lines
- Existing Land Use
- Protected Agricultural Areas

Existing Spatial Planning Land Use

- Agriculture
- Heritage and Tourism Area
- Industrial
- Informal Settlement
- Institutional Area
- Mixed Use
- Open Space System
- Residential Development Area
- Smallholdings
- Transportation

Aberdeen Spatial Proposals

- Gateway
- Key Intersection
- Activity Corridor

Aberdeen Spatial Proposals

- Cemetery
- Central Business District (CBD)
- Densification Area
- Residential Development Area
- Industrial Area
- Institutional Area
- Mixed Use Corridor
- Mixed Use Area
- Open Space System
- Small holdings
- Current Urban Edge
- 15 Year Urban Edge

Map 41: Aberdeen (Spatial Proposals)

Source: Dr Beyers Naude SDF 2024

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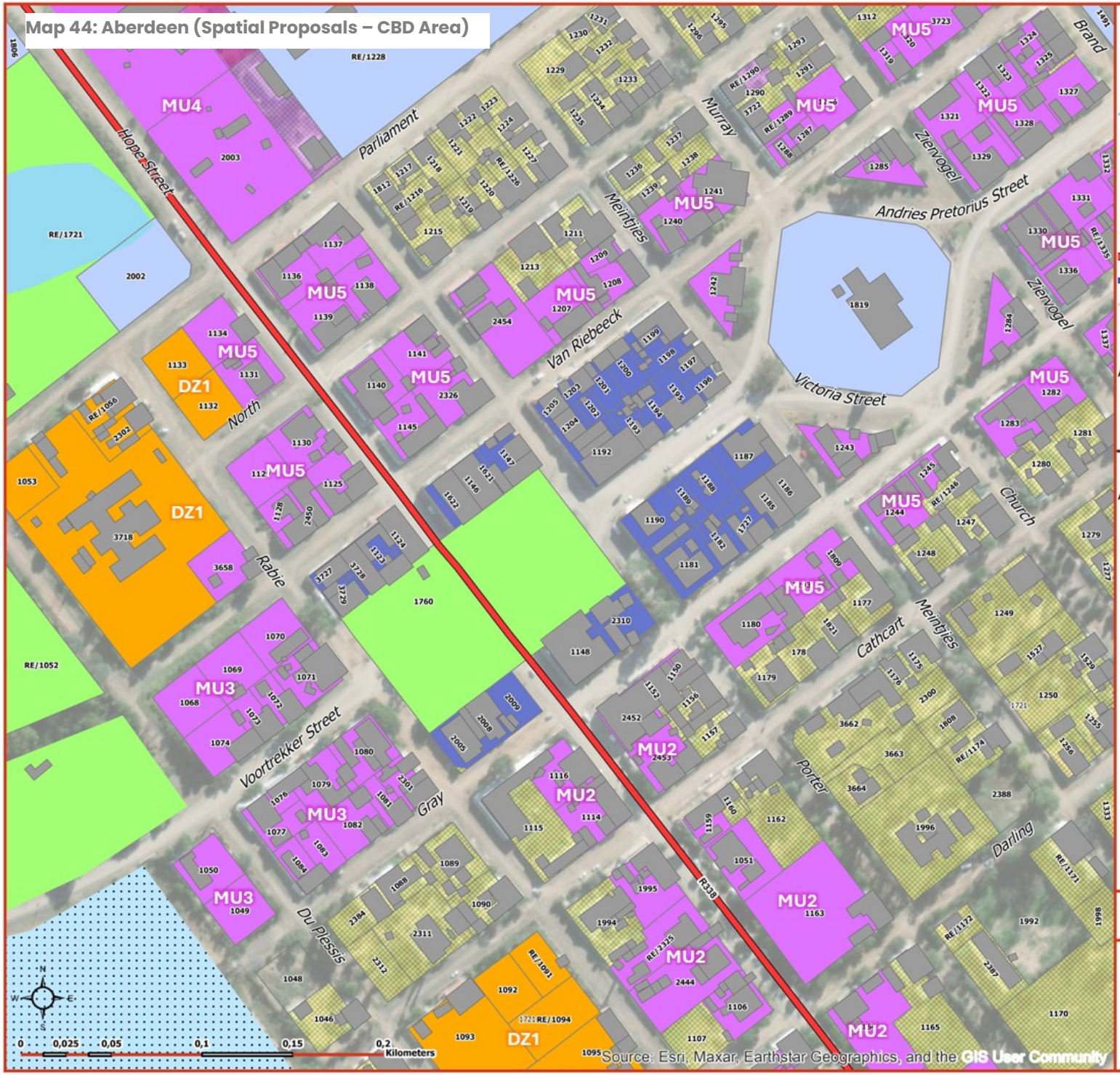
Map 44: Aberdeen (Spatial Proposals – CBD Area)



Local Spatial Proposals Central Business District Aberdeen

- Rivers
- Wetlands
- Parent Farm
- Farm Portions
- Erf
- Contours
- Main / Provincial Road
- National Road
- Railway Lines
- Protected Agricultural Areas
- Building Footprint

Aberdeen Spatial Proposals

- Gateway
- Key Intersection
- Activity Corridor
- Public Place

Aberdeen Spatial Proposals

- Cemetery
- Central Business District (CBD)
- Densification Area
- Residential Development Area
- Industrial Area
- Institutional Area
- Mixed Use Corridor
- Mixed Use Area
- Open Space System
- Small holdings

Existing Spatial Planning Land Use

- Agriculture
- Heritage and Tourism Area
- Industrial
- Informal Settlement
- Institutional Area
- Mixed Use
- Open Space System
- Residential Development Area
- Smallholdings
- Transportation
- Current Urban Edge

Source: Dr Beyers Naude SDF 2024

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4.3.3.5 INFRASTRUCTURE DEVELOPMENT

4.3.3.5.1 TRANSPORTATION DEVELOPMENT

Transportation in Aberdeen requires targeted improvements to enhance safety, accessibility, and regional connectivity. The town is located to the east of the N9 national route, which plays a significant role in connecting Aberdeen with surrounding regions. Enhancing public transportation networks along Hoop Street, the R61, and the N9 is essential for better access to the town centre and key services. Improvements to non-motorized transport infrastructure, such as dedicated pedestrian and cycling paths, are needed along main roads and mixed-use corridors to accommodate safe, active transport options. Strategically placed taxi and bus stops along Hoop Street, the R61, and other key routes will further enhance public transit efficiency. Additionally, the development of a bypass route could help manage traffic flow, easing congestion around the central areas of Voortrekker Street and nearby roads.

4.3.3.5.2 INFRASTRUCTURE NEEDS ASSESSMENT

To ensure the continued growth and well-being of the town, several critical infrastructure development projects are identified:

- Implement speed bumps strategically placed within residential areas and near schools to improve road safety and reduce speeding incidents.
- Deploy Wi-Fi towers in public areas and key locations to ensure residents and tourists have access to dependable internet services.
- Build sidewalks and cycle lanes along major roads and pedestrian routes to encourage walking and cycling as alternative modes of transportation.
- Upgrading of Lobelia Street to improve and provide direct access from the N2 towards the R323 towards the R62.
- Upgrading of the Aberdeen Water Treatment Works and Wastewater Treatment Works to improve the Blue Drop and Green Drop Scores respectively and ensure the availability of continuous water supply to the town.
- Development of a Fire Station and Public Library on properties already occupied by municipal buildings or to be built on vacant erven identified for community services or municipal use.

Table 12: Bulk Services Implications for Proposals

SERVICES IMPLICATIONS	
Water Implications	
The annual average daily demand (AADD) for the proposed population	150 kl /day
The annual average daily water demand (AADD) for the population (Liters per second)	1.78 l /s
The Total Annual Average Daily Demand (TAADD) for the proposed population	206.02 kl
The Total Annual Average Daily Demand per Second (TAADD) for the proposed population	2.38 kl
The total Peak Hour demand (TPHD)	500 kl /day
The total Peak Hour demand (TPHD) - Liters per second	6.21 l /s
The total Elevated Storage/Towers supply rate from the storage reservoir should be > -	6.83 kl
The total reservoir storage for the proposed development should be no less than 48 hours of TAADD	716.26 kl
The total elevated storage volume (6 Hours TAADD and assuming no backup power available	89.53 kl
Sewer Implications	
Sewerage Proposed Average Daily Flow	130 kl /day
Sewer: Peak Dry Weather Flow	327 kl /day
Sewer: Peak Wet Weather Flow	377 kl /day
The total sewer effluent peak	4.38 l/l
Electrical Demand	
Total Maximum demand (kVA)	2250
Total Maximum Demand (MVA)	2.25

The infrastructure assessment for Aberdeen indicates substantial needs in water, sewer, and electrical services. The annual average daily demand (AADD) for water is estimated at 150 kl/day, with a peak hour demand of 206 kl/day, requiring a storage capacity of at least 500 kl. Sewer infrastructure must handle peak wet weather flows of up to 337 kl/day. The projected maximum electrical demand is 2 250 kVA, highlighting the need for grid upgrades to meet future demand. These requirements emphasize the importance of comprehensive

infrastructure planning and investment to support Aberdeen's anticipated growth.

4.3.4 CONCLUSION

The housing development areas are designed to accommodate the projected growth, which includes at least 4,000 households. Additionally, there are provisions for areas dedicated to meeting future needs for socio-economic facilities and services within the town. According to the needs assessment the majority of social facilities are provided for as per the CSIR social facilities tool except for future primary schools which can be accommodated by expanding the existing primary school buildings as they have plenty of open space on the existing sites. The required public libraries can also be accommodated within existing municipal buildings or properties. Therefore, the main strategy for the social facilities within Aberdeen is to ensure sufficient maintenance is upheld and make provision for future upgrades or rehabilitation where needed.

In conclusion, the spatial and land use proposals for Riversdale should focus on several key areas to enhance the town's functionality and appeal. The town should support a diverse range of housing typologies to cater to various income groups.

Additionally, there should be strong support for the proposed agri industry and tourism developments, though all developments will be contingent on the availability of bulk services, which could impact the five-year urban edge proposals. The Central Business District requires urban regeneration and upgrading to integrate better with the open space between Voortrekker Street and the historic NG Church at the centre of town, adhering to aesthetic urban design principles. Preserving and sustaining the town's old buildings and heritage resources is essential.

4.4 JANSENVILLE

4.4.1 HISTORY

Jansenville, founded in 1854, is situated within the semi-arid Karoo region, specifically the Noorsveld, renowned for its unique succulents and arid climate. This setting supports extensive livestock farming, which is central to Jansenville's economy and cultural heritage. Established on the farm Vergenoegd, owned by Petrus Jacobus Fourie, the town originated as a parish of the Dutch Reformed Church, an effort led by Minister Alexander Smith from Uitenhage. Named in honour of General Jan Willem Janssens, the last Dutch Governor of the Cape of Good Hope, Jansenville grew into a hub for surrounding farming communities, particularly known for its production of wool, lucerne, and mohair.

In 1871, Jansenville became pivotal in the South African mohair industry when William Cary Hobson established an Angora goat flock in the district. This region's suitability for Angora farming led to Jansenville hosting the South African Mohair Growers Association and the Angora Goat Breeders Society of South Africa, cementing its status in mohair production.

The town played a role during the Anglo-Boer War, with residents largely supporting the Boer cause. In 1901, in response to Boer commando raids, the Jansenville Fort was constructed, overlooking the town as a defensive measure. The fort remains intact today as a historical site, a testament to its past.

2nd Order Node

Jansenville also features notable architectural landmarks, including the Dutch Reformed Church, consecrated in 1885, and the Jansenville Museum, housed in a Victorian building showcasing local history. The town's population is diverse, mirroring broader Eastern Cape demographics, and it retains a strong rural character and rich historical legacy.

4.4.2 SOCIO-ECONOMIC CONSIDERATIONS

The socio-economic outlook for Jansenville focuses on leveraging its unique agricultural heritage, addressing key challenges, and promoting sustainable development to enhance the quality of life for residents. The following points outline the primary considerations for the town:

- Jansenville is a vital agricultural hub, renowned as the heart of South Africa's mohair industry. The local economy relies heavily on extensive farming activities, particularly Angora goat farming, which produces high-quality mohair. Expanding value-added agricultural activities, including the promotion of local products through initiatives like the Mohair Experience Museum, can help bolster the town's economic resilience.
- Positioned within the scenic Noorsveld area, Jansenville offers a quintessential Karoo experience. The town's historical landmarks, such as the Anglo-Boer War Fort, Sid Fourie Museum, and the NG Kerk, provide a strong foundation for heritage tourism. Proximity to nature reserves, game farms, and the Addo Elephant National Park presents opportunities for eco-tourism and adventure tourism, attracting both local and international visitors. Enhanced tourism infrastructure and targeted marketing efforts are needed to tap into this potential.
- The high rates of unemployment and limited job opportunities in Jansenville have contributed to socio-economic challenges, including substance abuse and crime. Investment in community development projects, recreational facilities, and social support services is needed to address these issues and enhance residents' quality of life. Expanding educational

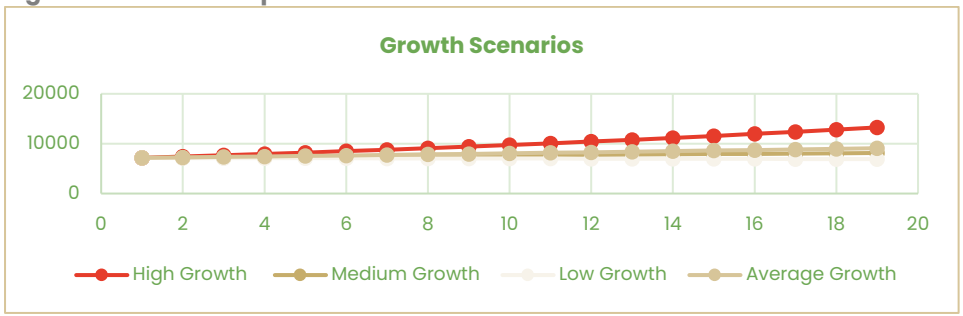
and health services, including the hospital and two local clinics, will also be necessary to support the growing community.

- Maintaining the unique Karoo-style architecture and historical charm of Jansenville is vital to preserving its identity and appeal. Implementing Karoo-themed urban design guidelines for new developments and revitalizing existing structures can help protect the town's heritage while accommodating future growth. Town beautification projects, including landscaping and the restoration of key historical sites, will contribute to creating an inviting atmosphere for residents and visitors alike.

4.4.2.1 POPULATION GROWTH PROJECTION FOR JANSENVILLE (2011 - 2040)

The population projections for Jansenville indicate a range of potential growth scenarios based on historical data and expected trends. By 2025, the town's population is estimated to vary from 7,108 under the Low Growth scenario to 7,924 under the High Growth scenario. By 2030, the projections show an increase, with the population expected to range between 7,041 (Low Growth) and 9,408 (High Growth). By 2035, estimates range from 6,975 (Low Growth) to 11,170 (High Growth), reflecting a broader divergence due to possible economic changes and migration patterns. By 2040, the population is projected to range from 6,910 (Low Growth) to 13,262 (High Growth), while the Medium Growth scenario estimates a population of 8,137. These projections underscore the need for flexible and responsive planning to accommodate different growth rates and ensure sustainable development in Jansenville. Strategic investments in infrastructure, housing, and social services will be crucial to support the town's growth while preserving its rural character and meeting the community's needs.

Figure 12: Possible Population Growth Scenarios for Jansenville



4.4.2.2 SOCIAL FACILITY NEEDS

Table 13: Social Facility Needs Assessment

SOCIAL FACILITIES NEEDS ASSESSMENT					
Facility	**Existing**	**Need 2024**	**Need 2030**	**Need 2040**	**Ha Required**
Education					
Crèche, Nursery- & Pre-primary School	1	1	1	1	0.03
Primary School	1	1	2	2	4.32
Secondary / High School	1	0	0	0	1.84
Health					
Primary Health Clinic	1	1	1	1	0.07
District Hospital	1	0	0	0	-0.2
Community Services					
Religious centres	3	1	1	1	0.165
Local Library	0	2	2	2	0.0255
Community Hall	1	0	0	0	-0.1
Fire station/emergency services	0	1	1	1	0.84
Police Station	1	-1	-1	-1	-0.175
Post Office	1	0	0	0	-0.015
Thusong Centre	0	1	1	1	0.9
Municipal offices/pay points	1	-1	-1	-1	-0.27
Community Information Centres	0	0	0	0	0.004

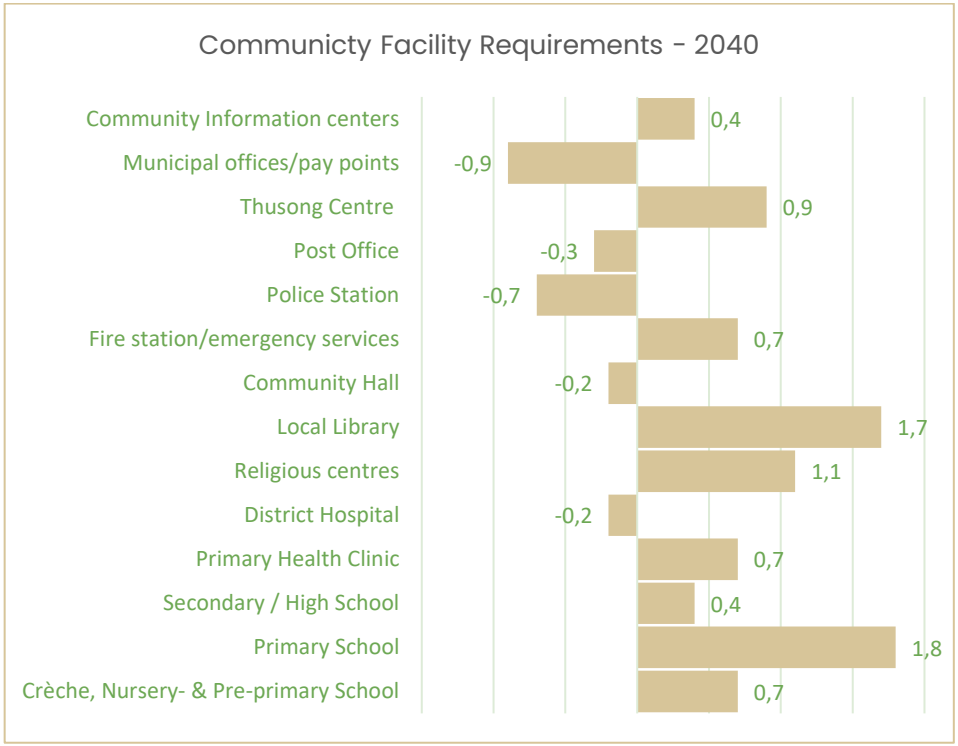
The social facilities needs assessment for Jansenville highlights the necessity for targeted infrastructure improvements to support the town's anticipated growth and socio-economic development through 2040. The analysis projects moderate increases in demand for educational, health, and community services, requiring strategic planning to meet these needs effectively.

In education, the current facilities include one crèche and one primary school. By 2040, the town will require one additional crèche and two new primary schools, utilizing approximately 4.35 hectares of land. No additional secondary or high schools are projected as the existing facility is deemed sufficient. Health

services will see a need for one additional primary health clinic, requiring 0.07 hectares, while the existing district hospital capacity is expected to suffice, indicating no further expansion is needed.

Community services demand indicates the need for modest growth. The town will require one additional religious centre and two local libraries by 2040, adding a combined land allocation of 0.19 hectares. The establishment of a new Thusong Centre is recommended to enhance integrated community support, utilizing 0.9 hectares. Additionally, there is a need for a new fire station covering 0.84 hectares to address emergency service requirements. Existing municipal offices and police station facilities may be reduced or restructured, freeing up minor land allocations for other community uses.

Overall, while Jansenville's existing facilities can meet some current needs, the projected increase in demand highlights the importance of enhancing infrastructure across education, health, and community services to support sustainable growth and improve the quality of life for its residents.



4.4.3 SPATIAL PLANNING CONSIDERATIONS

The key spatial planning guidelines for Jansenville aim to leverage the town's historical charm, agricultural heritage, and strategic location in the Karoo, while addressing its socio-economic needs and promoting sustainable growth. The guidelines focus on preserving Jansenville's unique character, supporting tourism, and enhancing its role as a key agricultural hub.

- Strengthen the protection and preservation of Jansenville's distinctive Karoo-style heritage, in line with the National Heritage Resources Act. Compliance with the guidelines from the South African Heritage Resources Agency (SAHRA) is essential to safeguard historical buildings, such as the Dutch Reformed Church and the Sid Fourie House Museum, which form part of the town's cultural identity.

- Restrict industrial development to designated zones to maintain the rural and agricultural nature of Jansenville. Emphasis should be placed on low-impact, agri-industrial activities that align with the town's agricultural base, such as mohair processing and small-scale agri-businesses, to minimize environmental impacts.
- Support the development of tourism-related facilities, including accommodations, cultural attractions, and visitor services. Position Jansenville as a gateway to the Karoo, focusing on heritage tourism, adventure activities, and eco-tourism linked to its unique landscapes and historical sites. Enhance marketing efforts to promote attractions like the Mohair Experience Museum and the nearby game reserves.
- Facilitate the growth of sustainable agricultural practices and promote agri-tourism projects. Encourage initiatives like local farm-to-table ventures and processing facilities for mohair and Karoo lamb, which are synonymous with the region, to strengthen the local economy and showcase Jansenville's agricultural heritage.
- Limit building heights to a maximum of two storeys to preserve Jansenville's small-town, rural atmosphere and ensure new developments are in harmony with the existing Karoo-style architecture.
- Establish a network of walking routes and trails that connect key historical sites, such as the Anglo Boer War Fort and the Sid Fourie Museum. Integrate these routes with the town's open spaces to provide residents and visitors with a cohesive recreational experience that highlights Jansenville's heritage.
- Develop a well-integrated open space network featuring green corridors, pedestrian pathways, and street furniture. This initiative will enhance public areas, promote non-motorized transport, and contribute to the overall aesthetic of the town.
- Promote low-intensity, mixed-use activities along main access roads like the R75, supporting local businesses and providing opportunities for small-scale retail and services while preserving the town's tranquil atmosphere.
- Focus on sustainable agricultural practices, including drought-resistant farming techniques and improved water management. Promote the development of local processing facilities to add value to agricultural products and create employment opportunities in the region.

4.4.3.1 OPEN SPACE SYSTEM

Active Open Spaces (OP1)

- Ensure flexibility in layout and amenities to accommodate various recreational pursuits and community events.
- Include playgrounds with swings, slides, and climbing structures tailored to different age groups.
- Establish consistent design standards for active open spaces to create a cohesive and visually appealing environment.
- Develop outdoor gyms to improve community health and diversify the use of the properties.
- Supported Zonings: **Open Space Zone 1**

Passive Open Spaces (OP2)

- Incorporate local vegetation such as various species of aloes, succulents and grasses into open space design, creating scenic routes and gardens.
- Employing native flora in landscaping and gardening endeavours fosters sustainability. Indigenous plants are naturally suited to local environments, demanding minimal water, fertilizer, and pesticides compared to exotic species. They offer cost-effective maintenance solutions, conserve water reservoirs, and bolster the indigenous ecosystem.
- Develop well-marked trails linking open spaces, offering opportunities for exploration.
- Identify picturesque spots with amenities like tables and benches for picnics.
- Provide strategically placed waste management facilities for cleanliness.
- Place restroom facilities strategically for user convenience and hygiene.
- Ensure proper lighting and maintenance along hiking trails and public facilities.
- Use lighting and landscaping for visibility and surveillance.
- Establish pathways linking passive spaces to active recreation zones.
- Supported Zonings: **Open Space Zone 2 & Passive Open Space**

Conservation Management (OP3)

- Undevelopable open spaces are to be maintained and enhanced by introducing indigenous plants and trees, supporting the town's tourism appeal. Non-native plant species will be removed to preserve the natural

landscape and improve the overall aesthetic, making the town more attractive to visitors.
- Conduct thorough ecological assessments to understand the biodiversity, habitats, and ecological processes present within conservation areas.
- Use this information to inform management strategies and prioritize conservation efforts.
- Designate specific areas for low-impact recreational activities such as hiking, birdwatching, and nature photography, while restricting access to sensitive areas.
- Enhance ecosystem resilience through measures such as habitat connectivity, water resource management, and invasive species control.
- Supported Zonings: **Protected Areas & Opens Space Zone 2**

Sport Facilities (**OP4**)

To upgrade existing sports facilities by considering the following:

- Choose a centrally located site with ample space for various sports facilities and parking.
- Ensure zoning regulations permit a mix of indoor and outdoor sports activities.
- Design multipurpose facilities for padel tennis, field sports, and other sports clubs.
- Include amenities like changing rooms, seating, and equipment rental.
- Ensure sufficient parking spaces and accessible pathways.
- Enhance the facilities with greenery, seating areas, and amenities like drinking fountains.
- Create a welcoming environment for visitors to relax and socialize.
- Involve local sports clubs and community members in the planning process.
- Develop a diverse program of sports activities and events to engage residents of all ages.
- Supported Zonings: **Open Space Zone 1 & Resort Zone**

Recreation Facilities (OP5)

The Jansenville Sportsgrounds can be upgraded and redeveloped to host local arts and agri-tourism events, aimed at enhancing the town's agri-eco, Karoo heritage, and cultural tourism appeal. This initiative will attract visitors and strengthen the distinctive tourism character of Jansenville.

The sports ground should be maintained to a high standard to ensure it can be used effectively by local residents and should be developed to have multiple sporting codes use the facility.

- Supported Zonings: **Open Space Zone 1 & Resort Zone**

General Open Space Guidelines

To enhance and sustainably manage open spaces in urban areas, the following general guidelines are proposed:

- Use drought-tolerant and waterwise plant species to reduce irrigation needs.
- Implement rainwater harvesting systems and greywater recycling for efficient water use in green spaces.
- Integrate open spaces with urban areas through a network of footpaths, trails, and paved walking routes.
- Design multi-use pathways to accommodate walking, running, and cycling, improving access and encouraging active use.
- Prioritize the use of native plants, rocks and trees to enhance biodiversity and reduce maintenance.
- Incorporate fruit-bearing trees to provide shade, contribute to food security, and enhance the aesthetic value of public spaces.
- Design open spaces to support a variety of uses, including areas for community events, markets, and recreational activities.
- Provide versatile, multi-purpose facilities that cater to different recreational needs.
- Encourage local community involvement in the care and maintenance of open spaces through volunteer programs.
- Establish advisory committees with community stakeholders to guide the planning and improvement of open spaces.

Image 5: Typical Open Space approach to be followed for Jansenville's Open Space System

Open Space System Jansenville

- Rivers
- Wetlands
- Parent Farm
- Farm Portions
- Erf
- Contours
- Main / Provincial Road
- National Road
- Roads
- Railway Lines
- Current Urban Edge

Terrestrial - CBA

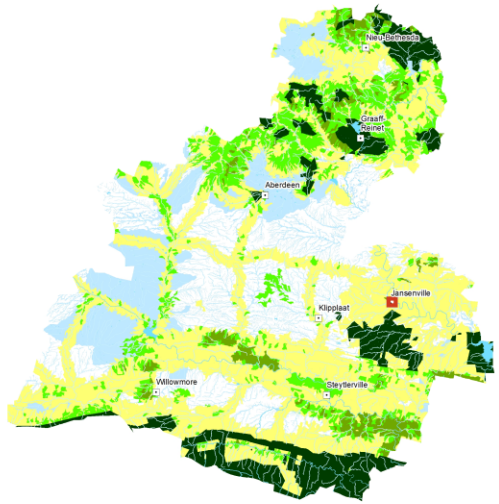
- PA
- CBA 1
- CBA 2
- ESA 1
- ESA 2
- Other

Freshwater - CBA

- CBA 1
- CBA 2
- ESA 1
- ESA 2
- Other

Jansenville Spatial Proposals

- Heritage and Tourism Area
- Open Space System



Source: Dr Beyers Naude SDF 2024

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4.4.3.2 HUMAN SETTLEMENTS DEVELOPMENT

The housing development strategy for Jansenville addresses the growing demand for diverse residential options while preserving the town's distinct Karoo heritage and character. By 2030, approximately 4.2 hectares of land will be needed to accommodate the projected demand, increasing to 9.9 hectares by 2040. The demand for additional housing units is estimated at 99 units by 2030, rising to 230 units by 2040. The proposed strategy involves a mix of low-density, medium-density, and greenfield developments, focusing on efficient land use and the formalization of informal settlements while integrating well with existing infrastructure and maintaining the town's rural charm.

The strategy includes a variety of housing development zones. HD1 and HD2 focus on medium-density infill projects aimed at urban expansion and efficient land utilization. Greenfield developments such as HD3 and HD4 provide larger-scale residential options to accommodate future growth. The approach emphasizes a pedestrian-friendly design with interconnected streets, sidewalks, and green spaces, supporting walkability and community interaction. The comprehensive plan aims to cater to Jansenville's future population growth while preserving its agricultural and historical character, promoting sustainable development and enhancing quality of life.

Table 14: Jansenville Housing Assessment

Housing Development Needs - 2030		
Ha Required - @ 10 U/Ha	9.8516	ha
Ha Required - @ 20 U/Ha	4.9258	ha
Ha Required - @ 40 U/Ha	2.4629	ha
Ha Required - @ 50 U/Ha	1.97032	ha
TOTAL – Distributed Densities	**4.23619**	ha
Housing Development Needs - 2040		
Ha Required - @ 10 U/Ha	22.9911	ha
Ha Required - @ 20 U/Ha	11.4955	ha
Ha Required - @ 40 U/Ha	5.74777	ha
Ha Required - @ 50 U/Ha	4.59822	ha
TOTAL – Distributed Densities	**9.88617**	ha

Total number of Additional Houses Required	2022	2030	2040
	0	**99**	**230**
Total Area Proposed (Spatial Proposals)	**Ha**	**Ruling Erf Size**	**Possible Housing Opportunities**
	38.3	464	483.45

The housing development forecast for Jansenville indicates a steady increase in land requirements to meet the needs of the growing population. By 2030, it is projected that approximately 4.2 hectares of land will be required, with this figure rising to 9.9 hectares by 2040. The demand for new housing units is expected to reach 99 units by 2030, increasing significantly to 230 units by 2040. The proposed development strategy focuses on accommodating this growth through a mix of infill projects, greenfield developments, and formalization of informal settlements, all while emphasizing sustainable design principles and preserving Jansenville's unique Karoo heritage. This approach aims to ensure a variety of housing options that support community needs and enhance the town's rural charm.

Medium-Density Infill Residential Development (HD1)

- HD1 is a 1.8-hectare infill development area located south of Mark Street, northwest of the junction between Mark Street and Boom Street and bordering the main road leading to the Central Business District.
- The development will feature a ruling erf size of 288 m², aimed at providing efficient use of land while maintaining the character of the surrounding area.
- This zone will support the creation of approximately 62 residential stands, contributing to increased density and supporting connectivity to the town centre.
- This zone is intended for moderate-scale housing projects, supporting urban expansion and preserving the rural ambience of the town is essential.
- Supported Zonings: **Residential Zone 1 & Residential Zone 4**

Medium-Density Infill Residential Development (HD2)

- Similar to HD1, HD2 covers a 5.8-hectare area and focuses on medium-density residential development with a ruling erf size of 288 m². The site is

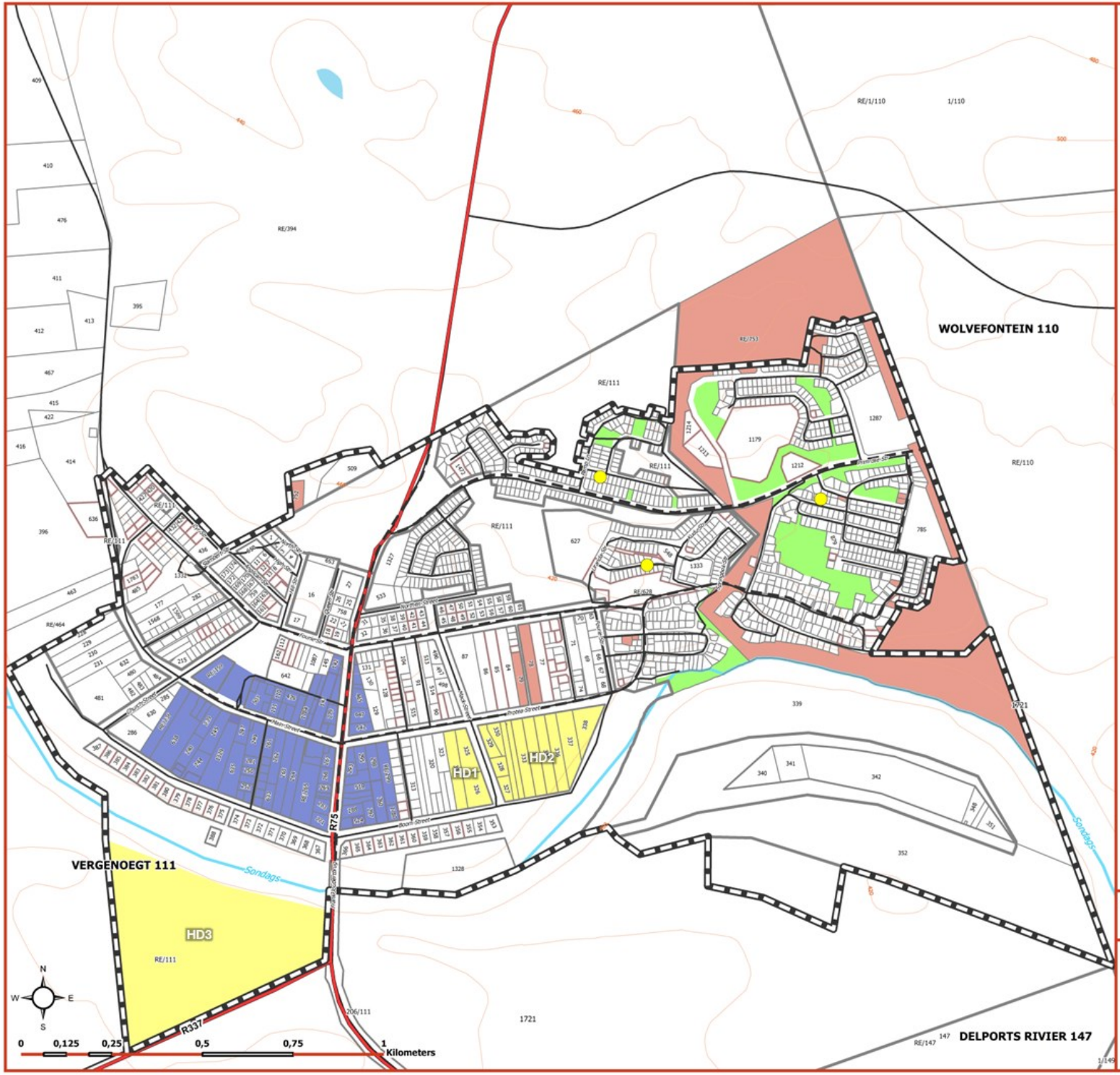
strategically located to accommodate growing housing demand, utilizing existing infrastructure effectively.

- This area can potentially provide 201 additional residential stands, supporting local housing needs and promoting urban infill.
- Prioritize pedestrian-friendly design principles, with interconnected streets, sidewalks, and green spaces to promote walkability and community interaction.
- This zone is intended for moderate-scale housing projects, supporting urban expansion and preserving the rural ambience of the town is essential.
- Supported Zonings: **Residential Zone 1 & Residential Zone 4**

Medium-Density Residential Development (HD3)

- HD3 is a 25-hectare greenfield development designated for medium-density residential use. The site offers the opportunity for new housing projects at a density of 35 dwelling units per hectare.
- This zone is expected to accommodate up to 800 dwelling units, offering new housing options in a planned, greenfield setting.
- Provide basic services and a holistic road design approach.
- Support IRDP housing grant development.
- Prioritize pedestrian-friendly design principles, with interconnected streets, sidewalks, and green spaces to promote walkability and community interaction.
- Supported Zonings: **Residential Zone 1 & Residential Zone 4**

Image 6: Karoo-style architecture should be incorporated as the design philosophy for housing developments, including affordable housing projects. This traditional aesthetic, characterized by simple lines, pitched roofs, verandas, and the use of local materials, should be embraced to maintain the regional heritage and enhance the visual appeal of the residential areas.



Human Settlement Development Jansenville

- Current Urban Edge
- Contours
- Rivers
- Main / Provincial Road
- Wetlands
- National Road
- Parent Farm
- Roads
- Farm Portions
- Railway Lines
- Erf
- Human Settlement Development

Jansenville Spatial Proposals

- Central Business Area (CBD)
- Housing Development Area
- Public Place

General Category

- Municipal
- Vacant
- Activity Corridor

Map 51: Jansenville (Humans Settlements Development Area)

Source: Dr Beyers Naude SDF 2024

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4.4.3.3 SPATIAL STRUCTURING

The spatial structuring elements pertain to the proposed mixed-use development corridors and zones for the town. While the terminology for these corridors and zones may be consistent, they differentiate between areas designated for future development and those that are already developed. This section also addresses the Central Business Area, Industrial Development Focus Areas, and Institutional Zones. Additionally, it highlights key nodes identified for each town and references areas designated for government and municipal uses.

4.4.3.3.1 DENSIFICATION AREAS

The densification strategy for Jansenville supports targeted residential growth in key areas to enhance land use efficiency and promote sustainable development. Key zones for densification include:

- **Main Street Corridor:** Densification is encouraged along Main Street, as outlined in the spatial proposals, to support a mix of residential and low-intensity commercial uses. The area is suitable for densities ranging from 20 to 35 dwelling units per hectare, aimed at revitalising this central corridor and improving access to services. Suggested zonings include **Residential Zone 4, Residential Zone 5 and Business Zone 2**
- **Mack Street Area:** Densification along Mack Street is proposed with a focus on medium-density residential development at densities of 20 to 35 dwelling units per hectare. This will allow for effective land utilisation, enhance connectivity, and support the expansion of residential options in the town. Suggested zonings include **Residential Zone 1 and 4**
- **College Street Area:** South of College Street, densification is supported on both the eastern and western sides of the R75 Main Road. This area is ideal for residential infill development, utilising existing infrastructure and providing additional housing opportunities at medium densities. The strategy aims to integrate new developments seamlessly into the existing urban fabric while enhancing the town's overall spatial structure. Suggested zonings include **Residential Zone 1, 2 & 4**

4.4.3.3.2 MIXED-USE DEVELOPMENT CORRIDORS (MU)

The proposed mixed-use corridors for Jansenville are designed to accommodate a range of commercial, residential, and institutional activities. These zones aim to enhance access to essential services, support local businesses, and integrate tourism elements while preserving the town's unique Karoo heritage. The corridors are strategically located to serve the needs of residents and visitors alike, with specific urban design guidelines to ensure a cohesive and attractive environment.

MU1 – Neighbourhood Retail and Business Corridor

MU1 is designated as a low-intensity retail and business zone, catering to residents who live farther from the central business area. The focus is on providing essential goods and services close to neighbourhoods, reducing the need for travel to the town centre.

- Primary Uses: Neighbourhood shops, small offices, and essential services.
- Informal Trading: Designated areas for informal trading are supported, encouraging small-scale entrepreneurial activities.
- Community Impact: This corridor aims to enhance local accessibility and convenience, meeting the daily needs of residents.
- Supported Zonings: **Business Zone 2**

MU2 – Neighbourhood Retail and Light Industry Corridor

Similar to MU1, the MU2 corridor serves as a low-intensity retail and business area, but with the added allowance for light and service industries. This zone is designed to support local commerce and small-scale industrial activities, providing a variety of essential services.

- Areas for informal trading are included to support local vendors.
- This corridor encourages a mix of commercial and light industrial activities, fostering local economic growth and job creation.
- Supported Zonings: **Business Zone 2, 3 & 4**

MU3 – Low-Intensity Mixed-Use Tourism Corridor

MU3 is a low-intensity mixed-use corridor that integrates retail, business, and office uses, alongside institutional and authority functions. This corridor also

supports tourism-related activities, enhancing the visitor experience and promoting local attractions.

- Primary Uses include Retail shops, offices, institutional uses, and authority services.
- Tourism-oriented uses include Tourist facilities, farm stalls, curio shops, service stations, overnight accommodation, and restaurants.
- Development within this corridor must consider themed urban design elements, including Karoo-style facades, street landscaping, and pedestrian-friendly layouts, to enhance the visual appeal and create a cohesive aesthetic.
- Supported Zonings: **Business Zone 2, Resort Zone, Residential Zone 3, Open Space Zone 2 & Passive Open Space**

MU4 – Central Business District Buffer Zone

MU4 serves as a buffer zone along the Central Business District of Jansenville, providing a transitional space that supports a mix of uses while maintaining the character and function of the CBD.

- Primary Uses supported Offices, retail shops, business services, institutional uses, and authority facilities.
- Other Uses accommodated include Overnight accommodation to cater to visitors and business travellers.
- This corridor acts as a supporting area for the Central Business District, ensuring a smooth transition between high-intensity commercial activities and surrounding residential areas.
- Supported Zonings: **Business Zone 2, Business Zone 3 & Institution 1**

4.4.3.3.3 INSTITUTIONAL DEVELOPMENT ZONES

Educational Facilities (IZ1)

The following guidelines and uses are proposed:

- Provision of education facilities and related uses.
- Includes schools, crèches, tertiary facilities, and support activities.
- Supported Zonings: **Institution 1**

Community Services (IZ2)

The following guidelines and uses are proposed:

- Ensuring wheelchair-accessible parking spaces are available around the facility.
- Provision for worship facilities and related uses.
- Includes places of assembly
- Provision of a wide range of community facilities, including institutions.
- Supported Zonings: **Business Zone 1 & Institution 2**

Municipal and Government Use (IZ3)

Guidelines and supported uses encompass:

- Government and municipal uses, including magistrates' courts, municipal offices, police stations, and others.
- Ensuring the safety and accessibility of facilities for all individuals.
- Installing clear signage to facilitate access to services.
- Allocating adequate parking areas, including wheelchair-friendly spaces.
- Supported Zonings: **Institution 1, Authority Zone, Business Zone 1 & Business Zone 2**

Authority Precinct Area (IZ4)

- Designating a specific area for government and municipal purposes to facilitate the provision of necessary social and community services to the local community in the short, medium, and long term.
- Ensuring the integration of the precinct area with surrounding land use proposals and open space systems through urban design and street furniture development.
- Supported Zonings: **Institution 1, Institution 2, Authority Zone, Business Zone 1 & Business Zone 2**

Health Development Zone (IZ5)

A designated zone for health services and related facilities, including laboratories, ambulance services, and disaster management. Accessibility should prioritize non-motorized transport, with wheelchair-friendly parking areas provided. Traffic calming measures should be implemented sparingly around this zone. High-intensity residential or business uses that could significantly increase traffic to and from the health services area should be restricted.

- Supported Zonings: **Institution 2**

Also consider:

- Implement landscaping and greenery to create a healing environment conducive to well-being.
- Ensure adequate lighting and security measures to enhance safety for patients and staff, especially during night hours.
- Provide designated drop-off and pick-up zones for ambulances and emergency vehicles to optimize response times.
- Design the layout to facilitate efficient patient flow and minimize congestion within the health services zone.
- Incorporate sustainable design principles, such as energy-efficient buildings and water-saving features, to reduce environmental impact.
- Establish clear signage and wayfinding systems to guide patients and visitors to different facilities within the health zone.
- Include amenities like rest areas, waiting lounges, and recreational spaces to improve the overall experience for patients and their families.
- Collaborate with local healthcare providers and community organizations to ensure that the range of services offered meets the needs of the population.
- Plan for future expansion and scalability to accommodate potential growth in demand for healthcare services over time.

Cemetery Development (IZ6)

- Areas designated for cemeteries and future cemetery expansion to accommodate future needs as they arise.
- Supported Zonings: **Authority Zone**

4.4.3.3.4 INDUSTRIAL DEVELOPMENT ZONE

The industrial zones in Jansenville are strategically planned to support local economic growth, accommodate agri-industrial activities, and provide spaces for light and service industries. These zones are positioned to leverage key transport routes and focus on sustainable development practices, aiming to create resilient and environmentally friendly industrial areas.

Light and Services Industrial Development (IDZ1)

IDZ1 supports light industries and service-based businesses, ideal for small-scale manufacturing and repair workshops. The zone emphasizes sustainable initiatives:

- Integration of solar and wind power to reduce environmental impact.
- Promotion of rainwater harvesting systems to lower reliance on municipal water.
- Encouragement of recycling and circular economy practices to minimize waste.

This zone aims to create a green, efficient industrial environment while boosting local economic activity.

- Supported Zonings: **Industrial Zone 1 & Business Zone 3**

Agri-Industrial Development Zone (IDZ2)

- IDZ2 focuses on agri-industrial development, benefiting from access to major routes leading to Graaf Reinett and Gqeberha. The zone is suited for agricultural processing and value-added activities.
- A centre for food production, packaging, and distribution.
- Encourages the use of renewable energy and rainwater harvesting.
- Promotes recycling of agricultural by-products to align with circular economy principles.
- Supported Zonings: **Agricultural Zone 2 & Industrial Zone 2 (Excluding Noxious Use)**

4.4.3.3.5 CENTRAL BUSINESS DISTRICT (CBD)

The following guidelines have been developed to support the revitalization and sustainable development of the Jansenville CBD, enhancing its role as a vibrant economic and cultural hub while preserving its unique Karoo character:

- Prioritize the renovation and adaptive reuse of existing historical buildings to promote urban renewal, maintain the town's heritage, and reflect the distinct Karoo architectural style.
- Improve the visual appeal of the CBD by introducing aesthetically pleasing street furniture, trees, and greenery. Create pedestrian-friendly zones that encourage walking, gathering, and community engagement.

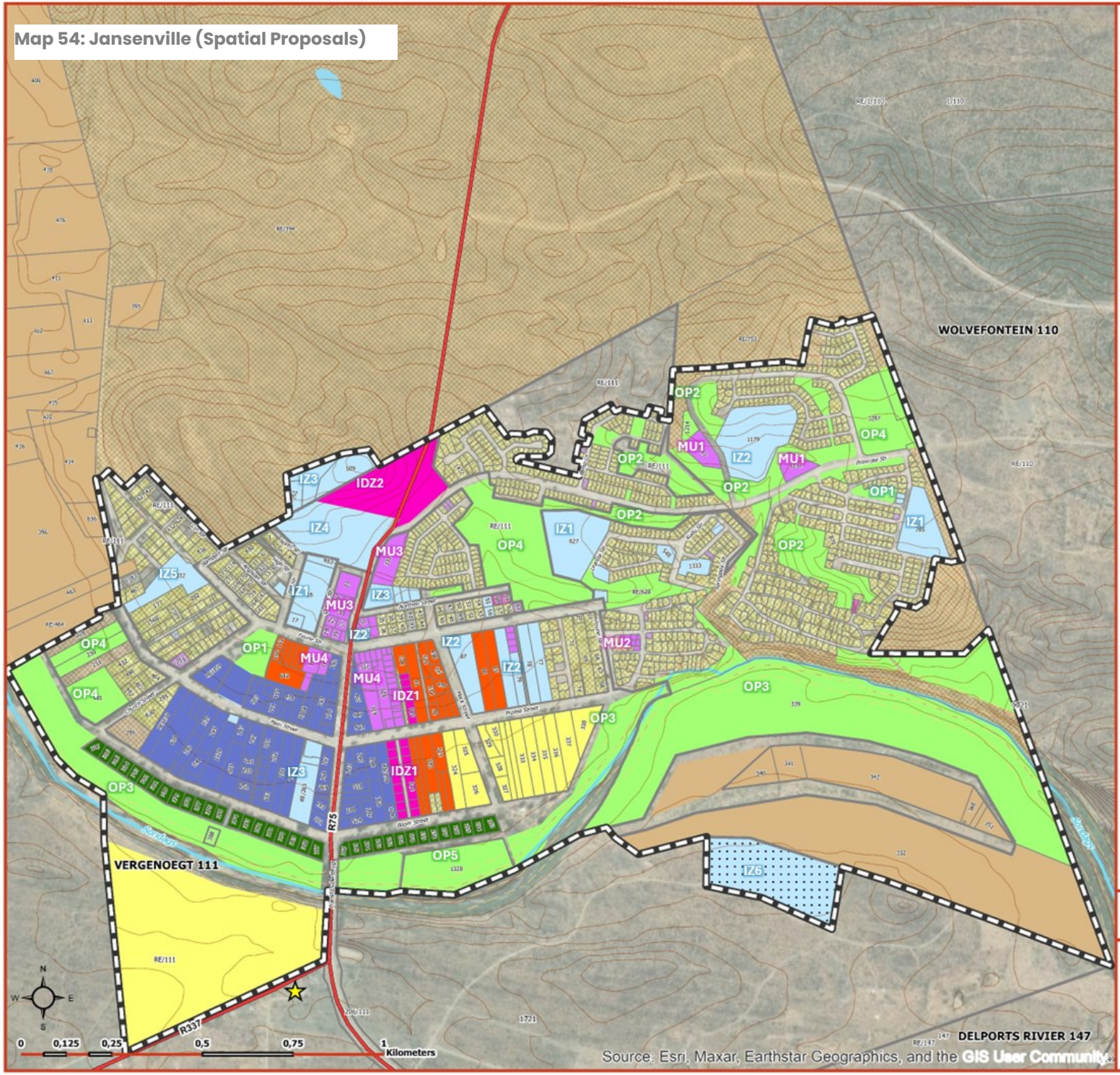
- Identify areas within the CBD for pedestrian-only spaces, plazas, and community gathering points that enhance social interactions and provide a vibrant public realm.
- Encourage a mix of retail, business, service establishments, and residential units within the CBD to diversify economic activities. Retail spaces should be prioritized on ground floors, with offices or residential units above to maximize space and functionality.
- Provide sufficient parking facilities to meet the needs of visitors and residents and explore improvements in traffic flow to enhance access and reduce congestion, particularly along the R75 Main Road.
- Restrict building heights to a maximum of two storeys to maintain the small-town, rural character of Jansenville and preserve views of the surrounding Karoo landscape.
- Integrate elements of local culture and heritage into building designs, public art installations, and open spaces to reinforce Jansenville's unique identity and appeal to both residents and visitors.
- Promote the arts and crafts industry within the CBD, encouraging the creation of unique retail spaces and cultural activities that reflect the town's artistic heritage.
- Upgrade the open space area along Van Den Berg and Barry Streets, focusing on creating a multifunctional space that reflects the town's culture and history. The redesign should accommodate a variety of activities, events, and recreational opportunities.
- Enhance lighting, pedestrian crossings, and signage throughout the CBD to improve safety and accessibility for all users, including residents, tourists, and business patrons.
- Supported Zonings: **Business Zone 1, 2, 3 & 4**

4.4.3.3.6 HERITAGE AND TOURISM ZONE

Key considerations within the Heritage and Tourism Zone include:

- Ensure materials used match the heritage style of the area.
- Obtain approval from local authorities, and in provincial heritage areas, consent from the Eastern Cape Provincial Heritage Resources Authority is required.
- Submit sketch plans and site photographs before preparing final plans to incorporate recommendations.
- Depart from zoning regulations if proposed developments align with heritage area aims.
- Maintain street-facing building edges, limited to two stories high from any adjacent street boundary.
- For original buildings, additions can be made at the rear of the existing courtyard.
- Refer to the South African Heritage Resources Agency for guidance, established under the National Heritage Resources Act.
- Supported Zonings: **Resort Zone, Protected Area, Passive Open Space, Open Space Zone 2**

Map 54: Jansenville (Spatial Proposals)



Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

Local Spatial Proposals Jansenville

- Contours (5m)

River Buffer Distance

- 20 m
- 50 m
- Rivers
- Wetlands
- Parent Farm
- Farm Portions
- Erf
- Main / Provincial Road
- National Road
- Railway Lines
- Existing Land Use
- Protected Agricultural Areas

Jansenville Spatial Proposals

- Cemetery
- Central Business District (CBD)
- Densification Area
- Heritage and Tourism Area
- Residential Development Area
- Industrial Area
- Institutional Area
- Mixed Use Corridor
- Open Space System
- Small holdings
- Current Urban Edge
- Informal Settlement

Existing Spatial Planning Land Use

- Agriculture
- Heritage and Tourism Area
- Industrial
- Informal Settlement
- Institutional Area
- Mixed Use
- Open Space System
- Residential Development Area
- Smallholdings
- Transportation

Source: Dr Beyers Naude SDF 2024

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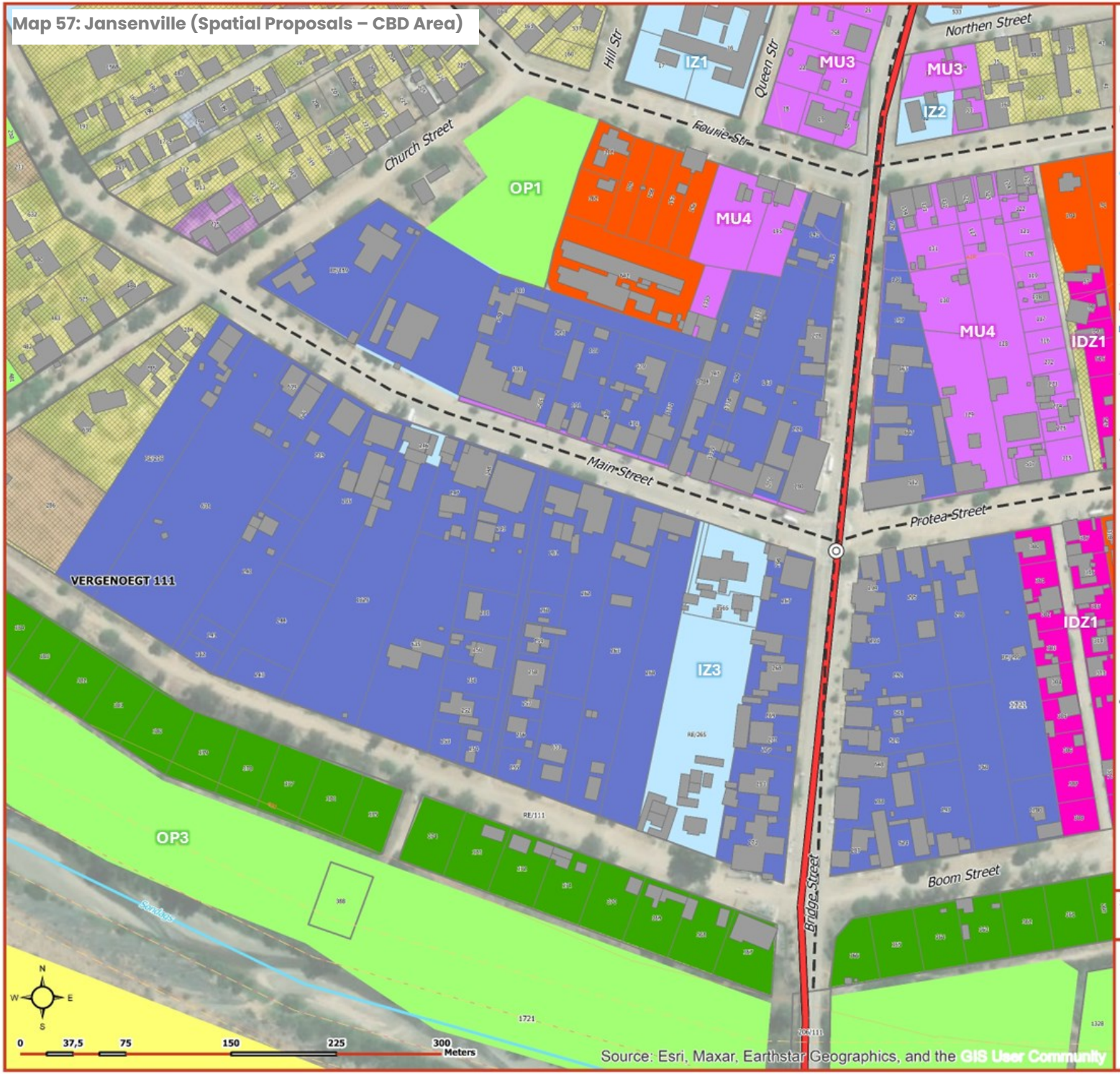
DR BEYERS NAUDE MUNICIPAL SPATIAL DEVELOPMENT FRAMEWORK

Map 57: Jansenville (Spatial Proposals – CBD Area)



Local Spatial Proposals Central Business District Jansenville

River Buffer Distance

- 20 m
- 50 m
- Rivers
- Wetlands
- Parent Farm
- Farm Portions
- Erf
- Contours
- Main / Provincial Road
- National Road
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- Agriculture
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Jansenville Spatial Proposals

- Cemetery
- Central Business District (CBD)
- Densification Area
- Heritage and Tourism Area
- Housing Development Area
- Industrial Area
- Institutional Area
- Mixed Use Corridor
- Open Space System
- Small holdings
- Building Footprint
- Activity Corridor - Road Maintenance
- Key Intersection

Source: Dr Beyers Naude SDF 2024

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4.4.3.4 INFRASTRUCTURE DEVELOPMENT

4.4.3.4.1 TRANSPORTATION DEVELOPMENT

Transportation infrastructure in Jansenville requires targeted improvements to enhance regional connectivity and local mobility. The town's strategic location along the R75 provides vital access to Gqeberha (Port Elizabeth) and Graaff-Reinet, facilitating the movement of agricultural products and access to tourism routes. However, many urban streets in Jansenville are in poor condition, with several sections lacking adequate stormwater drainage and needing resurfacing.

The R329 road, linking Jansenville with Steytlerville and Willowmore, serves as a key agricultural and tourism corridor, requiring consistent maintenance to ensure safety and accessibility. Addressing the deteriorating condition of local streets and improving road maintenance will be crucial for supporting both economic activities and daily travel for residents.

In addition to road infrastructure, expanding non-motorized transport options, such as pedestrian walkways and cycling paths, can improve access within the town and encourage more active modes of transportation. Strategically placed taxi and bus stops along the R75 and key local roads will enhance public transit options and better connect residents to regional destinations.

These infrastructure and transport initiatives will support Jansenville's growth, enhance safety, and improve the overall quality of life for the community while fostering economic opportunities and regional integration.

4.4.3.4.2 INFRASTRUCTURE NEEDS ASSESSMENT

Jansenville faces several critical infrastructure challenges that need to be addressed to support its socio-economic development. The town's water supply relies heavily on boreholes, and during drought periods, water availability becomes strained, impacting residential, agricultural, and business activities. Upgrading the existing water treatment facilities and improving water storage capacity are priorities to enhance water security.

The existing oxidation pond system requires an upgrade to a full wastewater treatment plant to meet increasing sanitation demands. The current system is inadequate for the growing population and poses environmental risks if not improved. Additionally, many streets in Jansenville, particularly in the Phumlani township area, are in disrepair, with inadequate stormwater drainage. A comprehensive road maintenance and paving program, including stormwater management improvements, is essential to enhance urban infrastructure.

Improve key intersections, including those at Bridge Street and Primrose Street, as well as Main Street and Bridge Street, to facilitate better traffic flow and enhance safety. These upgrades will help alleviate congestion and ensure efficient movement within the town, particularly around the CBD.

Investments in telecommunications infrastructure, including expanding Wi-Fi coverage and upgrading the fibre backbone, are needed to support economic growth and provide residents with reliable access to digital services. The establishment of a centralized community services hub, including expanded municipal offices and a Thusong Centre, will streamline service delivery and better meet the needs of the community.

Table 15: Bulk Services Implications for Proposals

SERVICES IMPLICATIONS	
Water Implications	
The annual average daily demand (AADD) for the proposed population	120 kl /day
The annual average daily water demand (AADD) for the population (Liters per second)	1.43 l /s
The Total Annual Average Daily Demand (TAADD) for the proposed population	165.54 kl
The Total Annual Average Daily Demand per Second (TAADD) for the proposed population	1.91 kl
The total Peak Hour demand (TPHD)	400 kl /day
The total Peak Hour demand (TPHD) - Liters per second	4.99 l /s
The total Elevated Storage/Towers supply rate from the storage reservoir should be > -	5.49 kl
The total reservoir storage for the proposed development should be no less than 48 hours of TAADD	575.71 kl
The total elevated storage volume (6 Hours TAADD and assuming no backup power available	71.96 kl
Sewer Implications	

Sewerage Proposed Average Daily Flow	102 kl /day
Sewer: Peak Dry Weather Flow	262 kl /day
Sewer: Peak Wet Weather Flow	303 kl /day
The total sewer effluent peak	3.51 l/l
Electrical Demand	
Total Maximum demand (kVA)	3338
Total Maximum Demand (MVA)	3.33

The infrastructure assessment for Jansenville highlights the need for substantial upgrades in water, sewer, and electrical services to accommodate projected growth. The annual average daily demand (AADD) for water is estimated at 120 kl/day, with a peak hour demand of 400 kl/day, necessitating a minimum reservoir storage capacity of 575.71 kl to ensure a reliable supply. Elevated storage requirements, particularly without backup power, are calculated at 71.96 kl, emphasizing the need for improved power reliability. Sewer infrastructure faces significant pressure, with peak wet weather flows reaching 303 kl/day, suggesting a need for better stormwater management and system capacity enhancements. Electrical demand for the projected population is estimated at 3,338 kVA (3.33 MVA), indicating a requirement for grid upgrades and improved maintenance. These service implications underscore the urgency of investing in essential infrastructure to support sustainable development, ensure service reliability, and meet the needs of the growing population.

4.4.4 CONCLUSION

The housing development areas are designed to accommodate the projected growth, which includes at least 230 households. Additionally, there are provisions for areas dedicated to meeting future needs for socio-economic facilities and services within the town.

In conclusion, the spatial and land use proposals for Riversdale should focus on several key areas to enhance the town's functionality and appeal. Developing a public transportation system with adequate parking and designated areas for freight, truck, and bus movement is crucial to support both freight and tourist traffic along Bridge Street. Special attention is needed to improve roads to the proposed tourism zone along Sondags River. The town should support a diverse range of housing typologies to cater to various income groups.

Additionally, there should be strong support for the proposed solar farm development, though all developments will be contingent on the availability of bulk services, which could impact the five-year urban edge proposals. The Central Business Area requires urban regeneration and upgrading to integrate better with the open space adjacent to the NG Church and Town Hall, adhering to aesthetic urban design principles. Preserving and sustaining the town's old buildings and heritage resources is essential.

4.5 WILLOWMORE

4.5.1 HISTORY

Willowmore, established in 1864 on the farm “The Willows,” was founded by William Joseph Moore, a British settler who arrived as part of the British Settler program. Originally named Willow Moore in his honour, the town quickly developed into a prominent trading centre. Moore, alongside his brother-in-law Frederick Lehmkuhl, donated land to the Dutch Reformed Church, leading to Willowmore's official establishment in 1874 and municipal status by 1884.

In the late 19th century, Willowmore expanded as a major economic and cultural hub, even boasting a significant Jewish community. This heritage is still visible today through the town’s synagogue, Jewish graves, and the rabbi's residence. The town also holds historical significance in South African history; during the Anglo-Boer War, Willowmore was British territory and endured attacks from Boer commandos. By October 1901, the British surrendered to Boer forces, and remnants of a British fort built to protect the railway from Boer rebels still stand outside the town.

Willowmore is now known as the "Gateway to the Baviaanskloof," a title reflecting its proximity to the Baviaanskloof Wilderness Area, a UNESCO World Heritage Site and a prime location for tourism. The region is one of the world’s largest mohair producers and supports a diverse economy rooted in stock and game farming. The town also draws outdoor enthusiasts with its hiking trails, mountain biking, hunting, 4x4 trails, and bird-watching opportunities.

2nd Order Node

Unlike many Karoo towns, Willowmore benefits from a reliable water source drawn from boreholes on the farm Wanhoop, located 20 kilometres from town. Today, Willowmore remains a blend of historical charm and natural beauty, attracting tourists and sustaining its heritage as a central trade hub.

4.5.2 SOCIO-ECONOMIC CONSIDERATIONS

Willowmore, as the second-largest town in the Dr Beyers Naudé Local Municipality, plays a pivotal role in the region’s socio-economic landscape, acting as a central hub for both agriculture and tourism. The town's economy is deeply rooted in its agricultural activities, notably in sheep farming and mohair production, which have long been key drivers of local economic growth. In recent years, the tourism sector has gained momentum, leveraging Willowmore's proximity to the Baviaanskloof World Heritage Site, a major draw for eco-tourism and adventure tourism enthusiasts. As a gateway town to this unique natural reserve, Willowmore has the potential to further develop its tourism offerings, capitalizing on hiking, cycling, and off-road adventures, which could significantly boost local businesses and employment opportunities. Key considerations include.

- The local economy of Willowmore is largely supported by its strong agricultural sector. The region is renowned for its extensive sheep farming, mohair production, and Karoo lamb, which contribute significantly to the town's economic base. There is potential for further value chain development in agribusiness and agri-tourism initiatives that leverage the town's agricultural heritage.
- Willowmore’s proximity to Baviaanskloof, with its unique biodiversity and scenic landscapes, provides a significant opportunity for eco-tourism and adventure tourism. Developing tourism infrastructure, such as

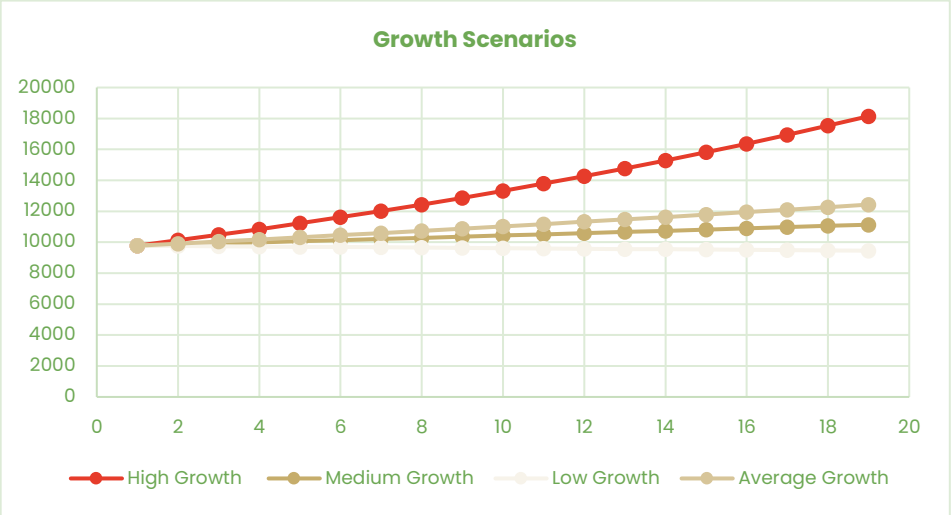
accommodations, trails, and recreational facilities, will be key to attracting more visitors and diversifying the local economy.

- The town's Victorian-era architecture, heritage sites, and local crafts market are important cultural assets that reflect its historical character. Preserving these elements is crucial for maintaining Willowmore's unique identity and enhancing its appeal as a heritage tourism destination.
- Despite its economic potential, Willowmore faces challenges related to ageing infrastructure, limited access to sustainable water sources, and the need for upgrades in sewerage systems. Addressing these infrastructure issues is essential to support the town's growth and improve the quality of life for residents.
- The development strategy for Willowmore emphasizes a balanced approach that integrates economic growth with environmental sustainability. This includes prioritizing infrastructure upgrades, enhancing tourism offerings, promoting local agricultural products, and preserving the town's historical charm.
- The strategic development plan aims to position Willowmore as a vibrant rural hub, fostering economic resilience, attracting investment, and creating a high-quality living environment for its residents. By leveraging its unique assets and addressing key challenges, Willowmore can enhance its role as a vital center for tourism, agriculture, and heritage in the broader region.

4.5.2.1 POPULATION GROWTH PROJECTION FOR WILLOWMORE (2011 - 2040)

Willowmore's population is projected to grow steadily over the next two decades, influenced by regional migration and economic factors. Based on growth scenarios, the population is expected to range between 9,725 (Low Growth) and 10,841 (High Growth) by 2025. By 2030, it may increase to between 9,634 (Low Growth) and 12,872 (High Growth). Projections for 2040 estimate a population ranging from 9,453 (Low Growth) to 18,145 (High Growth). The medium growth scenario forecasts a population of approximately 11,133 by 2040. These projections underscore the importance of adaptive planning to accommodate diverse growth rates and ensure adequate provision of services and infrastructure.

Figure 13: Possible Population Growth Scenarios for Willowmore



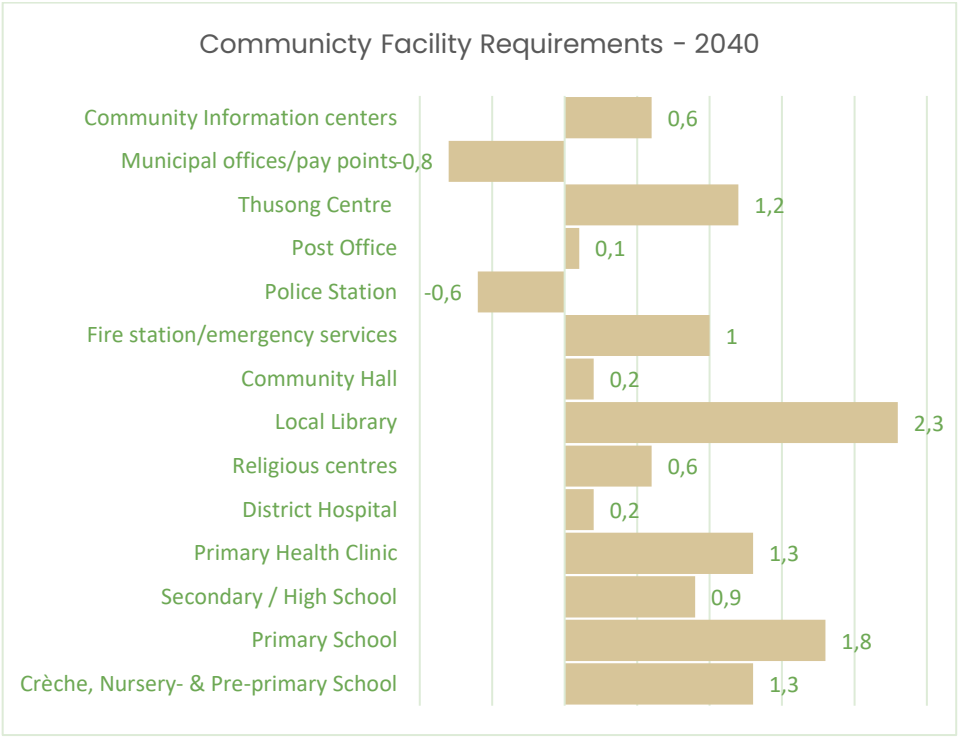
4.5.2.2 SOCIAL FACILITY NEEDS

Table 16: Social Facility Needs Assessment

SOCIAL FACILITIES NEEDS ASSESSMENT					
Facility	**Existing**	**Need 2024**	**Need 2030**	**Need 2040**	**Ha Required**
Education					
Crèche, Nursery- & Pre-primary School	1	1	1	1	0.08
Primary School	2	1	2	2	4.32
Secondary / High School	1	1	1	1	4.14
Health					
Primary Health Clinic	1	1	1	1	0.13
District Hospital	1	0	0	0	0.2
Community Services					
Religious centres	5	0	0	1	0.09
Local Library	0	2	2	2	0.0345
Community Hall	1	0	0	0	0.1
Fire station/emergency services	0	1	1	1	1.2
Police Station	1	-1	-1	-1	-0.15

Post Office	1	0	0	0	0.005
Thusong Centre	0	1	1	1	1.2
Municipal offices/pay points	1	-1	-1	-1	-0.24
Community Information Centres	0	1	1	1	0.006

The social facilities need assessment for Willowmore highlights a steady demand for educational, health, and community services as the population grows. The town currently has one crèche, two primary schools, and one high school. By 2040, the demand for additional educational facilities is expected to increase, necessitating the establishment of new crèches and expanded primary school facilities. Health services, including the existing primary health clinic, must be upgraded to meet community needs. The development of a new fire station, additional religious centres, and a Thusong Centre is recommended to enhance emergency response capabilities and community support. These proposed facilities will require an estimated land allocation of 1.84 hectares.



4.5.3 SPATIAL PLANNING CONSIDERATIONS

4.5.3.1 KEY SPATIAL PLANNING GUIDELINES:

- Preserve the town's historical character and unique architectural styles, aligning new developments with the Karoo aesthetic.
- Limit new industrial activities to designated zones that minimize environmental impact while supporting economic diversification.
- Enhance tourism infrastructure, promoting Willowmore as a gateway for eco-tourism and cultural heritage tours.
- Encourage agricultural development, including agri-tourism and local value chain projects, to bolster the town's economy.
- Establish a well-connected open space network with pedestrian pathways, green corridors, and recreational spaces.

- Promote mixed-use developments along main access roads, supporting retail and residential uses to enhance vibrancy.
- Limit building heights to two storeys to maintain the town's rural and scenic character.
- Develop walking and cycling routes that connect key historical and cultural sites, enhancing the visitor experience.

4.5.3.2 OPEN SPACE SYSTEM

Active Open Spaces (OP1)

- Ensure flexibility in layout and amenities to accommodate various recreational pursuits and community events.
- Include playgrounds with swings, slides, and climbing structures tailored to different age groups.
- Establish consistent design standards for active open spaces to create a cohesive and visually appealing environment.
- Develop outdoor gyms to improve community health and diversify the use of the properties.
- Supported Zonings: **Open Space Zone 1**

Passive Open Spaces (OP2)

- Incorporate local vegetation such as various species of aloes, succulents and grasses into open space design, creating scenic routes and gardens.
- Employing native flora in landscaping and gardening endeavours fosters sustainability. Indigenous plants are naturally suited to local environments, demanding minimal water, fertilizer, and pesticides compared to exotic species. They offer cost-effective maintenance solutions, conserve water reservoirs, and bolster the indigenous ecosystem.
- Develop well-marked trails linking open spaces, offering opportunities for exploration.
- Identify picturesque spots with amenities like tables and benches for picnics.
- Provide strategically placed waste management facilities for cleanliness.
- Place restroom facilities strategically for user convenience and hygiene.
- Ensure proper lighting and maintenance along hiking trails and public facilities.
- Use lighting and landscaping for visibility and surveillance.
- Establish pathways linking passive spaces to active recreation zones.
- Supported Zonings: **Open Space Zone 2 & Passive Open Space**

Conservation Management (OP3)

- Undevelopable open spaces are to be maintained and enhanced by introducing indigenous plants and trees, supporting the town's tourism appeal. Non-native plant species will be removed to preserve the natural landscape and improve the overall aesthetic, making the town more attractive to visitors.
- Conduct thorough ecological assessments to understand the biodiversity, habitats, and ecological processes present within conservation areas.
- Use this information to inform management strategies and prioritize conservation efforts.
- Designate specific areas for low-impact recreational activities such as hiking, birdwatching, and nature photography, while restricting access to sensitive areas.
- Enhance ecosystem resilience through measures such as habitat connectivity, water resource management, and invasive species control.
- Supported Zonings: **Open Space Zone 2 & Protected Areas**

Sport Facilities (OP4)

To upgrade existing sports facilities by considering the following:

- Choose a centrally located site with ample space for various sports facilities and parking.
- Ensure zoning regulations permit a mix of indoor and outdoor sports activities.
- Design multipurpose facilities for padel tennis, field sports, and other sports clubs.
- Include amenities like changing rooms, seating, and equipment rental.
- Ensure sufficient parking spaces and accessible pathways.
- Enhance the facilities with greenery, seating areas, and amenities like drinking fountains.
- Create a welcoming environment for visitors to relax and socialize.
- Involve local sports clubs and community members in the planning process.

- Develop a diverse program of sports activities and events to engage residents of all ages.
- Supported Zonings: **Open Space Zone 1 & Resort Zone**

Recreation Facilities (OP5)

- The Willowmore Showgrounds is to be upgraded and redeveloped to host a local arts and agri-tourism event, aimed at boosting the town's agri-eco, Karoo heritage, and cultural tourism appeal. This initiative is intended to attract visitors and enhance the unique tourism character of Willowmore.
- The Willowmore caravan park and chalets should be supported with regular maintenance to the surrounding infrastructure to ensure an inviting and functional surrounding for guests. The municipality and owners should work in close cooperation to ensure the facility remains of a high standard and attracts tourists to the town.
- Supported Zonings: **Open Space Zone 1, Passive Open Space & Resort Zone**

General Open Space Guidelines for Willowmore

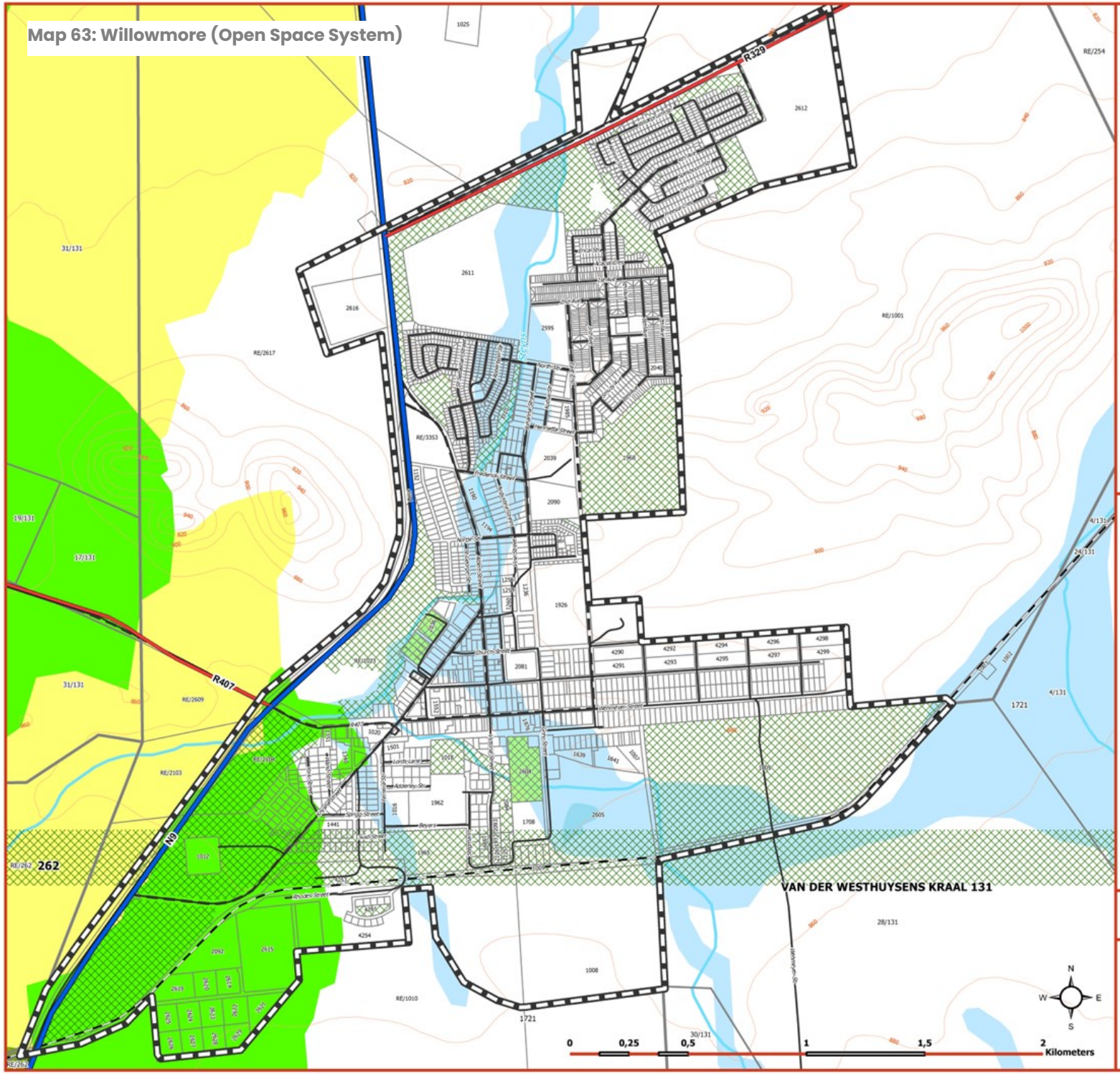
To enhance and sustainably manage open spaces in Willowmore while reflecting the town's Karoo character and heritage, the following tailored guidelines are proposed:

- Water-Efficient Landscaping: Utilize drought-tolerant and waterwise plant species that are adapted to the arid Karoo climate, minimizing the need for irrigation. Implement rainwater harvesting systems and greywater recycling in open spaces to support efficient water use.
- Integration with Urban Fabric: Design a cohesive network of footpaths, trails, and paved walking routes that seamlessly connect open spaces with urban areas. These pathways should encourage pedestrian activity, improve accessibility, and promote active lifestyles.
- Use of Native Vegetation: Prioritize the planting of native Karoo species, including colourful indigenous flowers and shrubs, to enhance biodiversity, support local wildlife, and reduce maintenance requirements. Incorporate fruit-bearing trees where feasible to provide shade, enhance the aesthetic appeal, and contribute to food security.
- Integrate artistic design approaches that reflect the local culture and landscape. Utilize natural rock materials, windpomp (windmill) motifs, and colour palettes inspired by the Karoo's earthy tones. These elements should create a unique sense of place that resonates with the town's heritage and identity.
- Develop versatile, multi-use pathways that cater to a variety of activities, including walking, running, and cycling. These paths should be designed to accommodate all age groups and encourage frequent use by residents and visitors.
- Design open spaces that support a range of activities, from community events and markets to recreational activities. Incorporate versatile, multi-purpose facilities such as playgrounds, picnic areas, and seating that cater to diverse recreational needs.
- Foster a sense of ownership and stewardship among residents by encouraging local community involvement in the care and maintenance of open spaces. Establish volunteer programs and engage local artists and craftsmen in the design and beautification of these areas.
- Create advisory committees comprising community stakeholders, local businesses, and environmental groups to guide the planning, design, and ongoing improvement of open spaces. This collaborative approach will ensure that the needs of the community are met and that the open spaces reflect Willowmore's unique cultural and environmental context.

Image 7: Typical Open Space and Urban Design approach to be followed for Willowmore's Open Space System

Map 60: Willowmore (Open Space System)

Map 63: Willowmore (Open Space System)



Open Space System Willowmore

- Rivers
- Wetlands
- Parent Farm
- Farm Portions
- Erf
- Contours
- Main / Provincial Road
- National Road
- Roads
- Railway Lines

Terrestrial - CBA

- PA
- CBA 1
- CBA 2
- ESA 1
- ESA 2
- Other

Freshwater - CBA

- CBA 1
- CBA 2
- ESA 1
- ESA 2
- Other

Willowmore Spatial Proposals

- Heritage and Tourism Area
- Open Space System
- Urban Edge

Source: Dr Beyers Naude SDF 2024

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4.5.3.3 HUMAN SETTLEMENTS DEVELOPMENT

The housing development strategy for Willowmore focuses on addressing the increasing demand for diverse residential options while maintaining the town's distinct rural character. By 2030, it is estimated that approximately 5.8 hectares of land will be needed for housing development, expanding to 13.5 hectares by 2040 to accommodate the growing population. The strategy includes a balanced mix of low-density, medium-density, and infill developments, prioritizing efficient land use and formalization of existing informal settlements. Key housing zones are planned near the CBD for medium-density infill projects, as well as greenfield developments on the town's periphery, which will support incremental upgrades and provide essential services.

Additionally, identified Human Development Areas (HDA) within Willowmore have been earmarked for strategic interventions to accelerate housing delivery. These areas will focus on prioritizing social housing and affordable housing options, leveraging government support for infrastructure upgrades and community services. The HDA approach aims to enhance the quality of life for residents by facilitating access to well-located housing, promoting walkability, and integrating essential amenities into the development plans, ensuring sustainable growth and community well-being.

Table 17: Willowmore Housing Assessment

Housing Development Needs - 2030		
Ha Required - @ 10 U/Ha	13.4784	ha
Ha Required - @ 20 U/Ha	6.73918	ha
Ha Required - @ 40 U/Ha	3.36959	ha
Ha Required - @ 50 U/Ha	2.69567	ha
TOTAL – Distributed Densities	**5.7957**	ha
Housing Development Needs - 2040		
Ha Required - @ 10 U/Ha	31.455	ha
Ha Required - @ 20 U/Ha	15.7275	ha
Ha Required - @ 40 U/Ha	7.86375	ha
Ha Required - @ 50 U/Ha	6.291	ha
TOTAL – Distributed Densities	**13.5257**	ha

Total number of Additional Houses Required	2022	2030	2040
	0	**135**	**315**
Total Area Proposed (Spatial Proposals)	**Ha**	**Ruling Erf Size**	**Possible Housing Opportunities**
	82.5	443	905.575

The housing development forecast for Willowmore indicates a moderate increase in land requirements to accommodate future population growth. By 2040, approximately 13 hectares of land will be needed, distributed across various densities. The demand for additional housing units is projected to grow from 135 units in 2030 to 315 units in 2040, reflecting a need to accelerate land development and housing provision to meet the increasing demand. The spatial proposals could potentially support up to 905 housing opportunities based on the average erf size of 443 m².

Medium-Density Infill Residential Development (HD1)

- The areas are approximately 22 hectares.
- Density Up to 40 Dwelling Units per Hectare.
- Allow for incremental upgrading of the housing areas.
- The development is regarded as Greenfield Development.
- Provide basic services and a holistic road design approach.
- Support IRDP housing grant development.
- Prioritize pedestrian-friendly design principles, with interconnected streets, sidewalks, and green spaces to promote walkability and community interaction.
- HD1 can be used for emergency housing.
- Supported Zonings: **Residential Zone 1, 4 & 5**

Low-Density Residential Development (HD2)

- The area covers slightly more than 1 hectare.
- The property is identified as the primary area for low-density residential development, intended to complement the existing residential neighbourhood towards the east. This area provides for short-term demands for low-density residential development.
- The maximum density allowed is 20 dwelling units per hectare.

- Prioritize pedestrian-friendly design principles, with interconnected streets, sidewalks, and green spaces to promote walkability and community interaction.
- Incorporate sustainable design features such as rainwater harvesting systems, and energy-efficient appliances to reduce environmental impact.
- Preserving the rural ambience of the town is essential.
- Supported Zonings: **Residential Zone 2**

Medium Density Residential development (HD3)

- The area covers approximately 7.1 hectares and requires a holistic road design and provision of basic services.
- The property is identified as the primary area for medium-density residential development, intended to complement the existing residential neighbourhood towards the east. This area should be prioritised for medium-density housing demand.
- The maximum density allowed is 35 dwelling units per hectare.
- Prioritize pedestrian-friendly design principles, with interconnected streets, sidewalks, and green spaces to promote walkability and community interaction.
- Incorporate sustainable design features such as rainwater harvesting systems, and energy-efficient appliances to reduce environmental impact.
- Social housing development is supported in HD3.
- Preserving the rural ambience of the town is essential.
- Supported Zonings: **Residential Zone 1 & Residential Zone 4**

Low-Density Infill Residential Development (HD4)

- The areas are approximately 6.4 hectares.
- Density Up to 20 Dwelling Units per Hectare.
- The development is regarded as infill development.
- Support a variety of housing typologies for medium to high-income households.
- Prioritize pedestrian-friendly design principles, with interconnected streets, sidewalks, and green spaces to promote walkability and community interaction.
- Supported Zonings: **Residential Zone 2 & Residential Zone 4**

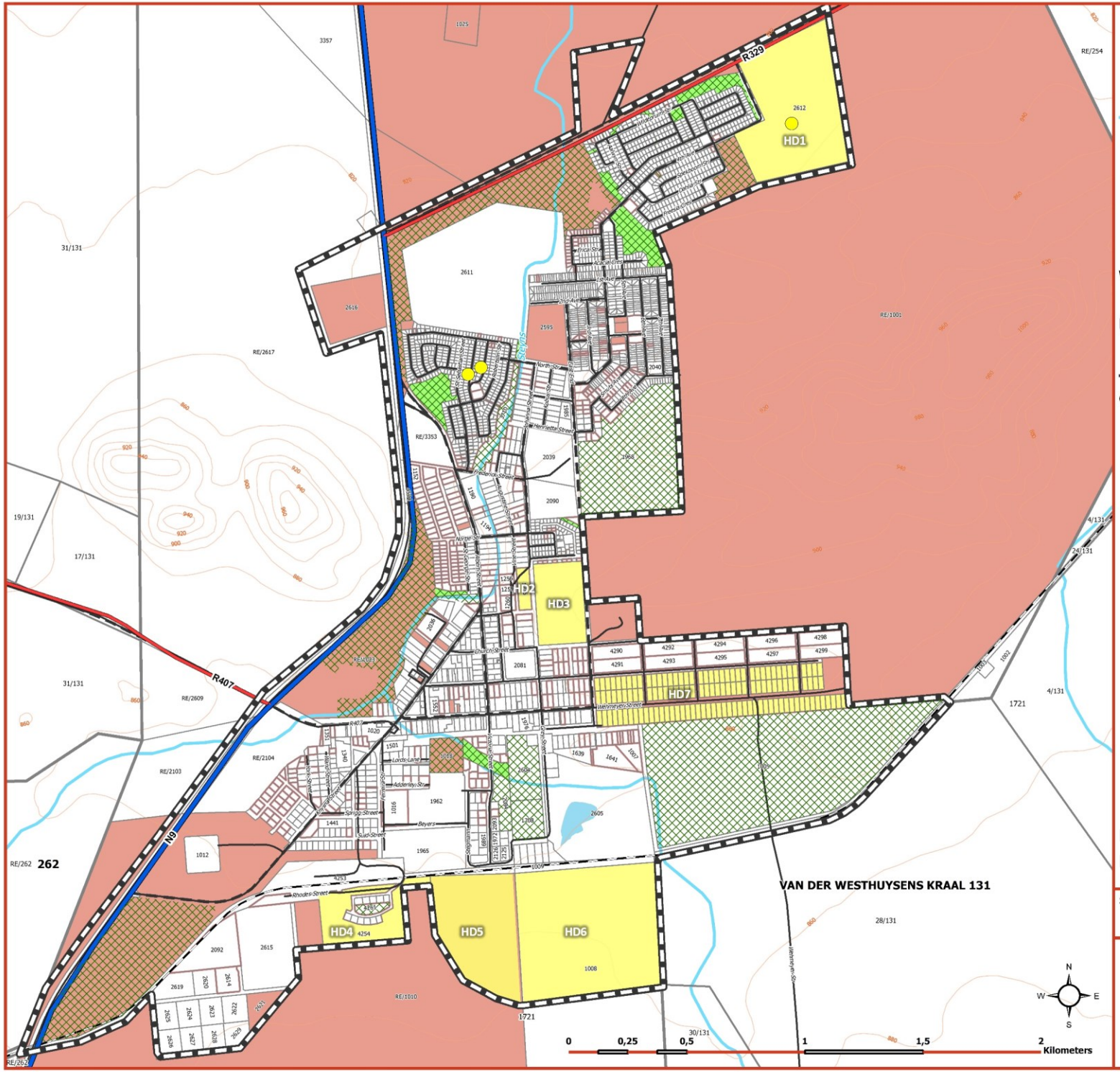
Low Density Residential development (HD5)

- The area covers approximately 15 hectares.
- The property is identified as the primary area for low-density residential development, intended to complement the existing residential neighbourhood towards the east. This area provides for short-term demands for low-density residential development.
- The maximum density allowed is 20 dwelling units per hectare.
- Prioritize pedestrian-friendly design principles, with interconnected streets, sidewalks, and green spaces to promote walkability and community interaction.
- Incorporate sustainable design features such as rainwater harvesting systems, and energy-efficient appliances to reduce environmental impact.
- The development is regarded as Greenfield Development.
- Provide basic services and a holistic road design approach.
- Preserving the rural ambience of the town is essential.
- Supported Zonings: **Residential Zone 2**

Low Density Residential development (HD6)

- The area covers approximately 31 hectares.
- The property is identified as the primary area for low-density residential development, intended to complement the existing residential neighbourhood towards the east. This area provides for short term demands for low-density residential development.
- The maximum density allowed is 20 dwelling units per hectare.
- Prioritize pedestrian-friendly design principles, with interconnected streets, sidewalks, and green spaces to promote walkability and community interaction.
- Incorporate sustainable design features such as rainwater harvesting systems, and energy-efficient appliances to reduce environmental impact.
- The development is regarded as Greenfield Development.
- Provide basic services and a holistic road design approach.
- Preserving the rural ambience of the town is essential.
- Supported Zonings: **Residential Zone 2**

Image 8: Karoo-style architecture should be incorporated as the design philosophy for housing developments, including affordable housing projects. This traditional aesthetic, characterized by simple lines, pitched roofs, verandas, and the use of local materials, should be embraced to maintain the regional heritage and enhance the visual appeal of the residential areas.



Human Settlements Development Willowmore

- Rivers
- Wetlands
- Parent Farm
- Farm Portions
- Erf
- Contours
- Main / Provincial Road
- National Road
- Roads
- Railway Lines
- Human Settlement Development

Willowmore Spatial Proposals

- Housing Development Area
- Urban Edge
- Open Space System
- Activity Corridor

General Category

- Municipal
- Vacant
- Public Place

Map 64: Willowmore (Housing Development Area)

Source: Dr Beyers Naude SDF 2024

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4.5.3.4 SPATIAL STRUCTURING

The spatial structuring elements pertain to the proposed mixed-use development corridors and zones for the town. While the terminology for these corridors and zones may be consistent, they differentiate between areas designated for future development and those that are already developed. This section also addresses the Central Business Area, Industrial Development Focus Areas, and Institutional Zones. Additionally, it highlights key nodes identified for each town and references areas designated for government and municipal uses.

4.5.3.4.1 DENSIFICATION AREAS

To consider the following densification zones for Willowmore:

- Densification east Grotius Street along Erasmuns Street. This area supports low-intensity business and retail development, as well as residential infill development, up to a density of 35 dwelling units per hectare. Zoning supported include **Business Zone 2 and Residential Zone 4.**
- Densification east of the Ng Church along Market Street. This area supports residential infill development, up to a density of 20 dwelling units per hectare. Zoning supported include **Residential Zone 3 and Residential Zone 4.**
- Densification around Victoria Street south of Wehmeyer. This area is designated for residential infill development, with a maximum density of 20 dwelling units per hectare. Considerations should be made to limit development according to the flood line of the adjacent stream. Zoning supported include **Residential Zone 2 and Residential Zone 4.**

4.5.3.4.2 MIXED-USE ZONES (MIX)

MIX1 – A mixed-use zone for tourism and recreation is proposed to accommodate a range of facilities, including overnight accommodation, tourist attractions, and supporting amenities. The zone will feature a service station, retail spaces for showcasing Karoo artefacts, and outlets for local produce and products, creating a hub for visitors to experience the unique offerings of the area.

- Supported Zonings: **Business Zone 3, Resort Zone & Passive Open Space**

4.5.3.4.3 MIXED-USE DEVELOPMENT CORRIDORS (MU)

Implement mixed-use corridors to support low-intensity business and retail development. Key areas include:

MU1 – **Northern Suburbs Retail and Business Corridor**
This corridor focuses on supporting small-scale, low-intensity retail and business activities in the northern suburbs of Willowmore. It aims to provide convenient access to essential goods and services for local residents, encouraging the establishment of neighbourhood shops, offices, and small service businesses. Informal trading is supported and aligned with the Municipality's Informal Trading and Hawkers Policy.

- Supported Zonings: **Business Zone 2**

MU2 – **Central Link Mixed-Use Corridor**
The MU2 corridor is designed to serve as a link between the northern and central suburban regions, accommodating medium to high-intensity activities. This area supports a mix of retail, business services, light industry, and service industries. It aims to foster economic integration and provide a variety of commercial opportunities, acting as a transition zone that meets the diverse needs of the community.

- Supported Zonings: **Business Zone 2, 3 & 4**

MU3 – **Tourism and Urban Design Corridor**
This corridor is intended to develop and enhance tourism-related activities, including tourist accommodation, retail shops, and institutional uses. It will feature urban design enhancements such as paving, street furniture, arts and crafts shops, and local curio outlets, showcasing Karoo-themed products and experiences. The goal is to create a vibrant, attractive space that draws visitors and highlights Willowmore's unique cultural and historical offerings.

- Supported Zonings: **Business Zone 2, Business Zone 3, Resort Zone & Passive Open Space**

MU4 – **Willowmore Central Business District (CBD) Support Corridor**

MU4 serves as a low-intensity central business area for Willowmore, supporting a mix of commercial, retail, office, and other typical CBD activities. The corridor aims to strengthen the town's economic core, providing a variety of services and

amenities in a well-integrated, pedestrian-friendly environment. This area will be the focus of business development initiatives, aiming to attract investment and enhance local economic activity.

- Supported Zonings: **Business Zone 1**

MU5 – Service and Light Industrial Corridor

The MU5 corridor is designed to support service industries and light industrial uses. It provides space for workshops, small-scale manufacturing, and service-based enterprises that require easy access and visibility. This area is intended to facilitate economic growth and employment opportunities while ensuring that activities are compatible with the surrounding urban environment.

- Supported Zonings: **Business Zone 3, Business Zone 4 & Industrial Zone 1**

4.5.3.4.4 INSTITUTIONAL DEVELOPMENT ZONES

Educational Facilities (IZ1)

The following guidelines and uses are proposed:

- Provision of education facilities and related uses.
- Includes schools, crèches, tertiary facilities, and support activities.
- Supported Zonings: **Institution 1**

Community Services (IZ2)

The following guidelines and uses are proposed:

- Ensuring wheelchair-accessible parking spaces are available around the facility.
- Provision for worship facilities and related uses.
- Includes places of assembly
- Provision of a wide range of community facilities, including institutions.
- Supported Zonings: **Business Zone 1 & Institution 2**

Municipal and Government Use (IZ3)

Guidelines and supported uses encompass:

- Government and municipal uses, including magistrates' courts, municipal offices, police stations, and others.
- Ensuring the safety and accessibility of facilities for all individuals.
- Installing clear signage to facilitate access to services.
- Allocating adequate parking areas, including wheelchair-friendly spaces.
- Supported Zonings: **Institution 1, Authority Zone, Business Zone 1 & Business Zone 2**

Authority Precinct Area (IZ4)

- Designating a specific area for government and municipal purposes to facilitate the provision of necessary social and community services to the local community in the short, medium, and long term.
- Ensuring the integration of the precinct area with surrounding land use proposals and open space systems through urban design and street furniture development.
- Supported Zonings: **Institution 1, Institution 2, Authority Zone, Business Zone 1 & Business Zone 2**

Health Development Zone (IZ5)

A designated zone for health services and related facilities, including laboratories, ambulance services, and disaster management. Accessibility should prioritize non-motorized transport, with wheelchair-friendly parking areas provided. Traffic calming measures should be implemented sparingly around this zone. High-intensity residential or business uses that could significantly increase traffic to and from the health services area should be restricted.

Supported Zonings: **Institution 2**

Also consider:

- Implement landscaping and greenery to create a healing environment conducive to well-being.
- Ensure adequate lighting and security measures to enhance safety for patients and staff, especially during night hours.
- Provide designated drop-off and pick-up zones for ambulances and emergency vehicles to optimize response times.
- Design the layout to facilitate efficient patient flow and minimize congestion within the health services zone.

- Incorporate sustainable design principles, such as energy-efficient buildings and water-saving features, to reduce environmental impact.
- Establish clear signage and wayfinding systems to guide patients and visitors to different facilities within the health zone.
- Include amenities like rest areas, waiting lounges, and recreational spaces to improve the overall experience for patients and their families.
- Collaborate with local healthcare providers and community organizations to ensure that the range of services offered meets the needs of the population.
- Plan for future expansion and scalability to accommodate potential growth in demand for healthcare services over time.

Cemetery Development (IZ6)

Areas designated for cemeteries and future cemetery expansion to accommodate future needs as they arise.

- Supported Zoning: **Authority Zone**

4.5.3.4.5 INDUSTRIAL DEVELOPMENT ZONE

Light and Services Industrial Development (IDZ1)

- This zone promotes the development of Light and Services Industries.
- Incorporate renewable energy sources, such as solar or wind power, to minimise environmental impact and promote sustainability.
- Encourage rainwater harvesting systems to conserve water resources and reduce reliance on municipal water supply.
- Promote the recycling of materials and waste within industrial processes wherever possible to minimise landfill waste and promote circular economy principles.

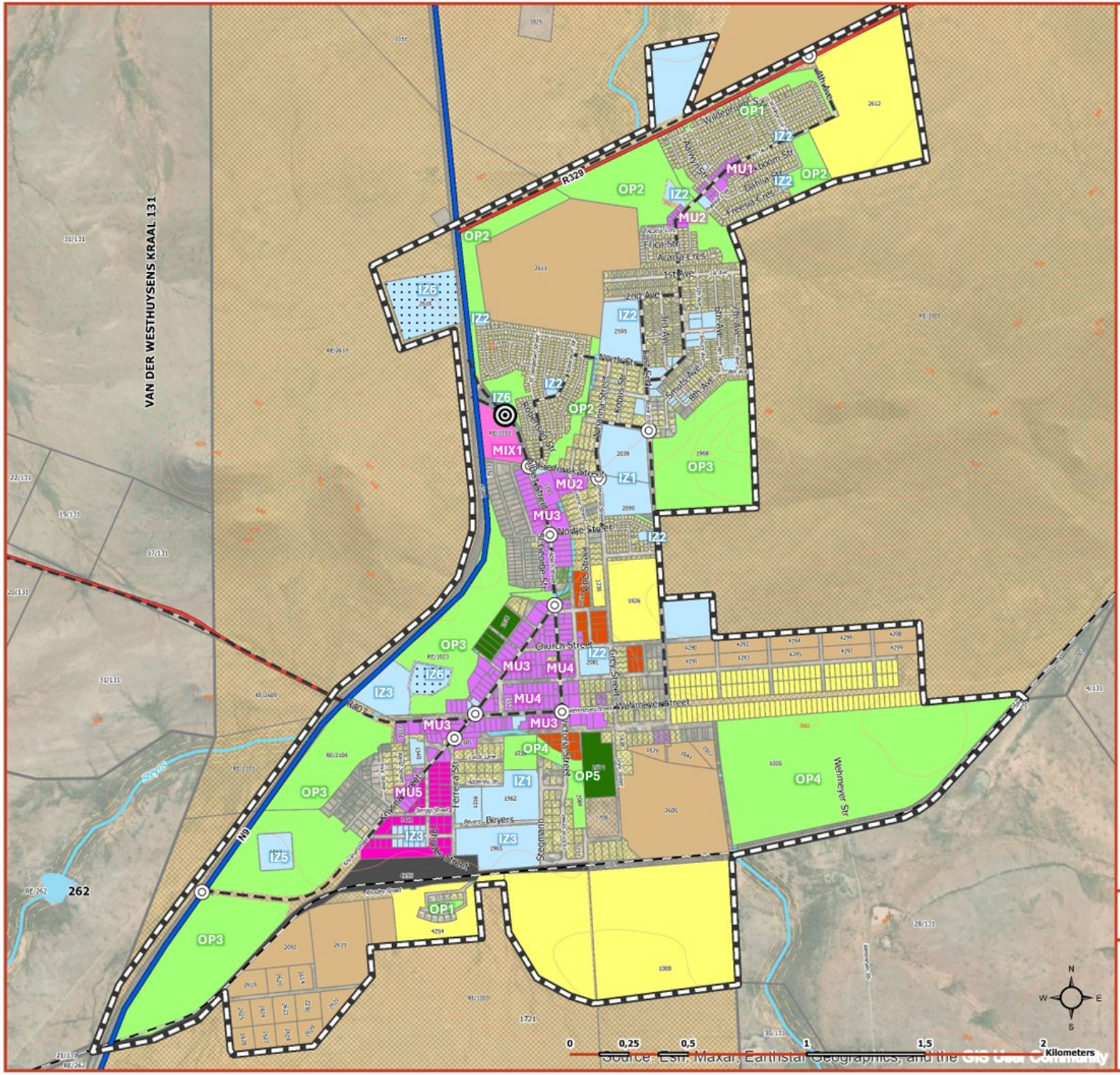
4.5.3.4.6 CENTRAL BUSINESS DISTRICT (CBD)

Not applicable to Willowmore

4.5.3.4.7 HERITAGE AND TOURISM ZONE

Key considerations within the Heritage and Tourism Zone include:

- Use plastic or aluminium windows/doors on street facades while maintaining authenticity with the town's heritage design.
- Ensure materials used match the heritage style of the area.
- Obtain approval from local authorities, and in provincial heritage areas, consent from the Eastern Cape Provincial Heritage Resources Authority is required.
- Submit sketch plans and site photographs before preparing final plans to incorporate recommendations.
- Depart from zoning regulations if proposed developments align with heritage area aims.
- Maintain street-facing building edges, limited to two stories high from any adjacent street boundary.
- For original buildings, additions can be made at the rear of the existing courtyard.
- Refer to the South African Heritage Resources Agency for guidance, established under the National Heritage Resources Act.
- Supported Zonings: **Resort Zone, Protected Area, Passive Open Space, Open Space Zone 2**



Local Spatial Proposals Willowmore

River Buffer Distance

- 20 m
- 50 m
- Rivers
- Wetlands
- Parent Farm
- Farm Portions
- Erf
- Contours
- Main / Provincial Road
- National Road
- Railway Lines
- Existing Land Use
- Protected Agricultural Areas

Existing Spatial Planning Land Use

- Agriculture
- Heritage and Tourism Area
- Industrial
- Informal Settlement
- Institutional Area
- Mixed Use
- Open Space System
- Residential Development Area
- Smallholdings
- Transportation

Willowmore Spatial Proposals

- Cemetery
- Densification Area
- Heritage and Tourism Area
- Residential Development Area
- Industrial Area
- Institutional Area
- Mixed Use Corridor
- Mixed Use Area
- Open Space System
- Small holdings
- Transportation Link
- Urban Edge
- Activity Corridor - Road Maintenance
- Gateway
- Key intersection

Map 67: Willowmore (Spatial Proposals)

Source: Dr Beyers Naude SDF 2024

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4.5.3.5 INFRASTRUCTURE DEVELOPMENT

4.5.3.5.1 TRANSPORTATION DEVELOPMENT

Willowmore's transportation network is crucial for facilitating movement within the town and connecting it to the broader region. The R329, which links Willowmore to Steytlerville, serves as a primary transport route, providing a critical link to Gqeberha and the N9 highway. Upgrading the cement road portion between Steytlerville and Willowmore has been identified as a priority to enhance economic connectivity and access to remote communities. Furthermore, improvements are needed along the MR411, which connects Willowmore to Rietbron, to ensure safer and more reliable transport. Enhancements in pedestrian infrastructure, such as sidewalks, cycle lanes, and traffic calming measures, are recommended to promote non-motorized transport and increase safety for both residents and tourists. Addressing potholes and inadequate stormwater drainage will also be vital for improving road conditions.

4.5.3.5.2 INFRASTRUCTURE NEEDS ASSESSMENT

To support growth and maintain service quality in Willowmore, several critical infrastructure upgrades are necessary. The town's water supply, sourced from the Wanhoop Water Treatment Works, requires enhancements, including upgrades to supply lines, pumps, and chlorinators. A focus on upgrading stormwater drainage systems and road surfaces is crucial, particularly in areas prone to flooding. Additionally, the wastewater treatment works need capacity expansion to accommodate increased demand and comply with environmental standards. Educational and health facilities require improvement, with proposed upgrades to the local clinic and the development of a new Thusong Centre to enhance community services. Overall, investments in reliable water, sewerage, and road infrastructure are essential for the sustainable growth of Willowmore.

Table 18: Bulk Services Implications for Proposals

SERVICES IMPLICATIONS	
Water Implications	
The annual average daily demand (AADD) for the proposed population	170 kl /day
The annual average daily water demand (AADD) for the population (Liters per second)	1.96 l /s
The Total Annual Average Daily Demand (TAADD) for the proposed population	226.86 kl
The Total Annual Average Daily Demand per Second (TAADD) for the proposed population	2.62 kl
The total Peak Hour demand (TPHD)	500 kl /day
The total Peak Hour demand (TPHD) - Liters per second	6.84 l /s
The total Elevated Storage/Towers supply rate from the storage reservoir should be > -	7.53 kl
The total reservoir storage for the proposed development should be no less than 48 hours of TAADD	789.36 kl
The total elevated storage volume (6 Hours TAADD and assuming no backup power available	98.67 kl
Sewer Implications	
Sewerage Proposed Average Daily Flow	143 kl /day
Sewer: Peak Dry Weather Flow	360 kl /day
Sewer: Peak Wet Weather Flow	414 kl /day
The total sewer effluent peak	4.82 l/l
Electrical Demand	
Total Maximum demand (kVA)	4716
Total Maximum Demand (MVA)	4.7162297

The infrastructure assessment for Willowmore indicates substantial needs in water, sewer, and electrical services. The annual average daily demand (AADD) for water is estimated at 170 kl/day, with a peak hour demand of 500 kl/day, requiring a storage capacity of at least 789.36 kl. Sewer infrastructure must handle peak wet weather flows of up to 414 kl/day. The projected maximum electrical demand is 4,716 kVA, highlighting the need for grid upgrades to meet future demand. These requirements emphasize the importance of comprehensive infrastructure planning and investment to support Willowmore's anticipated growth.

4.5.4 CONCLUSION

The housing development areas are designed to accommodate the projected growth, which includes at least 905 households. Additionally, there are provisions for areas dedicated to meeting future needs for socio-economic facilities and services within the town.

In conclusion, the spatial and land use proposals for Willowmore should focus on several key areas to enhance the town's functionality and appeal. Developing public facilities to address the current shortage of services should be the highest priority to create a sustainable human settlement. Special attention is needed to protect the heritage resources within Willowmore and use these resources for the tourism industry. The town should support a diverse range of housing typologies to cater to various income groups.

Finally, a gateway feature is proposed to enhance tourism development at the main access road from the N9, further promoting Willowmore as a destination.

4.6 STEYTLERVILLE

4.6.1 HISTORY

Steytlerville, nestled in the eastern part of the Karoo and along the Groot River, is a historic town rich with heritage and Victorian charm. Its founding dates back to 1875 when the Dutch Reformed Church acquired the farm Noorspoort from the Cape Government. The goal was to establish a congregation and a community, and by 1880, residential plots were available for sale, signalling the start of a new settlement. Named after Reverend Abraham Isaac Steytler, who led the establishment of the congregation, Steytlerville became a formal town by 1891 and soon developed into an essential trading hub for nearby farming communities.

Reflecting the architectural tastes of the Victorian and Edwardian eras, Steytlerville's wide main street was designed to accommodate ox-wagon traffic, essential in the region's early days. While predominantly focused on agriculture, the town experienced a brief diamond rush in 1910 when a 4-carat diamond was discovered on the nearby farm Springbokvlakte. However, this diamond operation ended later that year due to title deed restrictions.

2nd Order Node

Throughout the years, Steytlerville has been closely tied to the wool and mohair industry, with Angora goats and Dorper sheep being central to its economy. Ostrich and goat farming have also contributed to the town's agricultural focus. While there are no approved industrial zones, the local businesses are situated along the main road, maintaining a linear and historic charm.

Steytlerville also holds historical significance from the Anglo-Boer War (1899-1902) when British troops used it as a base, and several battles were fought in the area. Today, the town remains a popular tourist destination for those interested in the Karoo's unique landscapes, the town's historical sites, and its legacy in mohair production. Steytlerville's notable landmarks include the Dutch Reformed Church, the Lady de Waal Bridge, and the Steytlerville War Memorial, all echoing the town's enduring heritage and its place in South African history.

4.6.2 SOCIO-ECONOMIC CONSIDERATIONS

The socio-economic considerations for Steytlerville focus on leveraging its unique character and addressing key challenges to promote sustainable growth, preserve heritage, and enhance the quality of life for its residents. The following points outline the primary considerations:

- As a small rural tourism node, Steytlerville's economy relies heavily on extensive and extensive agricultural activities and tourism. Expanding access to employment opportunities beyond agriculture is essential, particularly through supporting small businesses, creative industries, and tourism-related ventures.
- Positioned along the R329 near the Baviaanskloof, Steytlerville has a unique natural landscape filled with a wide variety of semi-desert vegetation. Enhancing tourism infrastructure, creating visitor attractions, and marketing the town's unique character can help boost local economic activity. The town's Edwardian and Victorian architecture, wide main street, and historical landmarks provide a strong foundation for heritage tourism.
- The old Karoo-style heritage architecture, including the wide main street, which was built to accommodate ox wagons in the late 1800s and is lined

with bougainvillaea and lamp posts with local family crests adorned on them, is central to Steytlerville's identity. Preserving these historic structures and incorporating Karoo-themed design guidelines into new developments will help maintain the town's charm and appeal.

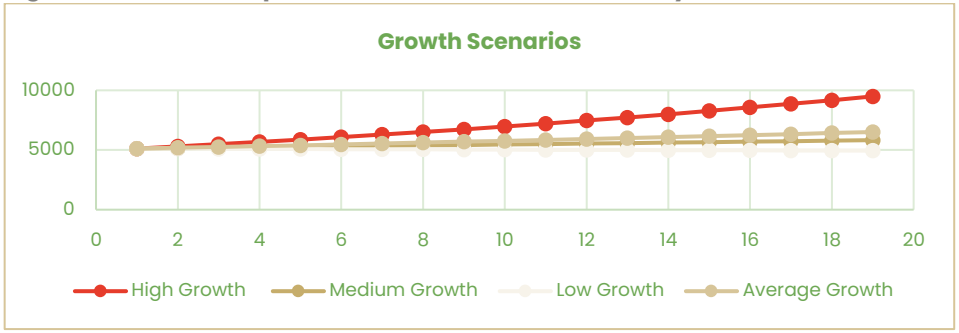
- Investment in upgrading water, sewerage, and road infrastructure is necessary to support the growing needs of the community and the tourist industry. Urban regeneration efforts should focus on revitalizing key areas of the town, improving public spaces, and enhancing basic services.
- Steytlerville forms part of the mohair meander which runs down to Gqeberha due to the number of Angora goat farms in the area which produce high-quality mohair. Expanding value-added agricultural activities, including the promotion of local products through agri-tourism can help bolster the town's economic resilience.
- Eco-tourism is another major economic driver in the area. Protecting the riverine areas and integrating green spaces into the urban layout will help maintain ecological balance, support biodiversity, and offer residents outdoor recreational options.
- Steytlerville has become a haven for artists, retirees, and creative individuals drawn to its relaxed lifestyle and vibrant cultural scene. Supporting local art, community projects, and cultural events can help strengthen the town's social fabric and attract more visitors.
- Town beautification projects, such as landscaping, street furniture, and public art installations, should be prioritized to enhance the visual appeal of Steytlerville. Efforts to restore and maintain Victorian-era buildings will contribute to the town's unique aesthetic and strengthen its position as a heritage destination.

In summary, the socio-economic strategy for Steytlerville emphasizes preserving its historical character, enhancing tourism potential, improving infrastructure, and supporting economic diversification. By building on its unique assets and addressing key challenges, Steytlerville can foster a vibrant, sustainable, and inclusive community that celebrates its rich heritage and appeals to both residents and visitors.

4.6.2.1 POPULATION GROWTH PROJECTION FOR STEYTLERVILLE (2011 - 2040)

The population projections for Steytlerville show varying growth scenarios based on historical trends and potential future conditions. By 2025, the population is expected to range from 5,088 (Low Growth) to 5,672 (High Growth). By 2030, it could increase to between 5,040 (Low Growth) and 6,734 (High Growth). In 2035, projections range from 4,993 (Low Growth) to 7,996 (High Growth), reflecting a broader gap influenced by economic and migration trends. By 2040, the population may range from 4,946 (Low Growth) to 9,493 (High Growth), while the Medium Growth scenario estimates a population of 5,824. These projections highlight the need for flexible and adaptive planning to accommodate different growth rates and ensure sustainable development in Steytlerville.

Figure 14: Possible Population Growth Scenarios for Steytlerville



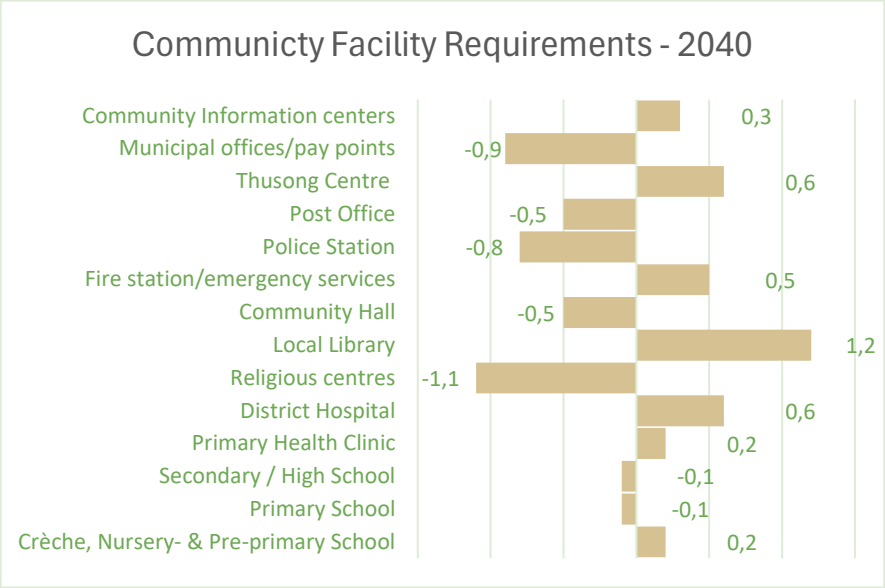
4.6.2.2 SOCIAL FACILITY NEEDS

Table 19: Social Facility Needs Assessment

SOCIAL FACILITIES NEEDS ASSESSMENT					
Facility	**Existing**	**Need 2024**	**Need 2030**	**Need 2040**	**Ha Required**
Education					
Crèche, Nursery- & Pre-primary School	1	0	0	0	0.01
Primary School	2	0	0	0	-0.24
Secondary / High School	1	0	0	0	-0.46
Health					
Primary Health Clinic	1	0	0	0	0.02
District Hospital	0	1	1	1	0.6

Community Services					
Religious centres	4	-2	-1	-1	-0.165
Local Library	0	1	1	1	0.018
Community Hall	1	-1	-1	-1	-0.25
Fire station/emergency services	0	1	1	1	0.6
Police Station	1	-1	-1	-1	-0.2
Post Office	1	-1	-1	-1	-0.025
Thusong Centre	0	1	1	1	0.6
Municipal offices/pay points	1	-1	-1	-1	-0.27
Community Information centres	0	0	0	0	0.003

The social facilities need assessment for Steytlerville projects a slight increase in demand for fire safety, health, and community services by 2040, driven by anticipated population growth and urban expansion. The analysis highlights the necessity for additional infrastructure, with an estimated 2 hectares of land required to meet these needs. Fire services are a current need which will only become more crucial as the population grows and the urban area expands. Health services will need to expand, including a district hospital, covering 0.6 hectares to ensure adequate healthcare access. Overall, the community services will not need drastic expansion with only a local library and Thusong Centre required to address the projected need. This will require approximately 0.8 hectares and could be provided within the same property. While existing facilities like police stations and municipal offices may suffice, there is a clear need for enhanced infrastructure across health, fire safety and community amenities to accommodate future growth. This expansion aims to support sustainable development, improve service delivery, and enhance the overall quality of life for residents in Steytlerville.



4.6.3 SPATIAL PLANNING CONSIDERATIONS

4.6.3.1 KEY SPATIAL PLANNING GUIDELINES:

- Strengthen the preservation of Steytlerville's unique Karoo-style heritage and low-key historical character in accordance with the National Heritage Resources Act, ensuring compliance with guidelines from the South African Heritage Resources Agency (SAHRA).
- Restrict new mixed-use development to designated zones, focusing on low-impact activities that align with the town's rural character and minimize environmental impact.
- Support the growth of tourism-related facilities, including accommodations, cultural attractions, and visitor services, positioning Steytlerville as a rural hub for eco-tourism, agri-tourism, and heritage tourism along the Baviaanskloof.
- Promote agricultural activities and value chain development, including agri-tourism projects and local farm-to-table initiatives, to boost the local economy and showcase the region's agricultural heritage.

- Limit building heights to a maximum of two storeys to maintain the small-town, rural character of Steytlerville and ensure compatibility with existing architectural styles.
- Establish a network of walking routes and trails that highlight historical sites and integrate the town's open spaces, creating a cohesive recreational and tourism experience.
- Create a well-connected open space network with green corridors, pedestrian pathways, and street furniture, enhancing public areas and promoting non-motorized transport.
- Encourage low-intensity, mixed-use activities along main access roads, supporting local businesses while maintaining the town's tranquil and rural atmosphere.
- Facilitate the growth of sustainable agricultural practices, including the development of local value chains and processing facilities, to enhance economic resilience and create employment opportunities.

These spatial planning guidelines aim to preserve Steytlerville's historical charm, support sustainable development, and position the town as a vibrant, tourism-focused node in the Karoo region.

4.6.3.2 OPEN SPACE SYSTEM

Active Open Spaces (OP1)

- Ensure flexibility in layout and amenities to accommodate various recreational pursuits and community events.
- Include playgrounds with swings, slides, and climbing structures tailored to different age groups.
- Establish consistent design standards for active open spaces to create a cohesive and visually appealing environment.
- Develop outdoor gyms to improve community health and diversify the use of the properties.
- Supported Zonings: **Open Space Zone 1**

Passive Open Spaces (OP2)

- Incorporate local vegetation such as various species of aloes, succulents and grasses into open space design, creating scenic routes and gardens.
- Employing native flora in landscaping and gardening endeavours fosters sustainability. Indigenous plants are naturally suited to local environments, demanding minimal water, fertilizer, and pesticides compared to exotic species. They offer cost-effective maintenance solutions, conserve water reservoirs, and bolster the indigenous ecosystem.
- Develop well-marked trails linking open spaces, offering opportunities for exploration.
- Identify picturesque spots with amenities like tables and benches for picnics.
- Provide strategically placed waste management facilities for cleanliness.
- Place restroom facilities strategically for user convenience and hygiene.
- Ensure proper lighting and maintenance along hiking trails and public facilities.
- Use lighting and landscaping for visibility and surveillance.
- Establish pathways linking passive spaces to active recreation zones.
- Supported Zonings: **Passive Open Space & Open Space Zone 2**

Conservation Management (OP3)

- Undevelopable open spaces are to be maintained and enhanced by introducing indigenous plants and trees, supporting the town's tourism appeal. Non-native plant species will be removed to preserve the natural landscape and improve the overall aesthetic, making the town more attractive to visitors.
- Conduct thorough ecological assessments to understand the biodiversity, habitats, and ecological processes present within conservation areas.
- Use this information to inform management strategies and prioritize conservation efforts.
- Designate specific areas for low-impact recreational activities such as hiking, birdwatching, and nature photography, while restricting access to sensitive areas.
- Enhance ecosystem resilience through measures such as habitat connectivity, water resource management, and invasive species control.
- Supported Zonings: **Protected Areas & Open Space Zone 2**

Sport Facilities (OP4)

To upgrade existing sports facilities by considering the following:

- Choose a centrally located site with ample space for various sports facilities and parking.
- Ensure zoning regulations permit a mix of indoor and outdoor sports activities.
- Design multipurpose facilities for padel tennis, field sports, and other sports clubs.
- Include amenities like changing rooms, seating, and equipment rental.
- Ensure sufficient parking spaces and accessible pathways.
- Enhance the facilities with greenery, seating areas, and amenities like drinking fountains.
- Create a welcoming environment for visitors to relax and socialize.
- Involve local sports clubs and community members in the planning process.
- Develop a diverse program of sports activities and events to engage residents of all ages.
- Supported Zonings: **Open Space Zone 1 & Resort Zone**

Recreation Facilities (OP5)

The Steytlerville Showgrounds can be upgraded and redeveloped to host local arts and agri-tourism events, aimed at enhancing the town's agri-eco, Karoo heritage, and cultural tourism appeal. This initiative will attract visitors and strengthen the distinctive tourism character of Steytlerville.

The showgrounds can also be utilised as a skills development or recreational sports facility, offering opportunities for community engagement and growth. Alternatively, the site could be leased or privatised for local farmers to establish an agri-show, cattle or game auction facility, or an agri-processing hub, supporting local agricultural activities and economic development.

- Supported Zonings: **Open Space Zone 1, Passive Open Space & Resort Zone**

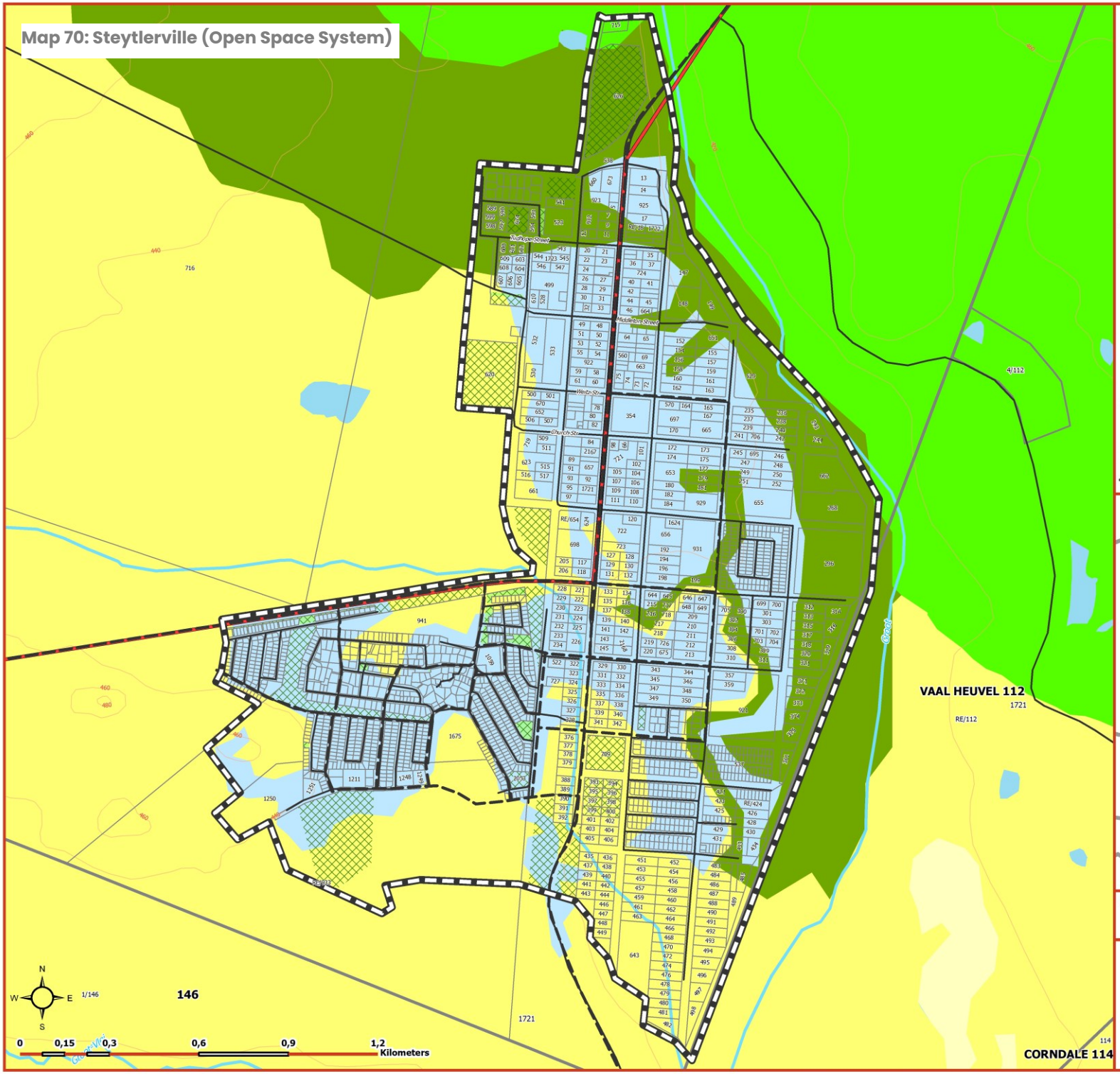
General Open Space Guidelines

To enhance and sustainably manage open spaces in urban areas, the following general guidelines are proposed:

- Use drought-tolerant and waterwise plant species to reduce irrigation needs.
- Implement rainwater harvesting systems and greywater recycling for efficient water use in green spaces.
- Integrate open spaces with urban areas through a network of footpaths, trails, and paved walking routes.
- Design multi-use pathways to accommodate walking, running, and cycling, improving access and encouraging active use.
- Prioritize the use of native plants and trees to enhance biodiversity and reduce maintenance.
- Incorporate fruit-bearing trees to provide shade, contribute to food security, and enhance the aesthetic value of public spaces.
- Design open spaces to support a variety of uses, including areas for community events, markets, and recreational activities.
- Provide versatile, multi-purpose facilities that cater to different recreational needs.
- Encourage local community involvement in the care and maintenance of open spaces through volunteer programs.
- Establish advisory committees with community stakeholders to guide the planning and improvement of open spaces.

Image 9: Typical Open Space approach to be followed for Steytlerville's Open Space System

Map 70: Steytlerville (Open Space System)



Open Space System Steytlerville

- Rivers
- Wetlands
- Parent Farm
- Farm Portions
- Erf
- Contours
- Main / Provincial Road
- National Road
- Roads
- Railway Lines

Terrestrial - CBA

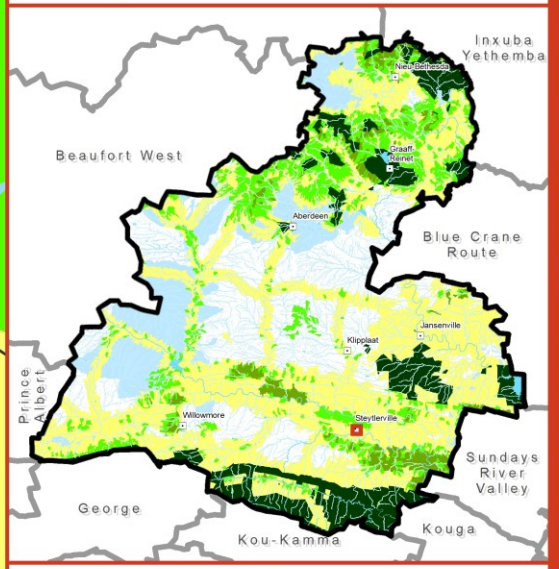
- PA
- CBA 1
- CBA 2
- ESA 1
- ESA 2
- Other

Freshwater - CBA

- CBA 1
- CBA 2
- ESA 1
- ESA 2
- Other

Steytlerville Spatial Proposals

- Open Space System
- Urban Edge
- Activity Corridor



Source: Dr Beyers Naude SDF 2024

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4.6.3.3 HUMAN SETTLEMENTS DEVELOPMENT

The housing development strategy for Steytlerville addresses the growing need for diverse residential options while preserving the town's distinct Karoo heritage. By 2030, an estimated 2.2 hectares of land will be needed, increasing to 7 hectares by 2040, to accommodate a projected demand of 135 additional housing units by 2030 and 315 units by 2040. The proposed housing zones include a mix of low-density, medium-density, and greenfield developments, focusing on efficient land use, formalisation of informal settlements, and infill projects that enhance connectivity and integrate well with existing infrastructure.

Key development zones include HD2 for medium-density infill residential use, catering to short-term housing needs, and HD7 for medium-density densification projects that prioritize sustainable design. Greenfield projects such as HD3 and HD4 offer higher-density options with incremental upgrades and service provision. Additionally, HD5 and HD6 focus on the longer-term medium-density housing demand. The comprehensive approach aims to accommodate future growth, promote walkability, and support a variety of housing types while enhancing the quality of life and maintaining the rural character of Steytlerville.

Table 20: Steytlerville Housing Assessment

Housing Development Needs - 2030		
Ha Required - @ 10 U/Ha	5.20843	ha
Ha Required - @ 20 U/Ha	2.60421	ha
Ha Required - @ 40 U/Ha	1.30211	ha
Ha Required - @ 50 U/Ha	1.04169	ha
TOTAL - Distributed Densities	**2.23962**	ha
Housing Development Needs - 2040		
Ha Required - @ 10 U/Ha	16.4567	ha
Ha Required - @ 20 U/Ha	8.22837	ha
Ha Required - @ 40 U/Ha	4.11418	ha
Ha Required - @ 50 U/Ha	3.29135	ha
TOTAL - Distributed Densities	**7.0764**	ha

Total number of Additional Houses Required	2022	2030	2040
	0	**135**	**315**
Total Area Proposed (Spatial Proposals)	**Ha**	**Ruling Erf Size**	**Possible Housing Opportunities**
	82.5	443	905.575

The projected increase in housing demand highlights the need for proactive planning and development. To address this, a strategic land allocation of 82.5 hectares has been proposed, with an average erf size of 443 m², potentially supporting up to 905 housing opportunities. This reflects a pressing need to accelerate land development and provide adequate housing to meet the growing demand in Steytlerville.

Medium-Density Infill Residential Development (HD1)

- To support infill and densification of the smallholdings situated to the west and north of the medium-density residential area along Hayward Street, extending eastward in Steytlerville, the proposed development aims to integrate and connect these areas along Hayward Street towards the western part of town.
- The available area, approximately 5.5 hectares, with a proposed erf size of 288 m² per stand, could accommodate additional residential stands. The proposed area could potentially allow for 191 additional residential stands, supporting the goal of increasing density and promoting better integration along Hayward Street.
- Prioritize pedestrian-friendly design principles, with interconnected streets, sidewalks, and green spaces to promote walkability and community interaction.
- Various housing types are encouraged to cater to diverse needs.
- Preserving the rural ambience of the town is essential.
- Supported Zonings: **Residential Zone 1 & Residential Zone 4(Townhouses)**

Medium-Density Infill Residential Development (HD2)

- The areas are approximately 2 hectares.
- Density Up to 35 Dwelling Units per Hectare.
- Allow for incremental upgrading of the housing areas.
- The development is regarded as Greenfield Development.

- Provide basic services and a holistic road design approach.
- Support IRDP housing grant development.
- Supported Zonings: **Residential Zone 1 & Residential Zone 4**

Medium Density Residential development (HD3)

- The area is approximately 2.7 hectares in extent.
- Density Up to 35 Dwelling Units per Hectare.
- Prioritize pedestrian-friendly design principles, with interconnected streets, sidewalks, and green spaces to promote walkability and community interaction.
- Incorporate sustainable design features such as rainwater harvesting systems, and energy-efficient appliances to reduce environmental impact.
- Provide basic services and a holistic road design approach.
- Support IRDP housing grant development.
- HD3 can be used for emergency housing.
- Supported Zonings: **Residential Zone 1 & Residential Zone 4**

Medium Density Residential development (HD4)

- The area is approximately 2.4 hectares in extent.
- Density Up to 35 Dwelling Units per Hectare.
- Prioritize pedestrian-friendly design principles, with interconnected streets, sidewalks, and green spaces to promote walkability and community interaction.
- Provide basic services and a holistic road design approach.
- Support IRDP housing grant development.
- Incorporate sustainable design features such as rainwater harvesting systems, and energy-efficient appliances to reduce environmental impact.
- Supported Zonings: **Residential Zone 1 & Residential Zone 4**

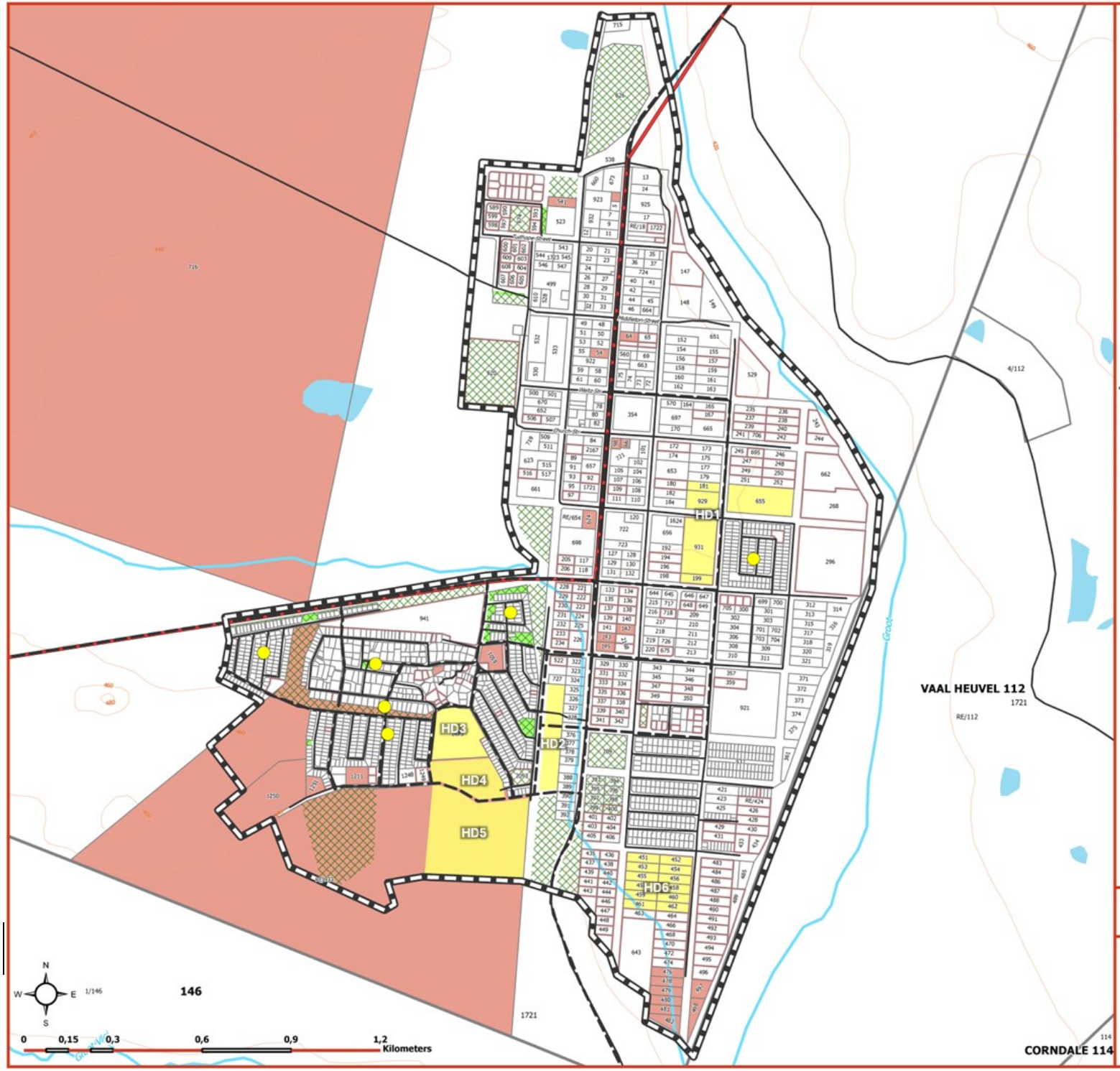
Medium Density Residential development (HD5)

- The area is approximately 8.9 hectares in extent.
- Density Up to 35 Dwelling Units per Hectare.
- Prioritize pedestrian-friendly design principles, with interconnected streets, sidewalks, and green spaces to promote walkability and community interaction.
- Provide basic services and a holistic road design approach.
- Support IRDP housing grant development.
- Incorporate sustainable design features such as rainwater harvesting systems, and energy-efficient appliances to reduce environmental impact.
- Supported Zonings: **Residential Zone 1 & Residential Zone 4**

Medium-Density Infill Residential Development (HD6)

- To support infill and densification in Steytlerville, a medium-density residential development is proposed by consolidating the smallholding erven located between the southern sections of Victoria and Bosman Streets.
- This area, approximately 4.1 hectares in size, aims to extend development towards the southern part of town, enhancing connectivity and integration.
- With a planned erf size of 288 m² per stand, the proposed medium-density residential area could potentially accommodate a significant number of additional stands. The consolidation and development of this 4.1-hectare area could yield approximately 142 additional residential stands, contributing to increased density and promoting better integration within the southern sections of Steytlerville.
- Various housing types are encouraged to cater to diverse needs.
- Supported Zonings: **Residential Zone 1 & Residential Zone 4**

Image 10: Karoo-style architecture should be incorporated as the design philosophy for housing developments, including affordable housing projects. This traditional aesthetic, characterized by simple lines, pitched roofs, verandas, and the use of local materials, should be embraced to maintain the regional heritage and enhance the visual appeal of the residential areas.



Human Settlement Development Steytlerville

- Rivers
- Contours
- Wetlands
- Main / Provincial Road
- Parent Farm
- National Road
- Farm Portions
- Roads
- Erf
- Railway Lines
- Human Settlement Development

Steytlerville Spatial Proposals

- Housing Development Area
- Open Space System
- Urban Edge
- Activity Corridor

General Category

- Municipal
- Vacant
- Public Place

Map 73: Steytlerville (Housing Development area)

Source: Dr Beyers Naude SDF 2024

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4.6.3.4 SPATIAL STRUCTURING

The spatial structuring elements pertain to the proposed mixed-use development corridors and zones for the town. While the terminology for these corridors and zones may be consistent, they differentiate between areas designated for future development and those that are already developed. This section also addresses the Central Business Area, Industrial Development Focus Areas, and Institutional Zones. Additionally, it highlights key nodes identified for each town and references areas designated for government and municipal uses.

4.6.3.4.1 DENSIFICATION AREAS

To consider the following densification zones for Steytlerville:

- Densification towards the south of the CBD on the corner of Victoria Street and Hayward Street. This area supports low-intensity business and retail development, as well as residential infill development, up to a density of 30 dwelling units per hectare. Zonings supported include **Business Zone 2, Residential Zone 3 and Residential Zone 4.**
- Densification south of Hayward Street between Bosman and Rivier Street. This area is designated for higher-density residential development at a maximum density of 40 dwelling units per hectare. Zonings supported include **Residential Zone 1 and Residential Zone 5.**

4.6.3.4.2 MIXED-USE DEVELOPMENT CORRIDORS (MU)

The proposed mixed-use development corridors in Steytlerville are designed to enhance the town's economic activity, integrate various land uses, and promote the unique Karoo heritage and tourism appeal. These corridors aim to create vibrant and functional spaces while maintaining the distinctive cultural and historical character of Steytlerville.

MU1 – Low-Intensity Retail, Business, and Light Industry Corridor

- The MU1 corridor is designated for low-intensity retail and business uses, focusing on small-scale commercial activities that cater to the local community and visitors. This area will accommodate:
- Establishments such as guest houses, B&Bs, and small lodges cater to visitors exploring the region.
- Local shops, small offices, and service-based businesses provide essential amenities.
- Small workshops, repair services, and light manufacturing are compatible with the surrounding residential and commercial areas.
- This corridor supports economic diversification while preserving the small-town character of Steytlerville. It encourages the development of businesses that align with the town's tourism and service needs, offering employment opportunities and local conveniences without compromising the historical aesthetic.
- Supported Zonings: **Business Zone 2, Residential Zone 3 & Resort Zone**

MU2 – Central Business Area Mixed-Use Corridor

The MU2 corridor is envisioned as a vibrant, central business district (CBD)-like area, supporting a diverse mix of uses that cater to both residents and tourists. Key activities include:

- Retail and Business Services: Shops, local businesses, and professional offices that form the core of commercial activities in Steytlerville.
- A strategically located service station to support both local and transient traffic, providing essential services for travellers.
- Facilities such as municipal offices, public services, and other institutional functions that serve the local community.
- Supported Zonings: **Business Zone 1**

Development in this corridor must align with the heritage and tourism character of Steytlerville. A thematic approach, inspired by Karoo-style architecture, is encouraged to maintain the town's unique visual appeal. This includes incorporating features such as:

- Use of traditional Karoo elements like verandas, stone walls, and rustic facades.
- Pedestrian-friendly layouts, street furniture, and signage enhance the overall aesthetic and support a cohesive, tourist-friendly environment.

MU3 – Tourism Corridor

This corridor is tailored to tourism-related uses, including overnight accommodation, retail, and business activities that cater to visitors. It aims to enhance the local tourism experience by offering a mix of tourist facilities,

restaurants, craft shops, and recreational services, contributing to the overall tourism appeal of the area.

- The corridor is designated for tourism uses such as guest accommodation, restaurant facilities and recreation facilities.
- Pedestrian-friendly layouts, street furniture, and signage enhance the overall aesthetic and support a cohesive, tourist-friendly environment.
- Supported Zonings: **Business Zone 2, Business Zone 3, Open Space Zone 1 & Resort Zone**

4.6.3.4.3 INSTITUTIONAL DEVELOPMENT ZONES

Educational Facilities (IZ1)

The following guidelines and uses are proposed:

- Provision of education and related uses.
- Includes schools, crèches, tertiary facilities, and support activities.
- Supported Zonings: **Institution 1**

Community Services (IZ2)

The following guidelines and uses are proposed:

- Ensuring wheelchair-accessible parking spaces are available around the facility.
- Provision for worship facilities and related uses.
- Includes places of assembly
- Provision of a wide range of community facilities, including institutions.
- Supported Zonings: **Business Zone 1 & Institution 2**

Municipal and Government Use (IZ3)

Guidelines and supported uses encompass:

- Government and municipal uses, including magistrates' courts, municipal offices, police stations, and others.
- Ensuring the safety and accessibility of facilities for all individuals.
- Installing clear signage to facilitate access to services.
- Allocating adequate parking areas, including wheelchair-friendly spaces.
- Supported Zonings: **Institution1, Authority Zone, Business Zone 1 & Business**
- **Zone 2**
- **Authority Precinct Area (IZ4)**
- Designating a specific area for government and municipal purposes to facilitate the provision of necessary social and community services to the local community in the short, medium, and long term.
- Ensuring the integration of the precinct area with surrounding land use proposals and open space systems through urban design and street furniture development.
- Supported Zonings: **Institution 1, Institution 2, Authority Zone, Business Zone 1 & Business Zone 2**

Cemetery Development (IZ5)

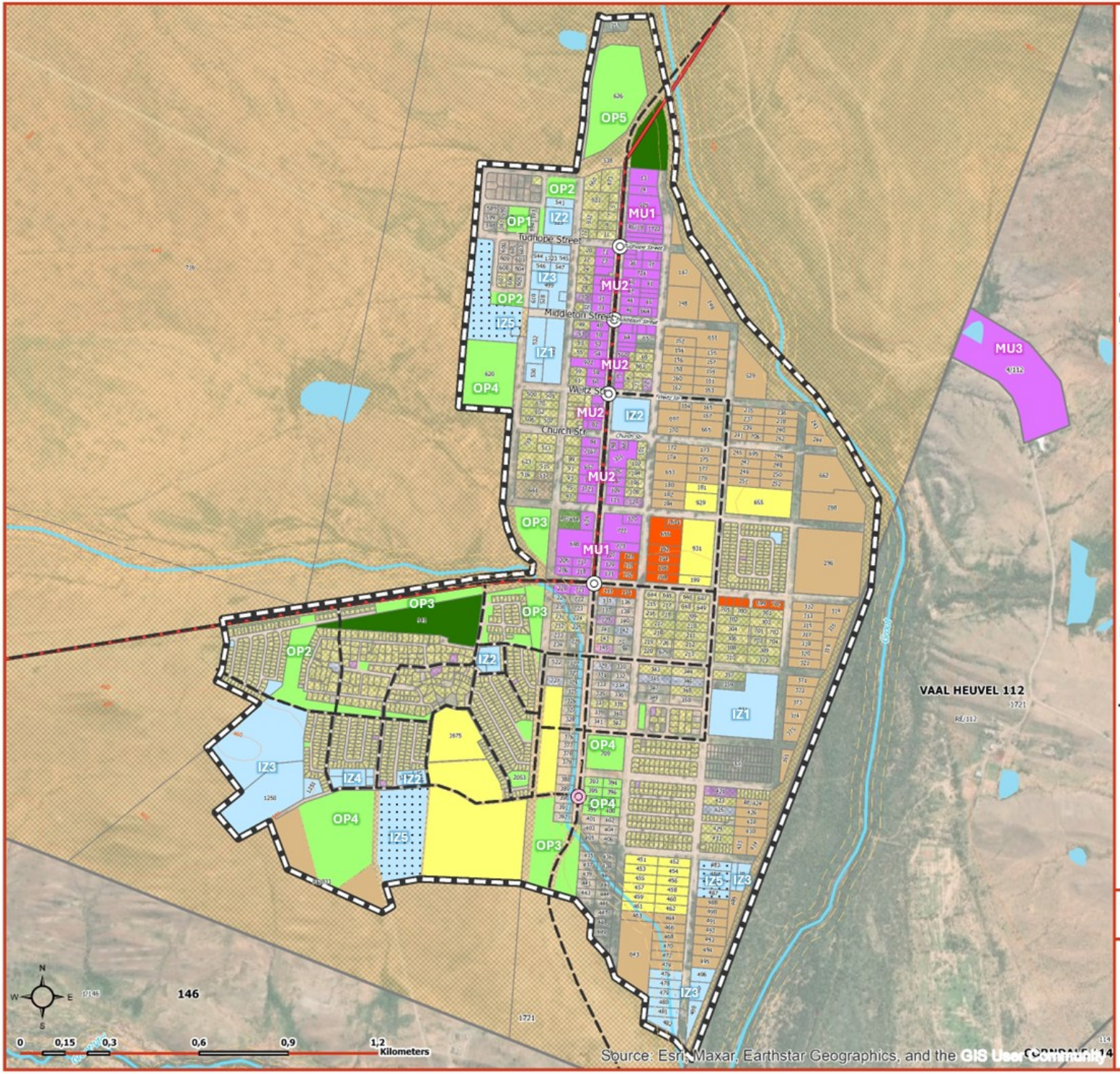
Areas designated for cemeteries and future cemetery expansion to accommodate future needs as they arise.

- Supported Zone: **Authority Zone**

4.6.3.4.4 HERITAGE ZONE

Key considerations within the Heritage and Tourism Zone include:

- Use plastic or aluminium windows/doors on street facades while maintaining authenticity with the town's heritage design.
- Ensure materials used match the heritage style of the area.
- Obtain approval from local authorities, and in provincial heritage areas, consent from the Eastern Cape Provincial Heritage Resources Authority is required.
- Submit sketch plans and site photographs before preparing final plans to incorporate recommendations.
- Depart from zoning regulations if proposed developments align with heritage area aims.
- Maintain street-facing building edges, limited to two stories high from any adjacent street boundary.
- For original buildings, additions can be made at the rear of the existing courtyard.
- Refer to the South African Heritage Resources Agency for guidance, established under the National Heritage Resources Act.
- Supported Zonings: **Resort Zone, Protected Area, Passive Open Space, Open Space Zone 2**



Local Spatial Proposals Steytlerville

River Buffer Distance

- 20 m
- 50 m
- Rivers
- Wetlands
- Parent Farm
- Farm Portions
- Erf
- Contours
- Main / Provincial Road
- National Road
- Railway Lines
- Existing Land Use
- Protected Agricultural Areas

Existing Spatial Planning Land Use

- Agriculture
- Heritage and Tourism Area
- Industrial
- Informal Settlement
- Institutional Area
- Mixed Use
- Open Space System
- Residential Development Area
- Smallholdings
- Transportation

Steytlerville Spatial Proposals

- Cemetery
- Densification Area
- Heritage and Tourism Area
- Residential Development Area
- Institutional Zone
- Mixed Use Corridor
- Open Space System
- Small holdings
- Urban Edge
- Key Intersection
- Proposed Key Intersection
- Road Maintenance

Map 76: Steytlerville (Spatial Proposals)

Source: Dr Beyers Naude SDF 2024

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4.6.3.5 INFRASTRUCTURE DEVELOPMENT

4.6.3.5.1 TRANSPORTATION DEVELOPMENT

Transportation in Steytlerville requires significant improvements to enhance safety, accessibility, and regional connectivity. There is a need to bolster public transportation networks, especially along R329, to facilitate easier access to the CBD. Non-motorized transport infrastructure must be improved to accommodate cyclists and pedestrians, particularly along proposed mixed-use corridors. To better serve residents, taxi and bus stops should be strategically placed in key locations, including the R329 and Sarel Cilliers Street. These initiatives aim to make transportation more efficient, safer, and conducive to the town's growth and development.

4.6.3.5.2 INFRASTRUCTURE NEEDS ASSESSMENT

To ensure the continued growth and well-being of the town, several critical infrastructure development projects are identified:

- Implement traffic calming measures strategically placed within residential areas and near schools to improve road safety and reduce speeding incidents.
- Deploy Wi-Fi towers in public areas and key locations to ensure residents and tourists have access to dependable internet services.
- Build sidewalks and cycle lanes along major roads and pedestrian routes to encourage walking and cycling as alternative modes of transportation.
- Upgrade identified key intersections to enhance traffic flow and safety. Consider assessing the intersections along the R329 to improve flow and access to and from the CBD.
- Upgrading of identified roads throughout Steytlerville.
- Upgrading of the Steytlerville Water Treatment Works and Wastewater Treatment Works to improve the Blue Drop and Green Drop Score respectively as well as the availability of continuous water supply to the town.
- Development of a district hospital to service the residents of Steytlerville and surrounding communities.

Table 21: Bulk Services Implications for Proposals

SERVICES IMPLICATIONS	
Water Implications	
The annual average daily demand (AADD) for the proposed population	80 kl /day
The annual average daily water demand (AADD) for the population (Liters per second)	0.98 l /s
The Total Annual Average Daily Demand (TAADD) for the proposed population	113.81 kl
The Total Annual Average Daily Demand per Second (TAADD) for the proposed population	1.31 kl
The total Peak Hour demand (TPHD)	200 kl /day
The total Peak Hour demand (TPHD) - Liters per second	3.43 l /s
The total Elevated Storage/Towers supply rate from the storage reservoir should be > -	3.77 kl
The total reservoir storage for the proposed development should be no less than 48 hours of TAADD	395.74 kl
The total elevated storage volume (6 Hours TAADD and assuming no backup power available	49.46 kl
Sewer Implications	
Sewerage Proposed Average Daily Flow	72 kl /day
Sewer: Peak Dry Weather Flow	182 kl /day
Sewer: Peak Wet Weather Flow	209 kl /day
The total sewer effluent peak	2.42 l/l
Electrical Demand	
Total Maximum demand (kVA)	718
Total Maximum Demand (MVA)	0.7175784

The infrastructure assessment for Steytlerville indicates substantial needs in water, sewer, and electrical services. The annual average daily demand (AADD) for water is estimated at 80 kl/day, with a peak hour demand of 200 kl/day, requiring a storage capacity of at least 395.74 kl. Sewer infrastructure must handle peak wet weather flows of up to 209 kl/day. The projected maximum electrical demand is 718 kVA, highlighting the need for grid upgrades to meet future demand. These requirements emphasize the importance of

comprehensive infrastructure planning and investment to support Steytlerville's anticipated growth.

4.6.4 CONCLUSION

The housing development areas are designed to accommodate the projected growth, which includes at least 905 households. Additionally, there are provisions for areas dedicated to meeting future needs for socio-economic facilities and services within the town.

In conclusion, the spatial and land use proposals for Steytlerville should focus on several key areas to enhance the town's functionality and appeal. The town should support a diverse range of housing typologies to cater to various income groups. Agri-tourism is an untapped market of which Steytlerville can take advantage by implementing the suggested upgrading of Steytlerville Showgrounds. Preserving and sustaining the town's old buildings and heritage resources is also essential to the tourism industry of Steytlerville.

4.7 NIEU-BETHESDA

4.7.1 HISTORY

Nestled at the base of the Sneeuberg mountains, Nieu-Bethesda is a small village founded in 1875 on the farm Uitkyk, which belonged to Barend Jacobus Pienaar. Initially established as a church town for the farming community, its name, given by Reverend Charles Murray, is derived from the biblical "Bethesda," meaning "place of flowing water." Although Nieu-Bethesda grew around its Dutch Reformed Church parish, it gained municipal status in 1886, though residents were long obliged to pay taxes to both the church and the municipality.

The town's early growth as an agricultural hub was spurred by its fertile soils and water from the Gat River valley, which facilitated wheat and barley farming. However, its relative isolation from transport networks eventually hindered its development, and it experienced a decline during the Great Depression.

Nieu-Bethesda gained renewed prominence in the late 20th century as a creative enclave, attracting artists and writers drawn to its unique landscape and serene atmosphere. This transformation is largely due to Helen Martins, an eccentric artist who spent her life creating intricate cement and glass sculptures in her home, known today as the Owl House. The Owl House has since become a museum and a global attraction, bringing new life to the village.

2nd Order Node

South African playwright Athol Fugard further cemented the town's artistic reputation. His play *The Road to Mecca,* inspired by Martins' life, sparked international interest in Nieu-Bethesda. Today, the village remains a peaceful but vibrant community, where tourism, art, and local crafts drive the economy, and unpaved streets and traditional Karoo-style houses retain their historical charm.

4.7.2 SOCIO-ECONOMIC CONSIDERATIONS

The socio-economic considerations for Nieu-Bethesda focus on leveraging its unique character and addressing key challenges to promote sustainable growth, preserve heritage, and enhance the quality of life for its residents. The following points outline the primary considerations:

- As a small rural tourism node, Nieu-Bethesda's economy relies heavily on extensive agricultural activities and tourism. Expanding access to employment opportunities beyond agriculture is essential, particularly through supporting small businesses, creative industries, and tourism-related ventures.
- Positioned within the fertile valley of the Sneeuberg mountain agriculture, especially Angora goat farming and sheep farming, has been the main contributor to the economy of Nieu-Bethesda. In recent times tourism, mostly due to the art scene has taken over the town development with various craft shops, galleries, potteries and sculpture gardens. The town's Edwardian and Victorian architecture, historic Dutch Reformed Church, and historical landmarks provide a strong foundation for heritage tourism.
- Investment in upgrading water, sewerage, and road infrastructure is necessary to support the growing needs of the community and the tourist industry.
- Eco-tourism is another major economic driver in the area. Protecting the riverine areas and integrating green spaces into the urban layout will help

maintain ecological balance, support biodiversity, and offer residents outdoor recreational options.

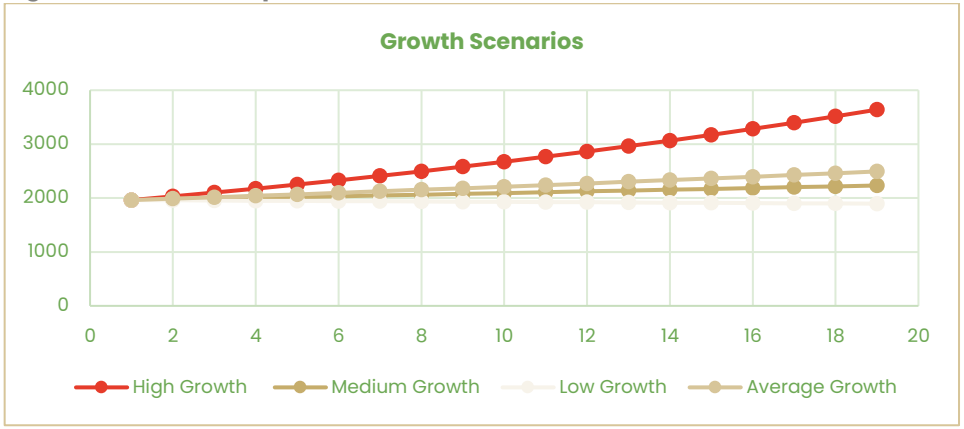
- Sustaining the rural character of Nieu-Bethesda is important as it protects the clear night skies, natural landscapes and artistic culture which makes the town unique and attracts visitors from all over the world.
- Town beautification projects, such as landscaping, street furniture, and public art installations, should be prioritized to enhance the visual appeal of Nieu-Bethesda. Efforts to restore and maintain Victorian-era buildings will contribute to the town's unique aesthetic and strengthen its position as a heritage destination.
- There is potential for further value chain development in agribusiness and agri-tourism initiatives that leverage the town's agricultural heritage. The area is renowned for the Karoo Lamb and mohair production which should be leveraged for agri-tourism and farm-to-table initiatives to support local produce.

In summary, the socio-economic strategy for Nieu-Bethesda emphasizes preserving its history, world-famous geology, wildlife, art and remarkable people, enhancing tourism potential, improving infrastructure, and supporting economic diversification. By building on its unique assets and addressing key challenges, Nieu-Bethesda can foster a vibrant, sustainable, and inclusive community that celebrates its rich heritage and appeals to both residents and visitors.

4.7.2.1 POPULATION GROWTH PROJECTION FOR NIEU-BETHESDA (2011 - 2040)

The population projections for Nieu-Bethesda show varying growth scenarios based on historical trends and potential future conditions. By 2025, the population is expected to range from 1 591 (Low Growth) to 2 174(High Growth). By 2030, it could increase to between 1 932 (Low Growth) and 2 582 (High Growth). In 2035, projections range from 1 914(Low Growth) to 3 065 (High Growth), reflecting a broader gap influenced by economic and migration trends. By 2040, the population may range from 1,896 (Low Growth) to 3,639 (High Growth), while the Medium Growth scenario estimates a population of 2,233. These projections highlight the need for flexible and adaptive planning to accommodate different growth rates and ensure sustainable development in Nieu-Bethesda.

Figure 15: Possible Population Growth Scenarios for Nieu-Bethesda



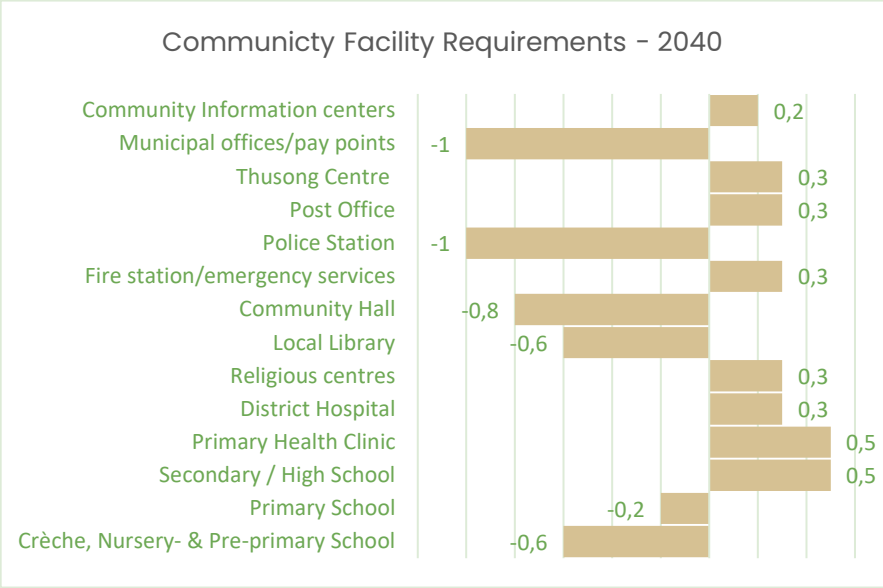
4.7.2.2 SOCIAL FACILITY NEEDS

Table 22: Social Facility Needs Assessment

SOCIAL FACILITIES NEEDS ASSESSMENT					
Facility	**Existing**	**Need 2024**	**Need 2030**	**Need 2040**	**Ha Required**
Education					
Crèche, Nursery- & Pre-primary School	1	-1	-1	-1	-0.01
Primary School	1	0	0	0	-0.48
Secondary / High School	0	0	0	1	2.3
Health					
Primary Health Clinic	0	0	1	1	0.05
District Hospital	0	0	0	0	0.3
Community Services					
Religious centres	1	0	0	0	0.045
Local Library	1	-1	-1	-1	-0.009
Community Hall	1	-1	-1	-1	-0.4
Fire station/emergency services	0	0	0	0	0.36
Police Station	1	-1	-1	-1	-0.25
Post Office	0	0	0	0	0.015

Thusong Centre	0	0	0	0	0.3
Municipal offices/pay points	1	-1	-1	-1	-0.3
Community Information centres	0	0	0	0	0.002

The social facilities need assessment for Steytlerville projects a slight increase in demand for health, and education services by 2040, driven by anticipated population growth and urban expansion. The analysis highlights the necessity for additional infrastructure, with an estimated 2.5 hectares of land required to meet these needs. Health services will need to expand, including a primary health clinic, covering 0.6 hectares to ensure adequate healthcare access. A district hospital is more suited for more densely populated areas such as Graaff-Reinet which is the main service centre for Nieu-Bethesda. Furthermore, a secondary school may be required by 2040 which would require 2.3 ha of land. Overall, the community services will not need any expansion with existing facilities like police stations and municipal offices sufficient, there is a clear need for enhanced infrastructure across health and education to accommodate future growth. This expansion aims to support sustainable development, improve service delivery, and enhance the overall quality of life for residents in Steytlerville.



4.7.3 SPATIAL PLANNING CONSIDERATIONS

4.7.3.1 KEY SPATIAL PLANNING GUIDELINES:

- Strengthen the preservation of Nieu-Bethesda's unique Karoo-style heritage and low-key historical character in accordance with the National Heritage Resources Act, ensuring compliance with guidelines from the South African Heritage Resources Agency (SAHRA).
- Restrict new mixed-use development to designated zones, focusing on low-impact activities that align with the town's rural character and minimize environmental impact.
- Promote the art industry of Nieu-Bethesda by promoting local cultural events, craft markets and art exhibitions. Access to the town and municipal infrastructure should be sufficient to accommodate larger volumes of visitors for larger local events.
- Support the growth of tourism-related facilities, including accommodations, cultural attractions, and visitor services, positioning Nieu-Bethesda as a rural hub for eco-tourism, agri-tourism, and heritage tourism at the foot of Compassberg.

- Promote agricultural activities and value chain development, including agri-tourism projects and local farm-to-table initiatives, to boost the local economy and showcase the region's agricultural heritage.
- Limit building heights to a maximum of two storeys to maintain the small-town, rural character of Nieu-Bethesda and ensure compatibility with existing architectural styles.
- Establish a network of walking routes and trails that highlight historical sites and integrate the town's open spaces, creating a cohesive recreational and tourism experience.
- Create a well-connected open space network with green corridors, pedestrian pathways, and street furniture, enhancing public areas and promoting non-motorized transport.
- Encourage low-intensity, mixed-use activities along main access roads, supporting local businesses while maintaining the town's tranquil and rural atmosphere.
- Facilitate the growth of sustainable agricultural practices, including the development of local value chains and processing facilities, to enhance economic resilience and create employment opportunities.
- Limit nighttime light pollution to support stargazing and the rural character of the town.

These spatial planning guidelines aim to preserve Nieu-Bethesda's historical charm, support sustainable development, and position the town as a vibrant, tourism-focused node in the Karoo region.

4.7.3.2 OPEN SPACE SYSTEM

Active Open Spaces (OP1)

- Ensure flexibility in layout and amenities to accommodate various recreational pursuits and community events.
- Include playgrounds with swings, slides, and climbing structures tailored to different age groups.
- Establish consistent design standards for active open spaces to create a cohesive and visually appealing environment.
- Develop outdoor gyms to improve community health and diversify the use of the properties.
- Supported Zonings: **Open Space Zone 1**

Passive Open Spaces (OP2)

- Incorporate local vegetation such as various species of aloes, succulents and grasses into open space design, creating scenic routes and gardens.
- Employing native flora in landscaping and gardening endeavours fosters sustainability. Indigenous plants are naturally suited to local environments, demanding minimal water, fertilizer, and pesticides compared to exotic species. They offer cost-effective maintenance solutions, conserve water reservoirs, and bolster the indigenous ecosystem.
- Develop well-marked trails linking open spaces, offering opportunities for exploration.
- Identify picturesque spots with amenities like tables and benches for picnics.
- Provide strategically placed waste management facilities for cleanliness.
- Place restroom facilities strategically for user convenience and hygiene.
- Ensure proper lighting and maintenance along hiking trails and public facilities.
- Use lighting and landscaping for visibility and surveillance.
- Establish pathways linking passive spaces to active recreation zones.
- Supported Zonings: **Passive Open Space & Open Space Zone 2**

Conservation Management (OP3)

- Undevelopable open spaces are to be maintained and enhanced by introducing indigenous plants and trees, supporting the town's tourism appeal. Non-native plant species will be removed to preserve the natural landscape and improve the overall aesthetic, making the town more attractive to visitors.
- Conduct thorough ecological assessments to understand the biodiversity, habitats, and ecological processes present within conservation areas.
- Use this information to inform management strategies and prioritize conservation efforts.
- Designate specific areas for low-impact recreational activities such as hiking, birdwatching, and nature photography, while restricting access to sensitive areas.
- Enhance ecosystem resilience through measures such as habitat connectivity, water resource management, and invasive species control.

- Supported Zonings: **Protected Area & Open Space Zone 2**

Sport Facilities (OP4)

To upgrade existing sports facilities by considering the following:

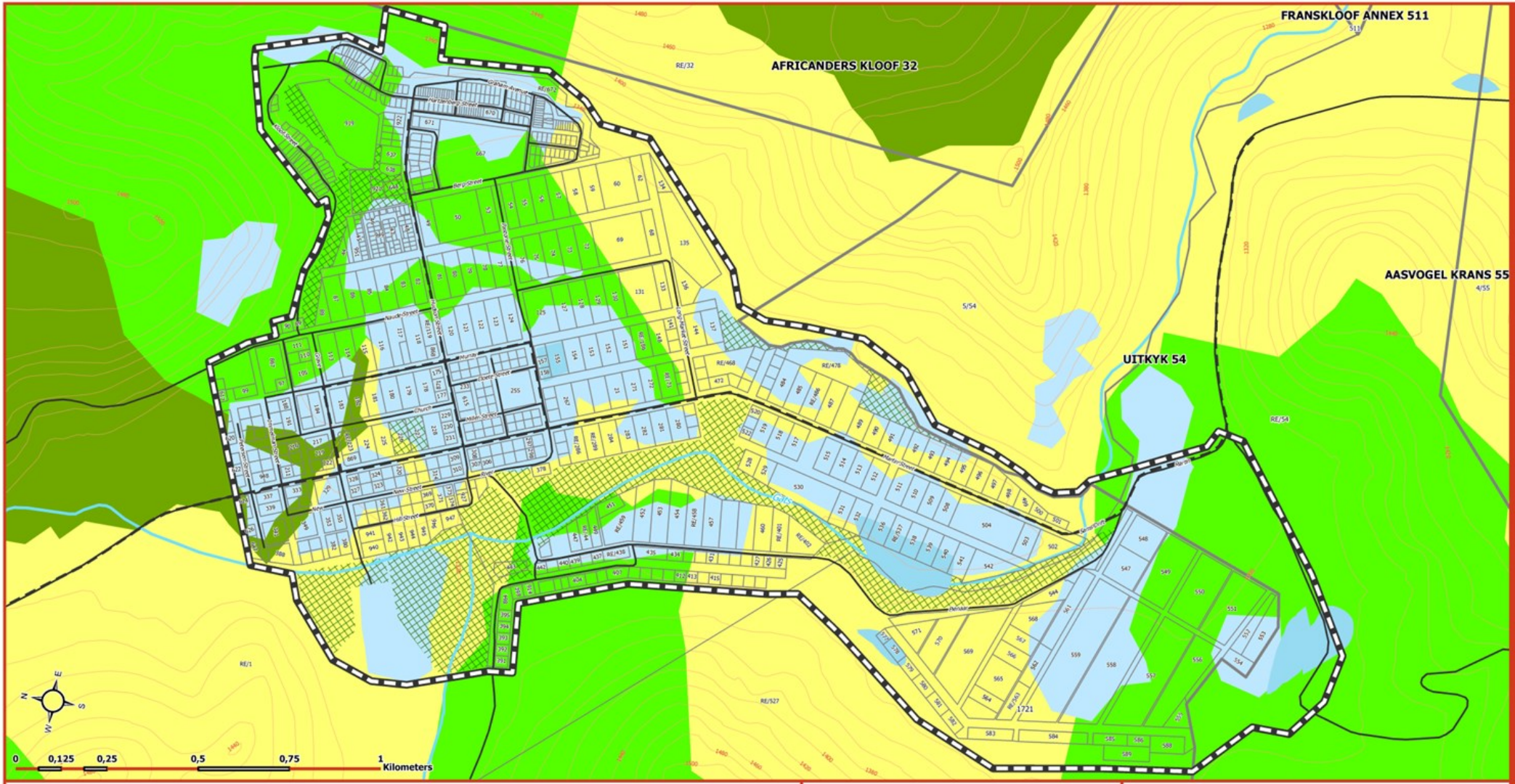
- Choose a centrally located site with ample space for various sports facilities and parking.
- Ensure zoning regulations permit a mix of indoor and outdoor sports activities.
- Design multipurpose facilities for padel tennis, field sports, and other sports clubs.
- Include amenities like changing rooms, seating, and equipment rental.
- Ensure sufficient parking spaces and accessible pathways.
- Enhance the facilities with greenery, seating areas, and amenities like drinking fountains.
- Create a welcoming environment for visitors to relax and socialize.
- Involve local sports clubs and community members in the planning process.
- Develop a diverse program of sports activities and events to engage residents of all ages.
- Supported Zonings: **Resort Zone & Open Space Zone 1**

General Open Space Guidelines

To enhance and sustainably manage open spaces in urban areas, the following general guidelines are proposed:

- Use drought-tolerant and waterwise plant species to reduce irrigation needs.
- Implement rainwater harvesting systems and greywater recycling for efficient water use in green spaces.
- Integrate open spaces with urban areas through a network of footpaths, trails, and paved walking routes.
- Design multi-use pathways to accommodate walking, running, and cycling, improving access and encouraging active use.
- Prioritize the use of native plants and trees to enhance biodiversity and reduce maintenance.
- Incorporate fruit-bearing trees to provide shade, contribute to food security, and enhance the aesthetic value of public spaces.
- Design open spaces to support a variety of uses, including areas for community events, markets, and recreational activities.
- Provide versatile, multi-purpose facilities that cater to different recreational needs.
- Encourage local community involvement in the care and maintenance of open spaces through volunteer programs. Promote local artists by including statues and pottery from the artists to beautify open spaces.
- Establish advisory committees with community stakeholders to guide the planning and improvement of open spaces.

Image 11: Typical Open Space approach to be followed for Nieu-Bethesda's Open Space System



Rivers
Contours
Main / Provincial Road
National Road
Roads
Railway Lines
Wetlands
Parent Farm
Farm Portions
Erf

Nieu-Bethesda Spatial Proposals
Open Space System
Urban Edge
Activity Corridor

Terrestrial - CBA
CBA 1
CBA 2
ESA 1
ESA 2
Other

Freshwater - CBA
CBA 1
CBA 2
ESA 1
ESA 2
Other

Map 79: Nieu-Bethesda (Open Space System)

Open Space System Nieu-Bethesda

Source: Dr Beyers Naude SDF 2024

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4.7.3.3 HUMAN SETTLEMENTS DEVELOPMENT

The housing development strategy for Nieu-Bethesda addresses the growing need for low-density residential options to preserve the town's distinct rural Karoo heritage. By 2030, an estimated 2.2 hectares of land will be needed, increasing to 5.3 hectares by 2040, to accommodate a projected demand of 51 additional housing units by 2030 and 124 units by 2040. The proposed housing zone focuses on providing additional low-density residential erven that will not distract from the town's character but still provide room for Nieu-Bethesda to grow.

Table 23: Nieu-Bethesda Housing Assessment

Housing Development Needs - 2030			
Ha Required - @ 10 U/Ha	5.20843		ha
Ha Required - @ 20 U/Ha	2.60421		ha
Ha Required - @ 40 U/Ha	1.30211		ha
Ha Required - @ 50 U/Ha	1.04169		ha
TOTAL - Distributed Densities	**2.23962**		ha
Housing Development Needs - 2040			
Ha Required - @ 10 U/Ha	16.4567		ha
Ha Required - @ 20 U/Ha	8.22837		ha
Ha Required - @ 40 U/Ha	4.11418		ha
Ha Required - @ 50 U/Ha	3.29135		ha
TOTAL - Distributed Densities	**7.0764**		ha
Total number of Additional Houses Required	2022	2030	2040
	0	**135**	**315**
Total Area Proposed (Spatial Proposals)	**Ha**	**Ruling Erf Size**	**Possible Housing Opportunities**
	82.5	443	905.575

The projected increase in housing demand highlights the need for proactive planning and development. To address this, a strategic land allocation of 82.5 hectares has been proposed, with an average erf size of 443 m², potentially supporting up to 905 housing opportunities. This reflects a pressing need to accelerate land development and provide adequate housing to meet the growing demand in Steytlerville.

Low-Density Residential Development (HD1)

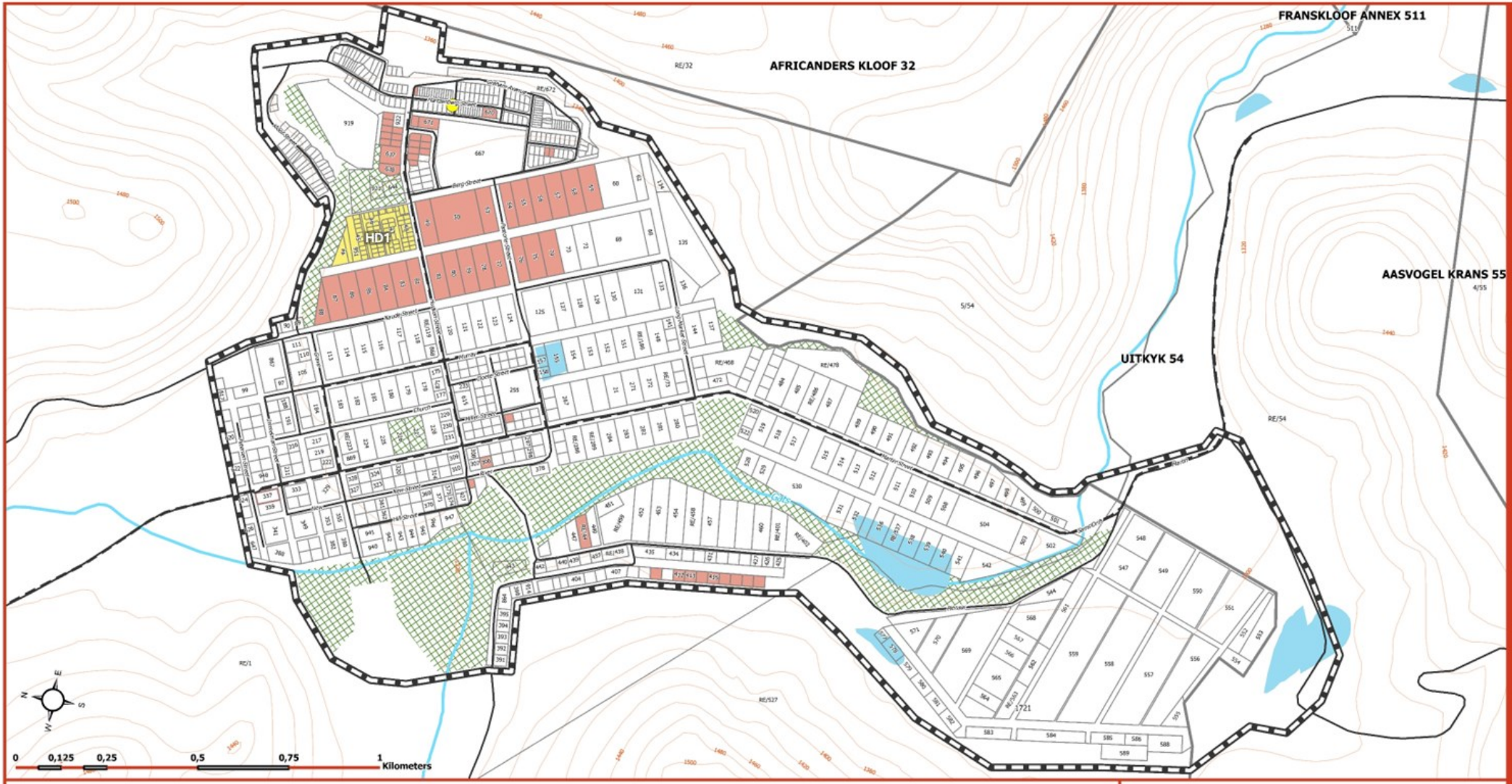
- HD1 is a proposed low-density residential development area covering 11.6 hectares, with a planned density of 20 dwelling units per hectare.
- This zone is intended to provide new housing opportunities while preserving the rural, low-key residential character that defines Nieu-Bethesda.
- The development will prioritize maintaining the town's distinctive Karoo-themed aesthetic, which is integral to its tourism and heritage appeal.
- Supported Zonings: **Residential Zone 1 & Resdiential Zone 4**

Design Considerations:

- Karoo Aesthetic: All new developments must adhere to design guidelines that reflect the traditional Karoo architecture, including features like stone walls, pitched roofs, and verandas. This will help maintain the historical look and feel of Nieu-Bethesda, supporting its unique tourism character.
- Heritage Preservation: The layout and design of the residential area will be carefully planned to integrate with the existing townscape, minimizing visual impact and respecting the heritage of the area.
- Sustainable Development: The zone will incorporate environmentally sensitive practices, such as rainwater harvesting and the use of native plants in landscaping, to align with the town's rural and sustainable development goals.

This low-density residential zone aims to provide a balanced approach to meeting local housing needs while safeguarding the historical and tourism value of Nieu-Bethesda, ensuring that new development enhances, rather than detracts from, the town's unique character.

Image 12: Karoo-style architecture should be incorporated as the design philosophy for housing developments, including affordable housing projects. This traditional aesthetic, characterized by simple lines, pitched roofs, verandas, and the use of local materials, should be embraced to maintain the regional heritage and enhance the visual appeal of the residential areas.



Map 82: Nieu-Bethesda (Housing Development Areas)

Human Settlements Development Nieu-Bethesda

Source: Dr Beyers Naude SDF 2024

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4.7.3.4 SPATIAL STRUCTURING

The spatial structuring elements pertain to the proposed mixed-use development corridors and zones for the town. While the terminology for these corridors and zones may be consistent, they differentiate between areas designated for future development and those that are already developed. This section also addresses the Central Business Area, Industrial Development Focus Areas, and Institutional Zones. Additionally, it highlights key nodes identified for each town and references areas designated for government and municipal uses.

4.7.3.4.1 DENSIFICATION AREAS

Not applicable to Nieu-Bethesda

4.7.3.4.2 MIXED-USE DEVELOPMENT CORRIDORS (MU)

The proposed mixed-use development corridors for Nieu-Bethesda aim to create vibrant, multifunctional zones that accommodate diverse activities while enhancing accessibility, supporting local businesses, and preserving the town's unique Karoo heritage and historical character. Any mixed-use developments should not detract from the unique tourism industry of Nieu-Bethesda.

Mixed-Use Buffer Zone with Light Industrial Focus (MU1)

MU1 serves as a transitional buffer zone between the lower-intensity neighbourhood uses of MU1 and the higher-intensity central business activities of MU2. This area accommodates a mix of uses, including light industrial and service-oriented businesses.

- Primary Uses supported include Retail, office spaces, light industrial workshops, and service-based enterprises.
- Supports small-scale industrial activities and service businesses, creating a balanced economic mix that complements the surrounding zones.
- Acts as a transition area, mitigating potential land use conflicts between the residential areas and the more intensive commercial activities in MU2.
- Supported Zonings: **Business Zone 2 & Business Zone 3**

Central Business Corridor (MU2)

MU2 is the designated central business area for Nieu-Bethesda, focusing on medium to high-intensity commercial activities. The zone supports a wide range of retail, business, and office uses but excludes heavy industrial activities to maintain a vibrant and pedestrian-friendly environment.

- Primary Uses supported include Retail shops, offices, professional services, restaurants, and accommodation facilities.
- Development in this corridor must align with Karoo-style architecture, incorporating design elements that reflect the heritage and historical significance of the town. Facades, street furniture, and landscaping should emphasise the Karoo theme.
- The corridor includes several historic buildings, which should be preserved and integrated into new development projects. Adaptive reuse of these structures is encouraged to maintain the town's cultural and historical identity.
- Supported Zonings: **Business Zone 1 & Business Zone 4**

4.7.3.4.3 INSTITUTIONAL DEVELOPMENT ZONES

Educational Facilities (IZ1)

The following guidelines and uses are proposed:

- Provision of education and related uses.
- Includes schools, crèches, tertiary facilities, and support activities.
- Supported Zonings: **Institution 1**

Community Services (IZ2)

The following guidelines and uses are proposed:

- Ensuring wheelchair-accessible parking spaces are available around the facility.
- Provision for worship facilities and related uses.
- Includes places of assembly
- Provision of a wide range of community facilities, including institutions.
- Supported Zonings**: Business Zone 1 & Institution 2**

Cemetery Development (IZ3)

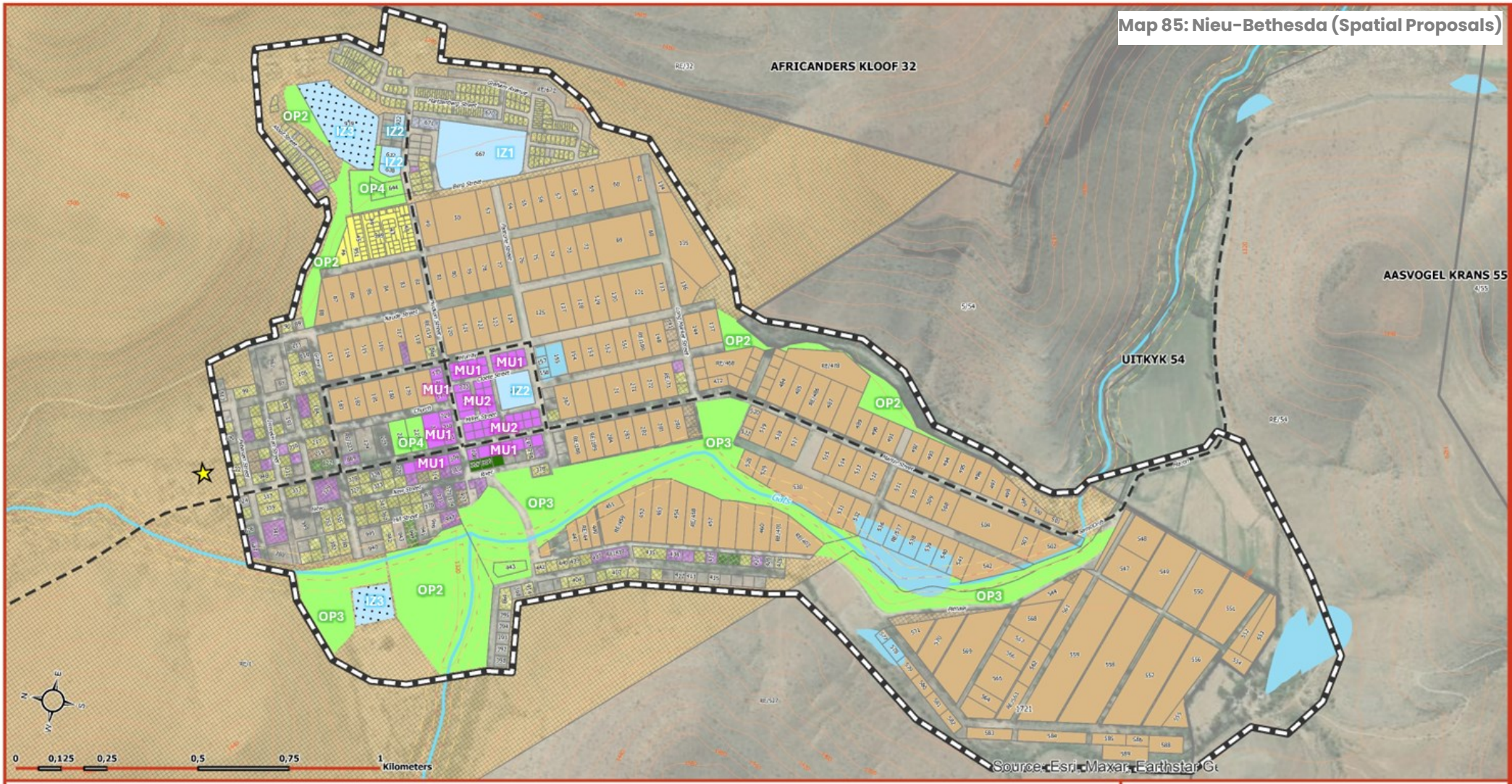
Areas designated for cemeteries and future cemetery expansion to accommodate future needs as they arise.

- Supported Zonings: **Authority Zone**

4.7.3.4.4 HERITAGE AND TOURISM ZONE

Key considerations within the Heritage and Tourism Zone include:

- Use plastic or aluminium windows/doors on street facades while maintaining authenticity with the town's heritage design.
- Ensure materials used match the heritage style of the area.
- Obtain approval from local authorities, and in provincial heritage areas, consent from the Eastern Cape Provincial Heritage Resources Authority is required.
- Submit sketch plans and site photographs before preparing final plans to incorporate recommendations.
- Depart from zoning regulations if proposed developments align with heritage area aims.
- Maintain street-facing building edges, limited to two stories high from any adjacent street boundary.
- For original buildings, additions can be made at the rear of the existing courtyard.
- Refer to the South African Heritage Resources Agency for guidance, established under the National Heritage Resources Act.
- Supported Zonings: **Resort Zone, Protected Area, Passive Open Space, Open Space Zone 2**



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Rivers
Contours
Main / Provincial Road
National Road
Railway Lines
Wetlands
Parent Farm
Farm Portions
Erf

Protected Agricultural Areas
Informal Settlement
Existing Land Use

River Buffer Distance
20 m
50 m

Nieu-Bethesda Spatial Proposals
Cemetery
Heritage and Tourism Area
Residential Development Area
Institutional Area
Mixed Use Corridor
Open Space System
Small holdings
Urban Edge
Activity Corridor - Road Maintenance

Existing Spatial Planning Land Use
Agriculture
Heritage and Tourism Area
Industrial
Informal Settlement
Institutional Area
Mixed Use
Open Space System
Residential Development Area
Smallholdings
Transportation

Local Spatial Proposals Nieu-Bethesda

Source: Dr Beyers Naude SDF 2024

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4.7.3.5 INFRASTRUCTURE DEVELOPMENT

4.7.3.5.1 TRANSPORTATION DEVELOPMENT

Transportation in Nieu-Bethesda requires significant improvements to enhance safety, accessibility, and regional connectivity. Access roads from the N9 require surfacing to support better access to Nieu-Bethesda. Additionally, there is a need to bolster public transportation networks, especially along Naude and Martin Street. Non-motorized transport infrastructure must be improved to accommodate cyclists and pedestrians, particularly along proposed mixed-use corridors. To better serve residents, taxi and bus stops should be strategically placed in key locations, including Hudson Street and Martin Street. These initiatives aim to make transportation more efficient, safer, and conducive to the town's growth and development.

4.7.3.5.2 INFRASTRUCTURE NEEDS ASSESSMENT

To ensure the continued growth and well-being of the town, several critical infrastructure development projects are identified:

- Implement speed bumps strategically placed within residential areas and near schools to improve road safety and reduce speeding incidents.
- Deploy Wi-Fi towers in public areas and key locations to ensure residents and tourists have access to dependable internet services.
- Build sidewalks and cycle lanes along major roads and pedestrian routes to encourage walking and cycling as alternative modes of transportation.
- Ensure the Jubileum Bridge receives regular maintenance along with the supporting pathways leading to the bridge.
- Upgrading of Naude Street, Martin Street and Hudson Street to improve and provide direct access to various parts of the town.
- Upgrading of the Nieu-Bethesda Water Treatment Works and Wastewater Treatment Works to improve the Blue Drop and Green Drop Score respectively as well as the availability of continuous water supply to the town.
- Development of a primary health centre by 2030 to service the local community.

Table 24: Bulk Services Implications for Proposals

SERVICES IMPLICATIONS	
Water Implications	
The annual average daily demand (AADD) for the proposed population	60 kl /day
The annual average daily water demand (AADD) for the population (Liters per second)	0.75 l /s
The Total Annual Average Daily Demand (TAADD) for the proposed population	87.03 kl
The Total Annual Average Daily Demand per Second (TAADD) for the proposed population	1 kl
The total Peak Hour demand (TPHD)	200 kl /day
The total Peak Hour demand (TPHD) - Liters per second	2.61 l /s
The total Elevated Storage/Towers supply rate from the storage reservoir should be > -	2.87 kl
The total reservoir storage for the proposed development should be no less than 48 hours of TAADD	301.76 kl
The total elevated storage volume (6 Hours TAADD and assuming no backup power available	37.72 kl
Sewer Implications	
Sewerage Proposed Average Daily Flow	53 kl /day
Sewer: Peak Dry Weather Flow	137 kl /day
Sewer: Peak Wet Weather Flow	158 kl /day
The total sewer effluent peak	1.85 l/l
Electrical Demand	
Total Maximum demand (kVA)	843
Total Maximum Demand (MVA)	0.8427498

The infrastructure assessment for Nieu-Bethesda indicates substantial needs in water, sewer, and electrical services. The annual average daily demand (AADD) for water is estimated at 60 kl/day, with a peak hour demand of 200 kl/day, requiring a storage capacity of at least 301.76 kl. Sewer infrastructure must handle peak wet weather flows of up to 158 kl/day. The projected maximum electrical demand is 843 kVA, highlighting the need for grid upgrades to meet future demand. These requirements emphasize the importance of

comprehensive infrastructure planning and investment to support Nieu-Bethesda's anticipated growth.

4.7.4 CONCLUSION

The housing development areas are designed to accommodate the projected growth, which includes at least 220 households. Additionally, there are provisions for areas dedicated to meeting future needs for socio-economic facilities and services within the town.

In conclusion, the spatial and land use proposals for Nieu-Bethesda should focus on several key areas to enhance the town's functionality and appeal. Ensuring the unique character of Nieu-Bethesda is protected by limiting developments which would be in contrast with the existing sense of place. The tourism industry should be supported with proper infrastructure and service delivery which would also enable the town to grow.

Finally, upgraded access roads to Nieu-Bethesda are proposed to aid the tourism industry and general access to the town.

4.8 KLIPPLAAT

4.8.1 HISTORY

Klipplaat, a small town established in 1883, once thrived as a key railway junction between Port Elizabeth and Graaff-Reinet. Its name, meaning "rock slab" in Afrikaans, likely reflects the rocky terrain surrounding the area. This once-bustling railway town flourished during South Africa's golden age of rail travel, providing essential logistical support for the region's agricultural sector, particularly the wool and mohair industries. Klipplaat's importance was underscored by the arrival of the first train in 1879, linking the Cape Midlands to major markets and boosting the local farming economy.

During the 2nd Anglo-Boer War, Klipplaat was a centre of British military logistics, with trains carrying supplies and soldiers while Boer commandos attempted to disrupt these operations. The Royal Family's 1947 visit also brought a moment of fame to the town, as King George VI and Queen Elizabeth stopped there briefly during their grand railroad tour of South Africa.

However, by 1979, with the introduction of diesel locomotives and a shift toward road transport, Klipplaat began a steep decline. The railway's phased-out operations led to population decreases, an economic downturn, and the eventual closure of key railway lines, including the Graaff-Reinet route by 2001. Today, Klipplaat bears a nostalgic charm, with remnants like its historic railway station and old steam engine serving as reminders of its vibrant past, while century-old churches add a quaint, historical touch to the town.

3rd Order Node

4.8.2 SOCIO-ECONOMIC CONSIDERATIONS

Klipplaat, a designated Comprehensive Rural Development Programme (CRDP) site, faces several socio-economic challenges but also presents opportunities for growth and community development. The town lacks essential services such as general medical practitioners and pre-primary educational facilities, making it necessary to enhance access to healthcare and early childhood development services. The local streets are in poor condition, mostly unsurfaced and without stormwater drainage, which highlights the urgent need for road infrastructure improvements and proper maintenance. Additionally, water is sourced from the Klipfontein Dam, with many RDP houses equipped with rainwater tanks to supplement the municipal water supply, indicating a need for ongoing support in water security and infrastructure upgrades.

Klipplaat's tourism potential is currently underdeveloped, despite the presence of historical sites like the Fallen Heroes Monument. Efforts should focus on installing tourism signage and improving site accessibility to attract visitors. There is also a need for economic diversification, including the establishment of an SMME incubation centre to support small businesses and foster local entrepreneurship. Community facilities, such as victim support centres and expanded Wi-Fi services, are critical to improving the quality of life for residents. Addressing these socio-economic factors will require a multi-faceted approach, leveraging the town's historical significance while investing in infrastructure, services, and local economic initiatives to promote sustainable development.

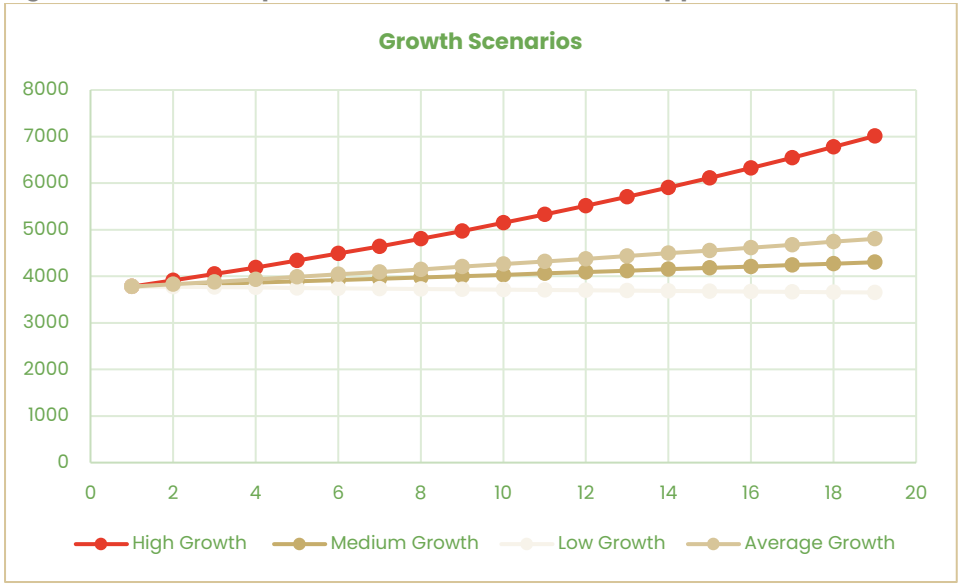
4.8.2.1 POPULATION GROWTH PROJECTION FOR KLIPPLAAT (2011 - 2040)

The population projections for Klipplaat show potential growth scenarios based on historical trends and future conditions. By 2025, the population is expected to range from 3,758 under the Low Growth scenario to 4,189 under the High Growth

scenario. By 2030, the projections increase, ranging from 3,723 (Low Growth) to 4,974 (High Growth). In 2035, the population could vary between 3,688 (Low Growth) and 5,906 (High Growth), indicating a broader gap influenced by economic activities and migration trends. By 2040, the population is projected to range from 3,653 (Low Growth) to 7,012 (High Growth), while the Medium Growth scenario estimates a population of 4,302.

These projections highlight the need for flexible and adaptive planning to accommodate different growth rates and ensure sustainable development in Klipplaat. With varying potential outcomes, strategic investments in infrastructure, housing, and social services will be crucial to support the town's growth while maintaining its rural character and meeting community needs.

Figure 16: Possible Population Growth Scenarios for Klipplaat



4.8.2.2 SOCIAL FACILITY NEEDS

Table 25: Social Facility Needs Assessment

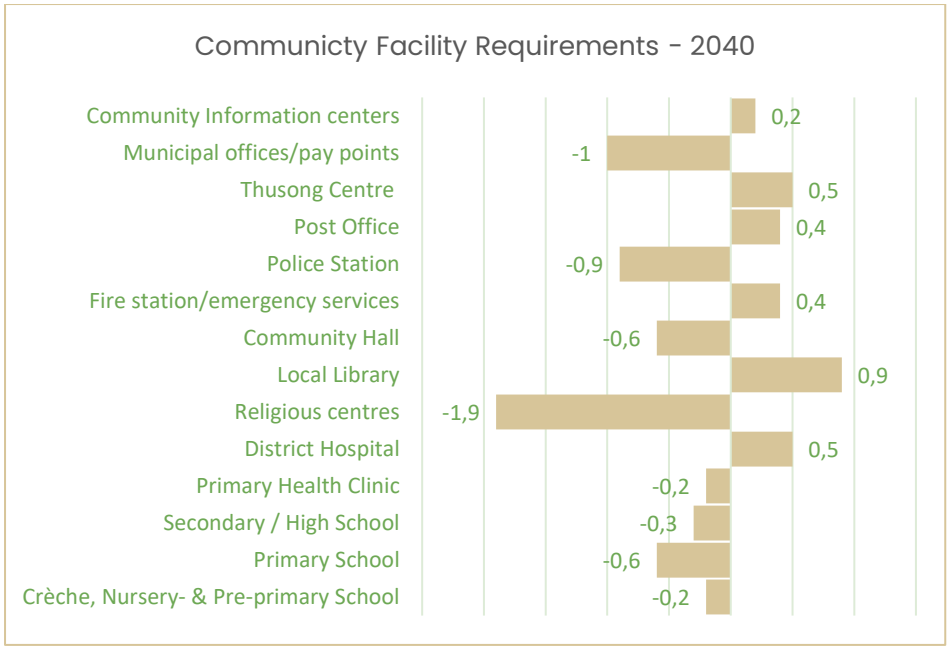
SOCIAL FACILITIES NEEDS ASSESSMENT					
Facility	**Existing**	**Need 2024**	**Need 2030**	**Need 2040**	**Ha Required**
Education					
Crèche, Nursery- & Pre-primary School	1	0	0	0	0.00
Primary School	2	-1	-1	-1	-1.44
Secondary / High School	1	0	0	0	-1.38
Health					
Primary Health Clinic	1	0	0	0	-0.02
District Hospital	0	0	1	1	0.5
Community Services					
Religious centres	4	-2	-2	-2	-0.285
Local Library	0	1	1	1	0.0135
Community Hall	1	-1	-1	-1	-0.3
Fire station/emergency services	0	0	0	0	0.48
Police Station	1	-1	-1	-1	-0.225
Post Office	0	0	0	0	0.02
Thusong Centre	0	0	1	1	0.5
Municipal offices/pay points	1	-1	-1	-1	-0.3
Community Information Centres	0	1	1	1	0.005

The social facilities need assessment for Klipplaat indicates a limited but specific demand for educational, health, and community services by 2040, reflecting the town's projected population growth and socio-economic conditions. The overall need for expanded infrastructure is relatively modest, given the small size of the town, but targeted improvements are necessary to enhance service delivery and support community well-being.

In terms of education, the current facilities are deemed sufficient, with no additional crèches, pre-primary, or secondary schools needed by 2040. However, there is an indication that the existing two primary schools may be

underutilized, suggesting a potential reduction in capacity needs, which could free up 1.44 hectares of land for alternative uses. For health services, the existing primary health clinic is sufficient, but the town will require the addition of one district hospital, necessitating 0.5 hectares of land to ensure adequate healthcare access for the community.

The demand for community services shows a mixed outlook. While there is no need for additional religious centres, community halls, or police stations, the town would benefit from the introduction of one local library and a Thusong Centre, requiring a combined land allocation of 0.51 hectares. The need for improved emergency services is highlighted by the proposed addition of a fire station, which will require 0.48 hectares of land. Additionally, the expansion of municipal offices and community information centres will help provide integrated service points for residents, utilizing 0.31 hectares.



4.8.3 SPATIAL PLANNING CONSIDERATIONS

4.8.3.1 KEY SPATIAL PLANNING GUIDELINES:

Key considerations include:

- Strengthen the preservation of Klipplaat's historical character, focusing on its unique railway heritage. The town's historic railway station, old steam engines, and century-old churches serve as significant cultural assets. Compliance with the National Heritage Resources Act and guidelines from the South African Heritage Resources Agency (SAHRA) will help protect these landmarks and support heritage tourism.
- Promote Tourism and Heritage Development: Support the growth of tourism-related facilities that capitalize on Klipplaat's nostalgic railway charm and historical sites. Enhancing cultural attractions, accommodations, and visitor services can position the town as a niche destination for heritage tourism, while also tapping into the eco-tourism potential of the surrounding rural landscape.
- Prioritize improving road linkages between Klipplaat and nearby regional centres, particularly the critical connection to Jansenville. Enhanced connectivity will help improve access to socio-economic services, employment, and regional markets, supporting the town's long-term development prospects.
- As a designated Comprehensive Rural Development Programme (CRDP) site, Klipplaat requires targeted government interventions to unlock development potential. Focus areas should include infrastructure improvements, enhanced service delivery, and support for small and medium enterprises (SMEs) to stimulate local economic activity.

4.8.3.2 OPEN SPACE SYSTEM

Active Open Spaces (OP1)

- Ensure flexibility in layout and amenities to accommodate various recreational pursuits and community events.
- Include playgrounds with swings, slides, and climbing structures tailored to different age groups.
- Establish consistent design standards for active open spaces to create a cohesive and visually appealing environment.

- Develop outdoor gyms to improve community health and diversify the use of the properties.
- Supported Zonings: **Open Space Zone 1**

Passive Open Spaces (OP2)

- Incorporate local vegetation such as various species of aloes, succulents and grasses into open space design, creating scenic routes and gardens.
- Employing native flora in landscaping and gardening endeavours fosters sustainability. Indigenous plants are naturally suited to local environments, demanding minimal water, fertilizer, and pesticides compared to exotic species. They offer cost-effective maintenance solutions, conserve water reservoirs, and bolster the indigenous ecosystem.
- Develop well-marked trails linking open spaces, offering opportunities for exploration.
- Identify picturesque spots with amenities like tables and benches for picnics.
- Provide strategically placed waste management facilities for cleanliness.
- Place restroom facilities strategically for user convenience and hygiene.
- Ensure proper lighting and maintenance along hiking trails and public facilities.
- Use lighting and landscaping for visibility and surveillance.
- Establish pathways linking passive spaces to active recreation zones.
- Supported Zonings: **Passive Open Space & Open Space Zone 2**

Conservation Management (OP3)

- Undevelopable open spaces are to be maintained and enhanced by introducing indigenous plants and trees, supporting the town's tourism appeal. Non-native plant species will be removed to preserve the natural landscape and improve the overall aesthetic, making the town more attractive to visitors.
- Conduct thorough ecological assessments to understand the biodiversity, habitats, and ecological processes present within conservation areas.
- Use this information to inform management strategies and prioritize conservation efforts.
- Designate specific areas for low-impact recreational activities such as hiking, birdwatching, and nature photography, while restricting access to sensitive areas.
- Enhance ecosystem resilience through measures such as habitat connectivity, water resource management, and invasive species control.
- Supported Zonings: **Protected Area & Open Space Zone 2**

Sport Facilities (OP4)

To upgrade existing sports facilities by considering the following:

- Choose a centrally located site with ample space for various sports facilities and parking.
- Ensure zoning regulations permit a mix of indoor and outdoor sports activities.
- Design multipurpose facilities for padel tennis, field sports, and other sports clubs.
- Include amenities like changing rooms, seating, and equipment rental.
- Ensure sufficient parking spaces and accessible pathways.
- Enhance the facilities with greenery, seating areas, and amenities like drinking fountains.
- Create a welcoming environment for visitors to relax and socialize.
- Involve local sports clubs and community members in the planning process.
- Develop a diverse program of sports activities and events to engage residents of all ages.
- Supported Zonings: **Resort Zone & Open Space Zone 1**

Recreation Facilities (OP5)

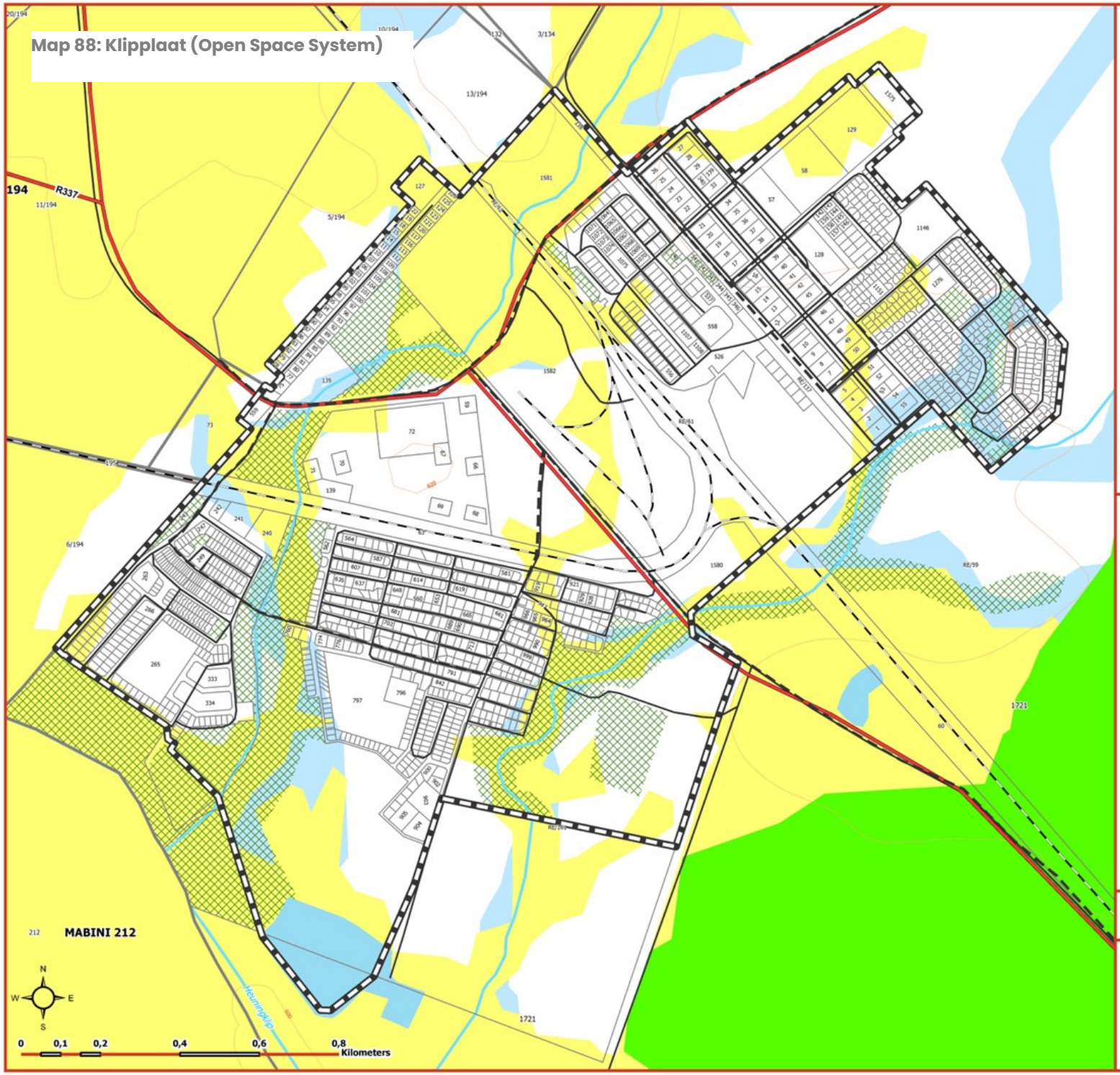
OP5 is designated as a protected open space, prioritizing the conservation of Klipplaat's historical assets and natural features. The area includes significant heritage structures, such as the Hotel Charles, a landmark with cultural and historical value. The preservation of such heritage buildings is essential to maintaining the architectural identity of Klipplaat, showcasing its colonial-era charm and contributing to the town's tourism appeal.

The OP5 zone is intended to support tourism-related activities that are compatible with the conservation objectives of the area. Potential developments may include:

- Guided tours highlighting the historical significance of Hotel Charles and other nearby heritage sites, providing educational experiences for visitors.

- Development of green spaces, walking trails, and picnic areas that allow for outdoor activities while respecting the natural environment.
- Promotion of eco-friendly tourism activities, such as birdwatching and nature walks, leveraging the area's unique biodiversity.
- Supported Zonings: **Resort Zone, Passive Open Space & Open Space Zone 1**

Map 88: Klipplaat (Open Space System)



Open Space System Klipplaat

- Rivers
- Wetlands
- Parent Farm
- Farm Portions
- Erf
- Contours
- Main / Provincial Road
- National Road
- Roads
- Railway Lines

Terrestrial - CBA

- PA
- CBA 1
- CBA 2
- ESA 1
- ESA 2
- Other

Freshwater - CBA

- CBA 1
- CBA 2
- ESA 1
- ESA 2
- Other

Klipplaat Spatial Proposals

- Open Space System
- Urban Edge
- Activity Corridor

Source: Dr Beyers Naude SDF 2024

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4.8.3.3 HUMAN SETTLEMENTS DEVELOPMENT

The housing development strategy for Klipplaat aims to address the town's modest but growing demand for residential options while respecting its rural, historical character. By 2030, an estimated 2.2 hectares of land will be required, increasing to 5.2 hectares by 2040. This allocation is expected to meet the demand for 52 additional housing units by 2030, rising to 122 units by 2040. The proposed housing zones include a mix of low-density, medium-density, and greenfield developments, focusing on efficient land use, formalization of existing informal settlements, and strategic infill projects to enhance connectivity and align with existing infrastructure.

Key development zones include HD1, a medium-density infill area designed to consolidate smaller erf sizes, and HD2, a medium-density greenfield project aimed at meeting future housing needs. HD3, a smaller infill zone, integrates existing dwellings while accommodating additional units, prioritizing sustainable design and service provision. HD4 focuses on moderate-scale, medium-density residential projects to support urban expansion, while HD5 is designated for low-density development, balancing the need for new housing with the preservation of Klipplaat's rural character. The comprehensive approach aims to accommodate future growth, enhance walkability, and provide diverse housing options, ensuring a sustainable and cohesive development framework for the town.

Table 26: Klipplaat Housing Assessment

Housing Development Needs - 2030		
Ha Required - @ 10 U/Ha	5.20843	ha
Ha Required - @ 20 U/Ha	2.60421	ha
Ha Required - @ 40 U/Ha	1.30211	ha
Ha Required - @ 50 U/Ha	1.04169	ha
TOTAL - Distributed Densities	**2.23962**	ha
Housing Development Needs - 2040		
Ha Required - @ 10 U/Ha	12.1551	ha
Ha Required - @ 20 U/Ha	6.07756	ha
Ha Required - @ 40 U/Ha	3.03878	ha
Ha Required - @ 50 U/Ha	2.43102	ha
TOTAL - Distributed Densities	**5.2267**	ha

Total number of Additional Houses Required	2022	2030	2040
	0	**52**	**122**
Total Area Proposed (Spatial Proposals)	**Ha**	**Ruling Erf Size**	**Possible Housing Opportunities**
	21.7	314	381.15

The housing development forecast for Klipplaat indicates a steady increase in land requirements to accommodate projected population growth. The proposals for housing development cover approximately 22 ha and would provide up to 381 houses on erven 314 m² on average. The proposed development strategy focuses on meeting this demand through a balanced mix of infill projects, greenfield developments, and the formalization of existing informal settlements. The plan emphasizes sustainable design principles, efficient land use, and the preservation of Klipplaat's historical and rural character, ensuring a variety of residential options that cater to the community's needs while promoting a cohesive and resilient urban environment.

Housing Redevelopment Area

- Prioritise the redevelopment of existing properties that have been vandalised to serve the community needs, above new residential development to ensure effective use of available land.
- Identify beneficiaries linked to abandoned and vandalised housing to determine the possibility of redistribution.

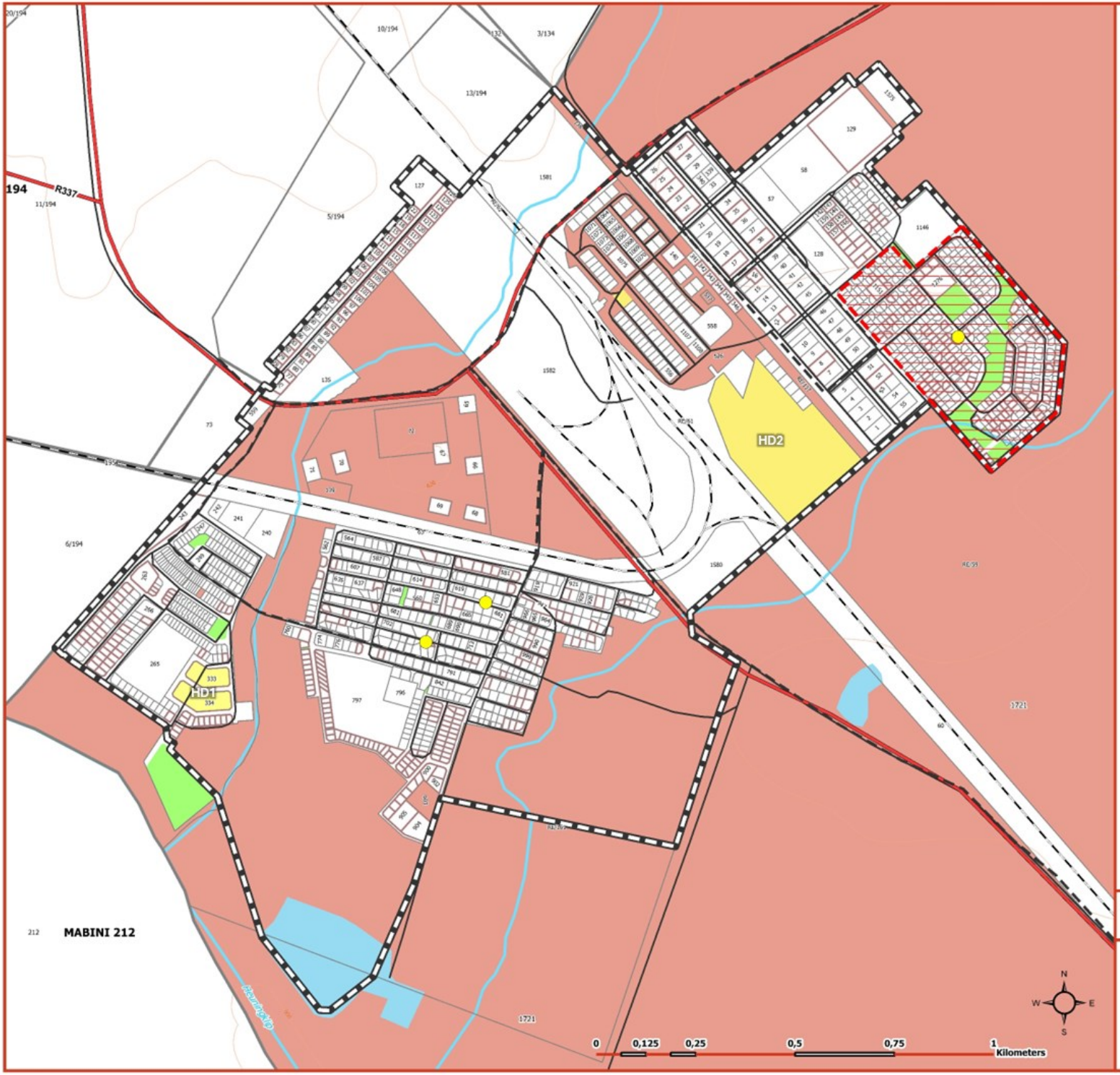
Medium-density infill Residential Development (HD1)

- HD3 is a smaller infill development of 1.1 hectares, which includes consideration for the 4 existing dwellings on the property. The development will proceed at a density of 35 dwelling units per hectare while preserving the existing structures.
- HD3 can accommodate 35 additional residential units while integrating the existing homes into the new development plan.
- Provide basic services and a holistic road design approach.
- Support IRDP housing grant development.

- Prioritize pedestrian-friendly design principles, with interconnected streets, sidewalks, and green spaces to promote walkability and community interaction.
- Careful consideration should be taken when determining the extent of housing development to take into account the nearby streams' flood lines.
- Supported Zonings**: Residential Zone 1**

Medium-Density Greenfield Residential Development (HD2)

- HD2 is a medium-density greenfield development area of 8.2 hectares, designed to accommodate new housing projects at a density of 35 dwelling units per hectare. This zone aims to meet growing housing demand with a planned, larger-scale residential layout.
- HD2 can support the creation of 287 new residential units, helping to expand the town's housing supply and cater to future population growth.
- Provide basic services and a holistic road design approach.
- Support IRDP housing grant development.
- Prioritize pedestrian-friendly design principles, with interconnected streets, sidewalks, and green spaces to promote walkability and community interaction.
- Supported Zonings**: Residential Zone 1 & Residential Zone 4**



Human Settlements Development Klipplaat

- Rivers
- Contours
- Wetlands
- Main / Provincial Road
- Parent Farm
- National Road
- Farm Portions
- Roads
- Erf
- Railway Lines
- Human Settlement Development
- Housing Redevelopment Area

Spatial Proposals

- Housing Development Area
- Urban Edge
- Activity Corridor

General Category

- Municipal
- Vacant
- Public Place

Map 90: Klipplaat (Housing Development Areas)

Source: Dr Beyers Naude SDF 2024

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4.8.3.4 SPATIAL STRUCTURING

The spatial structuring elements pertain to the proposed mixed-use development corridors and zones for the town. While the terminology for these corridors and zones may be consistent, they differentiate between areas designated for future development and those that are already developed. This section also addresses the Central Business District, Industrial Development Focus Areas, and Institutional Zones. Additionally, it highlights key nodes identified for each town and references areas designated for government and municipal uses.

4.8.3.4.1 DENSIFICATION AREAS

The following densification areas are proposed:

- **Charles Street Corridor**: Densification is proposed along both the north and south of Charles Street, supporting a maximum density of 20 dwellings per hectare. This area will focus on increasing residential density while allowing for low-intensity mixed-use activities along the main thoroughfare, complementing the existing residential and commercial uses. Supported zonings include **Business Zone 2 and Residential Zone 4.**
- **Southwest of Van Wyk Street:** This area is identified for medium-density residential infill development at 20 dwellings per hectare. The focus will be on utilizing available land efficiently to accommodate additional housing needs while integrating with the existing neighbourhood layout. Supported zonings include **Residential Zone 1 and Residential Zone 4.**
- **East of Charles Street**: Densification efforts will extend eastward from Charles Street, supporting residential development at a maximum density of 20 dwellings per hectare. The area's existing social facilities are considered adequate to accommodate the increased population, reducing the need for immediate infrastructure expansion. Supported zonings include **Residential Zone 1 and Residential Zone 4.**

4.8.3.4.2 MIXED-USE DEVELOPMENT CORRIDORS (MU)

The proposed mixed-use development corridors for Klipplaat aim to create vibrant, multifunctional zones that accommodate diverse activities while enhancing accessibility, supporting local businesses, and preserving the town's unique Karoo heritage and historical character.

Low-Intensity Neighbourhood Centre - (**MU1**)

MU1 is designated as a low-intensity mixed-use zone, serving as a neighbourhood centre for residents who are located farther from the main retail areas. This zone focuses on small-scale commercial and institutional uses, providing essential services close to the community.

- Primary Uses supported include Small shops, retail outlets, and institutional services such as clinics or community centres.
- Informal Trading may be permitted in designated areas, supporting local vendors and small businesses.
- The corridor aims to enhance local access to basic goods and services, reducing the need for residents to travel to the central business area.
- Supported Zonings: **Business Zone 2**

Mixed-Use Buffer Zone with Light Industrial Focus (**MU2**)

MU2 serves as a transitional buffer zone between the lower-intensity neighbourhood uses of MU1 and the higher-intensity central business activities of MU3. This area accommodates a mix of uses, including light industrial and service-oriented businesses.

- Primary Uses supported include Retail, office spaces, light industrial workshops, and service-based enterprises.
- Supports small-scale industrial activities and service businesses, creating a balanced economic mix that complements the surrounding zones.
- Acts as a transition area, mitigating potential land use conflicts between the residential areas and the more intensive commercial activities in MU3.
- Supported Zonings: **Business Zone 2 & Business Zone 4**

Central Business Corridor (**MU3**)

MU3 is the designated central business area for Klipplaat, focusing on medium to high-intensity commercial activities. The zone supports a wide range of retail, business, and office uses but excludes heavy industrial activities to maintain a vibrant and pedestrian-friendly environment.

- Primary Uses supported include Retail shops, offices, professional services, restaurants, and accommodation facilities.

- Development in this corridor must align with Karoo-style architecture, incorporating design elements that reflect the heritage and historical significance of the town. Facades, street furniture, and landscaping should emphasize the Karoo theme.
- The corridor includes several historic buildings, which should be preserved and integrated into new development projects. Adaptive reuse of these structures is encouraged to maintain the town's cultural and historical identity.
- Supported Zonings: **Business Zone 1 & Business Zone 4**

4.8.3.4.3 INSTITUTIONAL DEVELOPMENT ZONES

Educational Facilities (IZ1)

The following guidelines and uses are proposed:

- Provision of education and related uses.
- Includes schools, crèches, tertiary facilities, and support activities.
- Supported Zonings: **Institution 1**

Community Services (IZ2)

The following guidelines and uses are proposed:

- Ensuring wheelchair-accessible parking spaces are available around the facility.
- Provision for worship facilities and related uses.
- Includes places of assembly
- Provision of a wide range of community facilities, including institutions.
- Supported Zonings: **Business Zone 1 & Institution 2**

Municipal and Government Use (IZ3)

Guidelines and supported uses encompass:

- Government and municipal uses, including magistrates' courts, municipal offices, police stations, and others.
- Ensuring the safety and accessibility of facilities for all individuals.
- Installing clear signage to facilitate access to services.
- Allocating adequate parking areas, including wheelchair-friendly spaces.
- Supported Zonings: **Institution 1, Authority Zone, Business Zone 1 & Business Zone 2**

Cemetery Development (IZ4)

Areas designated for cemeteries and future cemetery expansion to accommodate future needs as they arise.

- Supported Zonings: **Authority Zone**

4.8.3.4.4 INDUSTRIAL DEVELOPMENT ZONE

The industrial zones in Klipplaat are planned to support the town's economic growth, focusing on agri-industrial activities and small-scale light industries. These zones aim to leverage existing infrastructure, including the historical railway network, and incorporate sustainable development practices to create resilient and environmentally friendly industrial areas.

Agri-Industrial Development Zone – (IDZ1)

- IDZ1 is designated as a general industrial area, utilizing the old railway infrastructure to support agri-industrial development. The zone is strategically positioned to accommodate facilities like the Farmer Production Support Unit (FPSU) as part of the Agri-Park initiative, focusing on agricultural processing and value-added activities.
- IDZ1 aims to create a hub for agri-industrial activities, supporting local farmers and contributing to the regional agricultural economy.
- Supported Zonings: **Agricultural Zone 2 & Industrial Zone 1**

Light and Services Industrial Zone (IDZ2)

- IDZ2 is a small light and services industrial zone, intended to accommodate low-intensity industrial development in Klipplaat. This area focuses on supporting small-scale manufacturing, repair workshops, and service-based businesses, catering to local demand and providing opportunities for small enterprises.
- Supported Zonings: **Business Zone 4 & Industrial Zone 1**

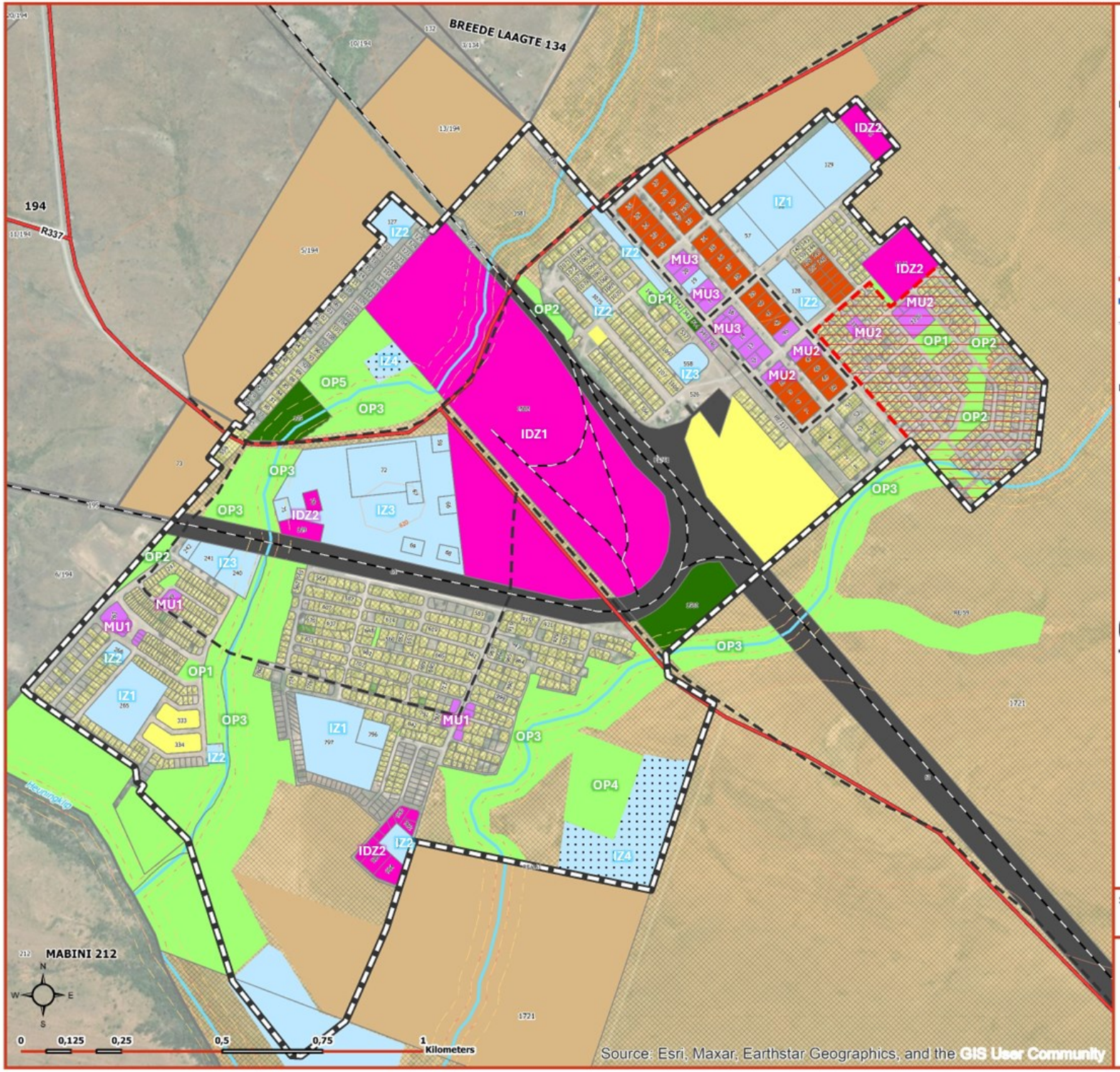
4.8.3.4.5 CENTRAL BUSINESS DISTRICT (CBD)

Not applicable

4.8.3.4.6 HERITAGE AND TOURISM ZONE

Key considerations within the Heritage and Tourism Zone include:

- Use plastic or aluminium windows/doors on street facades while maintaining authenticity with the town's heritage design.
- Ensure materials used match the heritage style of the area.
- Obtain approval from local authorities, and in provincial heritage areas, consent from the Eastern Cape Provincial Heritage Resources Authority is required.
- Submit sketch plans and site photographs before preparing final plans to incorporate recommendations.
- Depart from zoning regulations if proposed developments align with heritage area aims.
- Maintain street-facing building edges, limited to two stories high from any adjacent street boundary.
- For original buildings, additions can be made at the rear of the existing courtyard.
- Refer to the South African Heritage Resources Agency for guidance, established under the National Heritage Resources Act.
- Supported Zonings: **Resort Zone, Protected Area, Passive Open Space, Open Space Zone 2**



Local Spatial Proposals Klipplaat

- Housing Redevelopment Area

River Buffer Distance

- 20 m
- 50 m
- Rivers
- Parent Farm
- Farm Portions
- Erf
- Contours
- Main / Provincial Road
- National Road
- Railway Lines
- Existing Land Use
- Protected Agricultural Areas

Existing Spatial Planning Land Use

- Agriculture
- Heritage and Tourism Area
- Industrial
- Informal Settlement
- Institutional Area
- Mixed Use
- Open Space System
- Residential Development Area
- Smallholdings
- Transportation

Klipplaat Spatial Proposals

- Cemetery
- Densification Area
- Heritage and Tourism Area
- Residential Development Area
- Industrial Area
- Institutional Area
- Mixed Use Corridor
- Open Space System
- Small holdings
- Transportation
- Urban Edge
- Activity Corridor - Road Maintenance
- Key Intersection

Map 93: Klipplaat (Spatial Proposals)

Source: Dr Beyers Naude SDF 2024

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4.8.3.5 INFRASTRUCTURE DEVELOPMENT

4.8.3.5.1 TRANSPORTATION DEVELOPMENT

Transportation infrastructure in Klipplaat requires strategic improvements to enhance regional connectivity, safety, and accessibility for residents. The R338 gravel road, connecting Klipplaat to Aberdeen and extending southward towards Steytlerville via the R329, is in poor condition and in need of regular maintenance. Upgrading these gravel roads is essential to ensure reliable access and improve the safety of transport routes, especially given their importance for linking rural communities and supporting local economic activities.

The R339 recently tarred and in good condition, has significantly improved connectivity between Klipplaat and Jansenville, enhancing access to key regional service centres along the R75. However, there is currently no formal public transportation network in Klipplaat apart from taxi services. Expanding transportation options, such as adding designated taxi stops and improving pedestrian and cycling infrastructure, would help address this gap. The development of non-motorized transport facilities, including safe walking and cycling paths along main roads and mixed-use corridors, would further support active transport options and improve accessibility for all residents.

These transportation improvements aim to enhance the quality of life in Klipplaat, reduce travel times, and support economic growth by improving access to regional development corridors and service centres.

4.8.3.5.2 INFRASTRUCTURE NEEDS ASSESSMENT

To support the sustainable growth of Klipplaat, several key infrastructure projects have been identified. The poor condition of local roads necessitates resurfacing, especially in areas without stormwater drainage, to enhance safety and resilience against flooding. Completing the upgrade of the Klipplaat Wastewater Treatment Works (WWTW), which was previously halted due to funding constraints, is a priority to ensure adequate sanitation services. Additionally, the landfill site requires proper licensing and management improvements to meet environmental standards.

Investing in IT infrastructure, such as expanding the wireless network, is essential for both residents and businesses, enhancing connectivity and access to digital services. There is a pressing need to develop sidewalks and cycle lanes along main roads, promoting non-motorized transport and improving pedestrian safety. The establishment of an SMME incubation centre will aid in boosting local entrepreneurship, while tourism enhancements like improved signage for historical sites will help tap into the town's cultural heritage. Lastly, upgrading rainwater harvesting systems and ensuring a consistent municipal water supply are vital to addressing the town's water needs and supporting long-term sustainability.

Table 27: Bulk Services Implications for Proposals

SERVICES IMPLICATIONS	
Water Implications	
The annual average daily demand (AADD) for the proposed population	60 kl /day
The annual average daily water demand (AADD) for the population (Liters per second)	0.71 l /s
The Total Annual Average Daily Demand (TAADD) for the proposed population	81.93 kl
The Total Annual Average Daily Demand per Second (TAADD) for the proposed population	0.94 kl
The total Peak Hour demand (TPHD)	200 kl /day
The total Peak Hour demand (TPHD) - Liters per second	2.47 l /s
The total Elevated Storage/Towers supply rate from the storage reservoir should be > -	2.71 kl
The total reservoir storage for the proposed development should be no less than 48 hours of TAADD	284.84 kl
The total elevated storage volume (6 Hours TAADD and assuming no backup power available	35.6 kl
Sewer Implications	
Sewerage Proposed Average Daily Flow	52 kl /day
Sewer: Peak Dry Weather Flow	131 kl /day
Sewer: Peak Wet Weather Flow	151 kl /day
The total sewer effluent peak	1.74 l/l

Electrical Demand	
Total Maximum demand (kVA)	-211
Total Maximum Demand (MVA)	-0.2111815

The infrastructure needs assessment for Klipplaat highlights key requirements for water, sewer, and electrical services to support future growth. The projected Annual Average Daily Demand (AADD) for water is 60 kl/day, with a peak hour demand of 200 kl/day. Storage reservoirs must maintain a supply rate of 2.71 kl and have a capacity of at least 284.84 kl to provide 48 hours of coverage. During power outages, a minimum elevated storage volume of 35.6 kl is necessary to sustain the water supply for 6 hours. The sewer system will require upgrades to handle average daily flows of 52 kl/day, with peak wet weather flows reaching 151 kl/day, and a total peak effluent discharge of 1.74 l/s.

In terms of electrical demand, the current assessment shows a negative maximum demand value of -211 kVA (-0.211 MVA), indicating that the existing electrical infrastructure is sufficient to meet the projected needs without requiring additional capacity. This suggests that the current power supply can accommodate the anticipated growth and development. However, it is important to continue monitoring electricity usage, as future expansions or unforeseen increases in demand could necessitate upgrades to maintain reliable service delivery.

4.8.4 CONCLUSION

The housing development areas are designed to accommodate the projected growth, which includes at least 380 households. Additionally, there are provisions for areas dedicated to meeting future needs for socio-economic facilities and services within the town.

In conclusion, the spatial and land use proposals for Klipplaat should focus on several key areas to enhance the town's functionality and appeal. Redeveloping the railway infrastructure to accommodate agri-industry and light service industries while preserving the railway infrastructure which is of heritage value and can be used for tourism activities is the main proposal to be supported.

Additionally, there should be strong support for the proposed infill residential development and densification areas to densify the town and integrate the various segregated parts of the town. The Central Business Area along Main Street requires refurbishment of buildings and revitalisation of public spaces to create a positive image when entering the town and attract investment. Preserving and sustaining the town's old buildings and heritage resources is essential.

4.9 RIETBRON

4.9.1 HISTORY

Rietbron, a quaint Karoo village established in 1910, lies on the R306 between Beaufort West and Willowmore. This remote settlement originated to meet the local farming community's need for a church, school, and basic social facilities. Over a century later, the town's close-knit spirit endures, with the Church, School, Agricultural Association, Women's Club, and Tennis Club remaining central to its identity. Named after a well-fed by a reed-filled water source ("riet" meaning "reed" and "bron" meaning "spring"), Rietbron was founded in a place of dependable underground water, crucial for life on the Karoo plains.

Rietbron's economy is deeply rooted in agriculture, particularly in the mohair industry, with Angora goats, Merino, and Dorper sheep providing quality wool and mohair. The town is also renowned for its Karoo lamb. In 1973, a promising uranium discovery on the nearby Ryskuil farm led to intensive prospecting, including the establishment of a test shaft, village, and airfield. However, the project was abandoned in 1984 when uranium prices fell sharply, though interest in prospecting revived briefly in 2004.

3rd Order Node

The village is well-loved for its annual sports festival in March, drawing both residents and visitors from afar. Key landmarks include the ACVV Hall, which now serves as a museum, the NG Kerk with its springbok weather vane, the library, and Die Bron—a well that serves as a nod to Rietbron's water-rich origins. Set in the vast openness of the Karoo, Rietbron is a peaceful escape for those seeking tranquillity, history, and an authentic rural experience.

4.9.2 SOCIO-ECONOMIC CONSIDERATIONS

Despite its small size and isolation, Rietbron boasts a rich cultural history, with notable sites including the Dutch Reformed Church featuring the only Springbok weather vane in South Africa, and a museum housed in the historic hall of the Afrikaans Christian Women's Association.

Rietbron faces several socio-economic challenges, including limited access to healthcare services, as it is only served by a mobile clinic from Willowmore. The town lacks pre-primary educational facilities, with only one primary school available to serve the community's needs. There is also a pressing need to address issues related to drug and alcohol abuse, which are prevalent due to high unemployment, low morale, and a lack of recreational facilities. The town's vibrant farming community and annual sporting events provide some social cohesion, yet there is a strong need for interventions aimed at improving social services and infrastructure.

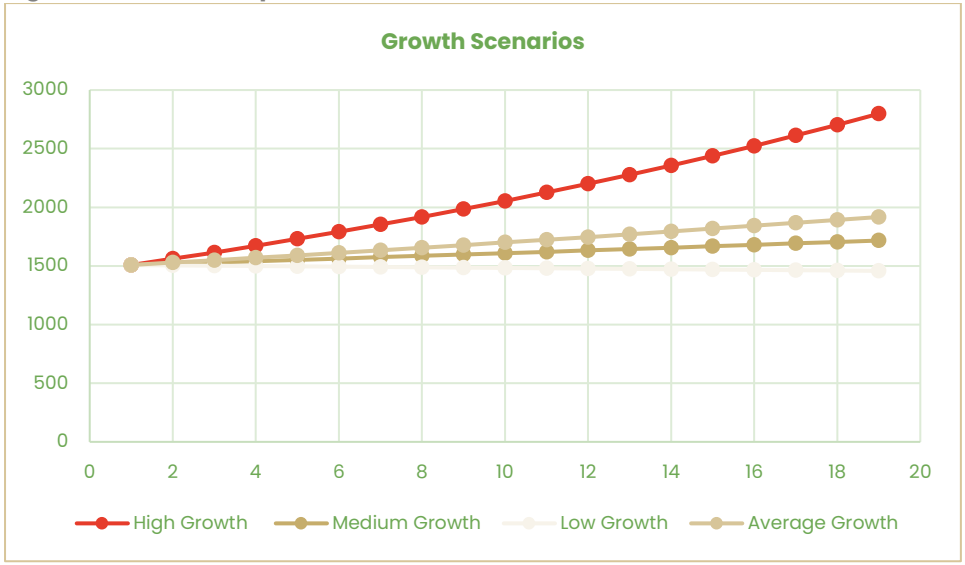
Tourism potential in Rietbron is currently underutilized. The town's rich history, peaceful setting, and attractions like the annual sports festival, historic church, and museum offer opportunities for niche tourism development. Enhancing tourism infrastructure, such as signage and better road access, could attract visitors looking for an authentic Karoo experience. Additionally, the potential for agri-tourism linked to the local mohair industry could provide a boost to the economy. However, the town's remote location and limited infrastructure present challenges that require targeted development strategies and support from government initiatives to unlock its potential.

4.9.2.1 POPULATION GROWTH PROJECTION FOR RIETBRON (2011 - 2040)

The population projections for Rietbron show potential growth scenarios based on historical data and projected trends. By 2025, the population is expected to range from 1,500 under the Low Growth scenario to 1,672 under the High Growth scenario. By 2030, the projections increase slightly, ranging from 1,486 (Low Growth) to 1,985 (High Growth). In 2035, the population could vary between 1,472 (Low Growth) and 2,357 (High Growth), showing a broader range influenced by potential economic developments and migration trends. By 2040, the population is projected to range from 1,458 (Low Growth) to 2,798 (High Growth), while the Medium Growth scenario estimates a population of 1,717.

These projections emphasize the need for adaptive and flexible planning strategies in Rietbron to cater to varying growth rates. With potential population changes, strategic investments in infrastructure, housing, and social services will be essential to support sustainable development, enhance the quality of life, and maintain the rural character of the town.

Figure 17: Possible Population Growth Scenarios for Rietbron



4.9.2.2 SOCIAL FACILITY NEEDS

Table 28: Social Facility Needs Assessment

SOCIAL FACILITIES NEEDS ASSESSMENT					
Facility	**Existing**	**Need 2024**	**Need 2030**	**Need 2040**	**Ha Required**
Education					
Crèche, Nursery- & Pre-primary School	1	-1	-1	-1	-0.01
Primary School	2	-2	-2	-1	-3.36
Secondary / High School	0	0	0	0	1.84
Health					
Primary Health Clinic	0	0	0	0	0.04
District Hospital	0	0	0	0	0.2
Community Services					
Religious centres	2	-1	-1	-1	-0.165
Local Library	0	0	0	0	0.006
Community Hall	1	-1	-1	-1	-0.45
Fire station/emergency services	0	0	0	0	0.24
Police Station	1	-1	-1	-1	-0.25
Post Office	0	0	0	0	0.01
Thusong Centre	0	0	0	0	0.2
Municipal offices/pay points	1	-1	-1	-1	-0.3
Community Information Centres	0	0	0	0	0.001

The social facilities need assessment for Rietbron reflects the town's small size and limited population growth, indicating a modest yet focused demand for educational, health, and community services by 2040. The current infrastructure is relatively sufficient, but targeted improvements are essential to enhance service delivery and meet the needs of the local community.

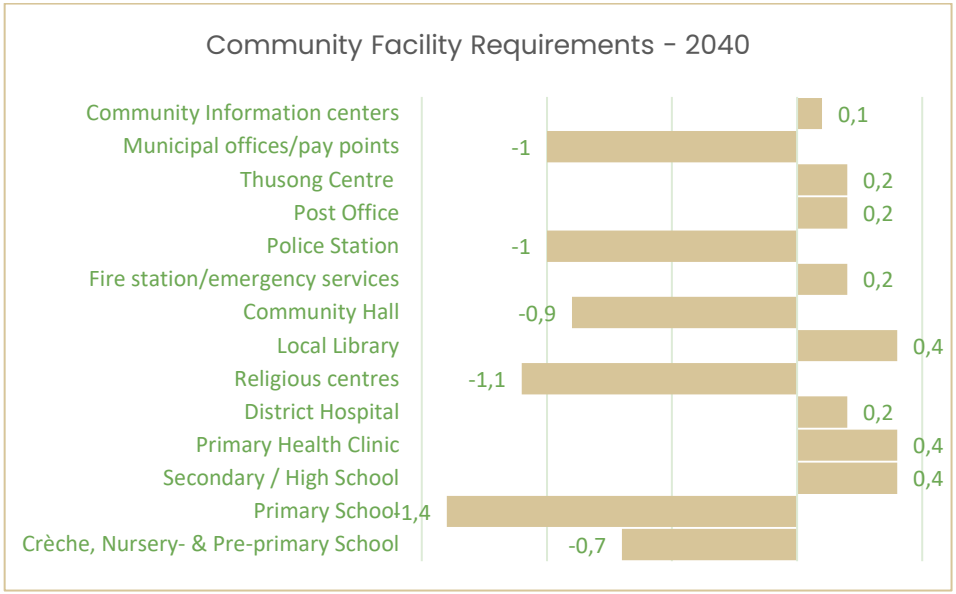
In terms of education, the assessment shows that no additional crèches, pre-primary, or secondary schools are needed by 2040, given the existing facilities and stable population projections. However, the two primary schools may be underutilized, suggesting a potential consolidation or reduction in capacity,

which could free up 3.36 hectares of land for alternative community uses or redevelopment.

For health services, Rietbron currently has no primary health clinic or district hospital. The analysis indicates that establishing a small, basic health clinic would require 0.04 hectares of land to address primary healthcare needs. A district hospital is not deemed necessary due to the town's size and proximity to larger service centres like Willowmore.

The demand for community services in Rietbron shows limited but specific needs. There is no requirement for additional religious centres or community halls, as the existing facilities can accommodate the current population. However, the addition of a local library and a Thusong Centre could significantly improve access to educational and social services, requiring a combined land allocation of 0.21 hectares. Improved emergency services, including the potential establishment of a fire station, are also recommended to enhance community safety, with an estimated land requirement of 0.24 hectares.

Furthermore, there is a noted need for the expansion of municipal offices and pay points, as well as the establishment of community information centres to provide integrated service points for residents, utilizing an additional 0.3 hectares. The overall approach focuses on optimizing existing facilities while implementing strategic enhancements to support Rietbron's rural community and promote sustainable development.



4.9.3 SPATIAL PLANNING CONSIDERATIONS

4.9.3.1 KEY SPATIAL PLANNING GUIDELINES:

Key considerations include:

- Strengthen the preservation of Rietbron's historical character, focusing on its unique rural heritage. The town's unique church and heritage museum serve as significant cultural assets. Compliance with the National Heritage Resources Act and guidelines from the South African Heritage Resources Agency (SAHRA) will help protect these landmarks and support heritage tourism.
- Promote Tourism and Heritage Development: Support the growth of tourism-related facilities that capitalize on Rietbron's rural character and historical sites. Enhancing cultural attractions, accommodations, and visitor services can position the town as a niche destination for heritage tourism, while also tapping into the eco-tourism potential of the surrounding rural landscape.
- Prioritize improving road linkages between Rietbron and nearby regional centres, particularly the critical connection to Willowmore. Enhanced connectivity will help improve access to socio-economic services,

employment, and regional markets, supporting the town's long-term development prospects.

- Expanding on the current sporting facilities in the town and taking advantage of the established sports festival. Developing new facilities that can expand the variety of sports played at the festival can create a unique sports festival in the heart of the Karoo.
- Promote agricultural activities and value chain development, including agri-tourism projects and local farm-to-table initiatives, to boost the local economy and showcase the region's agricultural heritage.

4.9.3.2 OPEN SPACE SYSTEM

Active Open Spaces (OP1)

- Ensure flexibility in layout and amenities to accommodate various recreational pursuits and community events.
- Include playgrounds with swings, slides, and climbing structures tailored to different age groups.
- Establish consistent design standards for active open spaces to create a cohesive and visually appealing environment.
- Develop outdoor gyms to improve community health and diversify the use of the properties.
- Supported Zonings: **Open Space Zone 1**

Passive Open Spaces (OP2)

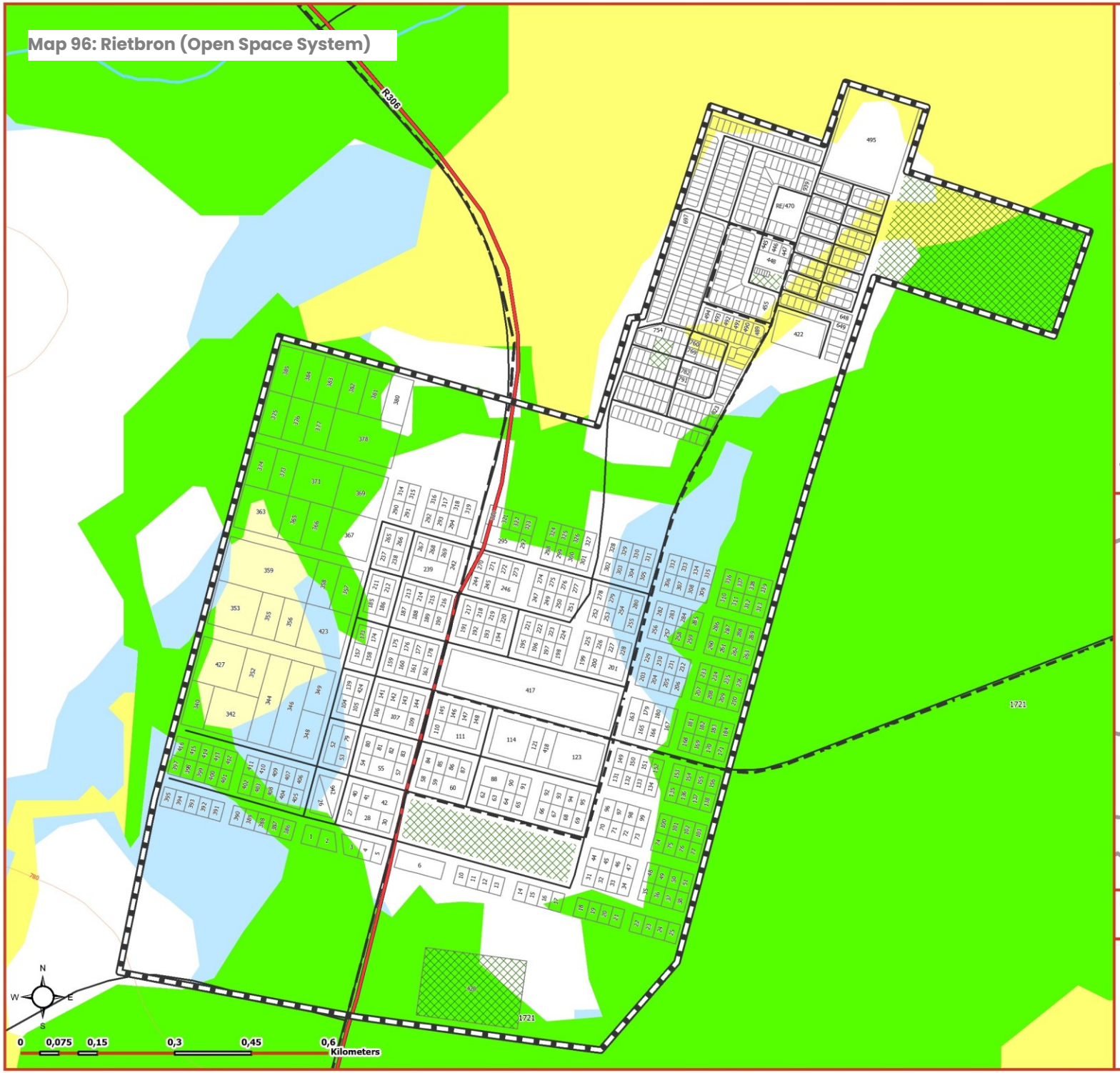
- Incorporate local vegetation such as various species of aloes, succulents and grasses into open space design, creating scenic routes and gardens.
- Employing native flora in landscaping and gardening endeavours fosters sustainability. Indigenous plants are naturally suited to local environments, demanding minimal water, fertilizer, and pesticides compared to exotic species. They offer cost-effective maintenance solutions, conserve water reservoirs, and bolster the indigenous ecosystem.
- Develop well-marked trails linking open spaces, offering opportunities for exploration.
- Identify picturesque spots with amenities like tables and benches for picnics.
- Provide strategically placed waste management facilities for cleanliness.
- Place restroom facilities strategically for user convenience and hygiene.
- Ensure proper lighting and maintenance along hiking trails and public facilities.
- Use lighting and landscaping for visibility and surveillance.
- Establish pathways linking passive spaces to active recreation zones.
- Supported Zonings: **Passive Open Space & Open Space Zone 2**

Sport Facilities (OP3)

To upgrade existing sports facilities by considering the following:

- Choose a centrally located site with ample space for various sports facilities and parking.
- Ensure zoning regulations permit a mix of indoor and outdoor sports activities.
- Design multipurpose facilities for padel tennis, field sports, and other sports clubs.
- Include amenities like changing rooms, seating, and equipment rental.
- Ensure sufficient parking spaces and accessible pathways.
- Enhance the facilities with greenery, seating areas, and amenities like drinking fountains.
- Create a welcoming environment for visitors to relax and socialize.
- Involve local sports clubs and community members in the planning process.
- Develop a diverse program of sports activities and events to engage residents of all ages.
- Supported Zonings: **Resort Zone & Open Space Zone 1**

Map 96: Rietbron (Open Space System)



Open Space System Rietbron

- Rivers
- Contours
- Wetlands
- Main / Provincial Road
- Parent Farm
- National Road
- Farm Portions
- Roads
- Erf
- Railway Lines

Terrestrial - CBA

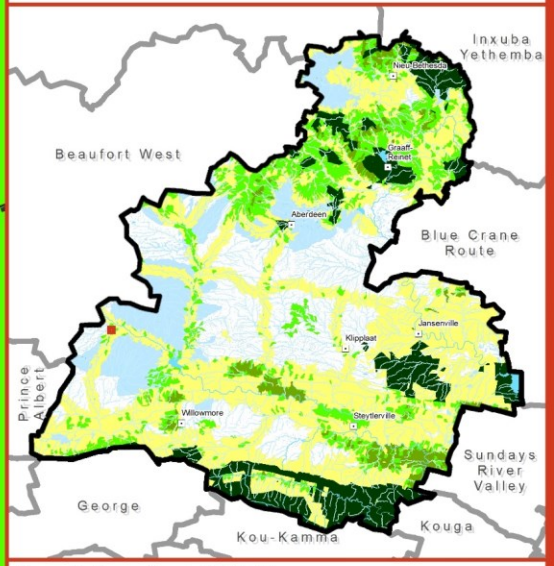
- PA
- CBA 1
- CBA 2
- ESA 1
- ESA 2
- Other

Freshwater - CBA

- CBA 1
- CBA 2
- ESA 1
- ESA 2
- Other

Rietbron Spatial Proposals

- Open Space System
- Urban Edge
- Activity Corridor



Source: Dr Beyers Naude SDF 2024

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4.9.3.3 HUMAN SETTLEMENTS DEVELOPMENT

The housing development strategy for Rietbron aims to address the town's modest but growing demand for residential options while respecting its rural, historical character. By 2030, an estimated 1.9 hectares of land will be required, increasing to 4 hectares by 2040. This allocation is expected to meet the demand for 39 additional housing units by 2030, rising to 95 units by 2040. The proposed housing zones include a mix of low-density, medium-density, and greenfield developments, focusing on efficient land use, formalisation of existing informal settlements, and strategic infill projects to enhance connectivity and align with existing infrastructure.

Key development zones include HD1 to HD4 focusing on medium-density residential projects to support infill development to connect the northern suburb of Rietbron to the rest of the town. The housing typology will differ to address the various needs of the community. The comprehensive approach aims to accommodate future growth, enhance walkability, and provide diverse housing options, ensuring a sustainable and cohesive development framework for the town.

Table 29: Rietbron Housing Assessment

Housing Development Needs - 2030			
Ha Required - @ 10 U/Ha	3.94806		ha
Ha Required - @ 20 U/Ha	1.97403		ha
Ha Required - @ 40 U/Ha	0.98701		ha
Ha Required - @ 50 U/Ha	0.78961		ha
TOTAL – Distributed Densities	**1.69766**		ha
Housing Development Needs - 2040			
Ha Required - @ 10 U/Ha	9.51382		ha
Ha Required - @ 20 U/Ha	4.75691		ha
Ha Required - @ 40 U/Ha	2.37846		ha
Ha Required - @ 50 U/Ha	1.90276		ha
TOTAL – Distributed Densities	**4.09094**		ha
	2022	2030	2040
Total number of Additional Houses Required	**0**	**39**	**95**
Total Area Proposed (Spatial Proposals)	**Ha**	**Ruling Erf Size**	**Possible Housing Opportunities**
	16.9	286	325.325

The housing development forecast for Rietbron indicates a steady increase in land requirements to accommodate projected population growth. The spatial proposals provide for approximately 16.9 ha of land for an estimated housing of 325 dwelling units at an average erf size of 286 m². The proposed development strategy focuses on meeting this demand mainly through infill projects, to create one integrated urban settlement. The plan emphasises sustainable design principles, efficient land use, and the preservation of Rietbron's historical and rural character, ensuring a variety of residential options that cater to the community's needs while promoting a cohesive and resilient urban environment.

Medium-Density Infill Residential Development (HD1)

HD1 covers an area of 2.9 hectares, designated for medium-density infill development at a density of 35 dwelling units per hectare. This zone is intended to provide new housing opportunities close to existing residential areas, supporting urban infill and efficient land use.

- HD1 can accommodate 102 residential units, contributing to the expansion of the town's housing supply while utilizing underdeveloped land.
- Provide basic services and a holistic road design approach.
- Support IRDP housing grant development.
- Prioritize pedestrian-friendly design principles, with interconnected streets, sidewalks, and green spaces to promote walkability and community interaction.
- Supported Zonings: **Residential Zone 1 & Residential Zone 4**

Medium-Density Infill Residential Development (HD2) – Priority Housing Focus

HD2 is a larger infill development zone, covering 6.6 hectares. It is planned for medium-density residential use, with a focus on meeting growing housing demand through a well-integrated residential layout.

- HD2 can potentially support 231 new residential units, providing a significant increase in available housing options and promoting community growth.
- Provide basic services and a holistic road design approach.
- Support IRDP housing grant development.
- Prioritize pedestrian-friendly design principles, with interconnected streets, sidewalks, and green spaces to promote walkability and community interaction.
- Supported Zonings: **Residential Zone 1 & Residential Zone 4**

Medium-Density Infill Residential Development (HD3)

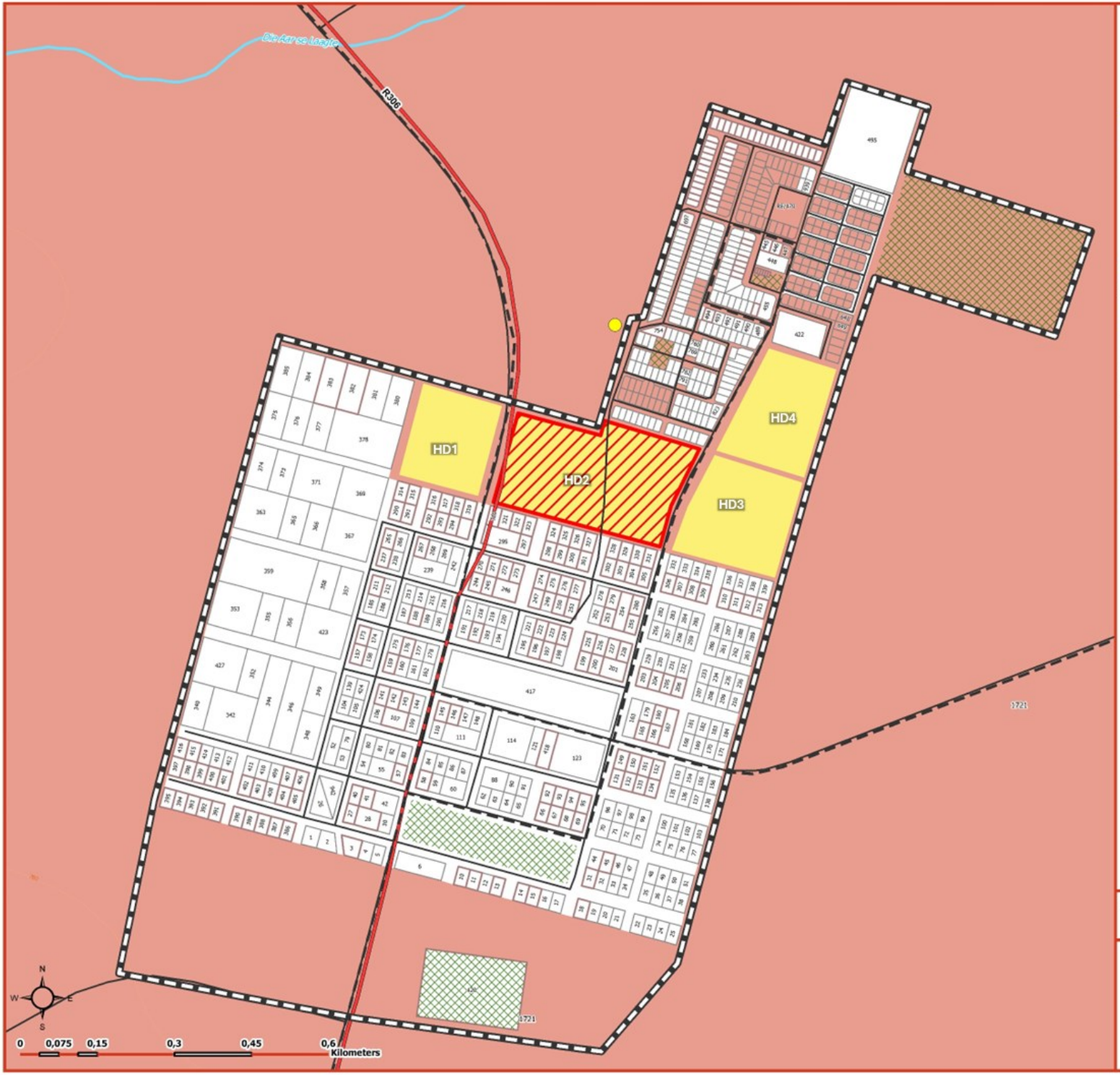
HD3 spans 3.9 hectares, designated for medium-density residential development at a consistent density of 35 dwelling units per hectare. This zone is designed to support urban infill, helping to connect existing residential neighbourhoods and improve land use efficiency.

- HD3 has the capacity to accommodate 137 residential units, aiding in the densification of the town while maintaining a balanced residential environment.
- Provide basic services and a holistic road design approach.
- Support IRDP housing grant development.
- Prioritize pedestrian-friendly design principles, with interconnected streets, sidewalks, and green spaces to promote walkability and community interaction.
- Supported Zonings: **Residential Zone 1 & Residential Zone 4**

Medium-Density Infill Residential Development (HD4)

HD4 is a 3.5-hectare area planned for medium-density infill development, focusing on providing additional residential units in response to local housing needs. The zone will maintain a density of 35 dwelling units per hectare.

- HD4 can accommodate up to 123 residential units, contributing to the expansion of Rietbron's housing stock and supporting sustainable urban growth.
- Provide basic services and a holistic road design approach.
- Support IRDP housing grant development.
- Prioritize pedestrian-friendly design principles, with interconnected streets, sidewalks, and green spaces to promote walkability and community interaction.
- Supported Zonings: **Residential Zone 1 & Residential Zone 4**



Human Settlements Development Rietbron

- Rivers
- Contours
- Wetlands
- Main / Provincial Road
- Parent Farm
- National Road
- Farm Portions
- Roads
- Erf
- Railway Lines
- Human Settlement Development
- Priority Housing Focus

Rietbron Spatial Proposals

- Housing Development Area
- Open Space System
- Urban Edge
- Activity Corridor

General Category

- Municipal
- Vacant
- Public Place

Map 99: Rietbron (Housing Development Areas)

Source: Dr Beyers Naude SDF 2024

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4.9.3.4 SPATIAL STRUCTURING

The spatial structuring elements pertain to the proposed mixed-use development corridors and zones for the town. While the terminology for these corridors and zones may be consistent, they differentiate between areas designated for future development and those that are already developed. This section also addresses the Central Business District, Industrial Development Focus Areas, and Institutional Zones. Additionally, it highlights key nodes identified for each town and references areas designated for government and municipal uses.

4.9.3.4.1 DENSIFICATION AREAS

To consider the following densification zones for Rietbron:

Densification north of the NG Church and school. This area supports residential infill development of up to 20 dwelling units per hectare. Supported zonings include **Residential Zone 1 & Residential Zone 4.**

4.9.3.4.2 MIXED-USE DEVELOPMENT CORRIDORS (MU)

The proposed mixed-use development corridors for Rietbron aim to create vibrant, multifunctional zones that accommodate diverse activities while enhancing accessibility, supporting local businesses, and preserving the town's unique Karoo heritage and historical character.

Low-Intensity Neighbourhood Centre - (**MU1**)

MU1 is designated as a low-intensity mixed-use zone, serving as a neighbourhood centre for residents who are located farther from the main retail areas. This zone focuses on small-scale commercial and institutional uses, providing essential services close to the community.

- Primary Uses supported include Small shops, retail outlets, and institutional services such as clinics or community centres.
- Informal Trading may be permitted in designated areas, supporting local vendors and small businesses.
- The corridor aims to enhance local access to basic goods and services, reducing the need for residents to travel to the central business area.
- Supported Zonings: **Business Zone 2**

Mixed-Use Buffer Zone (**MU2**)

MU2 serves as a transitional buffer zone between the lower-intensity neighbourhood uses of MU1 and the higher-intensity central business activities of MU3. This area accommodates a mix of uses, including light industrial and service-oriented businesses.

- Primary Uses supported include Retail, office spaces, light industrial workshops, and service-based enterprises.
- Supports small-scale industrial activities and service businesses, creating a balanced economic mix that complements the surrounding zones.
- Acts as a transition area, mitigating potential land use conflicts between the residential areas and the more intensive commercial activities in MU3.
- Supported Zonings: **Business Zone 2 & Business Zone 3**

Central Business Corridor (**MU3**)

MU3 is the designated central business area for Klipplaat, focusing on medium to high-intensity commercial activities. The zone supports a wide range of retail, business, and office uses but excludes heavy industrial activities to maintain a vibrant and pedestrian-friendly environment.

- Primary Uses supported include Retail shops, offices, professional services, restaurants, and accommodation facilities.
- Development in this corridor must align with Karoo-style architecture, incorporating design elements that reflect the heritage and historical significance of the town. Facades, street furniture, and landscaping should emphasize the Karoo theme.
- Supported Zonings: **Business Zone 1 & Business Zone 4**

4.9.3.4.3 INSTITUTIONAL DEVELOPMENT ZONES

Educational Facilities (IZ1)

The following guidelines and uses are proposed:

- Provision of education and related uses.
- Includes schools, crèches, tertiary facilities, and support activities.
- Supported Zonings: **Institution 1**

Community Services (IZ2)

The following guidelines and uses are proposed:

- Ensuring wheelchair-accessible parking spaces are available around the facility.
- Provision for worship facilities and related uses.
- Includes places of assembly
- Provision of a wide range of community facilities, including institutions.
- Supported Zonings: **Business Zone 1 & Institution 2**

Municipal and Government Use (IZ3)

Guidelines and supported uses encompass:

- Government and municipal uses, including magistrates' courts, municipal offices, police stations, and others.
- Ensuring the safety and accessibility of facilities for all individuals.
- Installing clear signage to facilitate access to services.
- Allocating adequate parking areas, including wheelchair-friendly spaces.
- Supported Zonings: **Institution 1, Authority Zone, Business Zone 1 & Business Zone 2**

Cemetery Development (IZ4)

Areas designated for cemeteries and future cemetery expansion to accommodate future needs as they arise.

- Supported Zoning: **Authority Zone**

4.9.3.4.4 INDUSTRIAL DEVELOPMENT ZONE

Not applicable to Rietbron

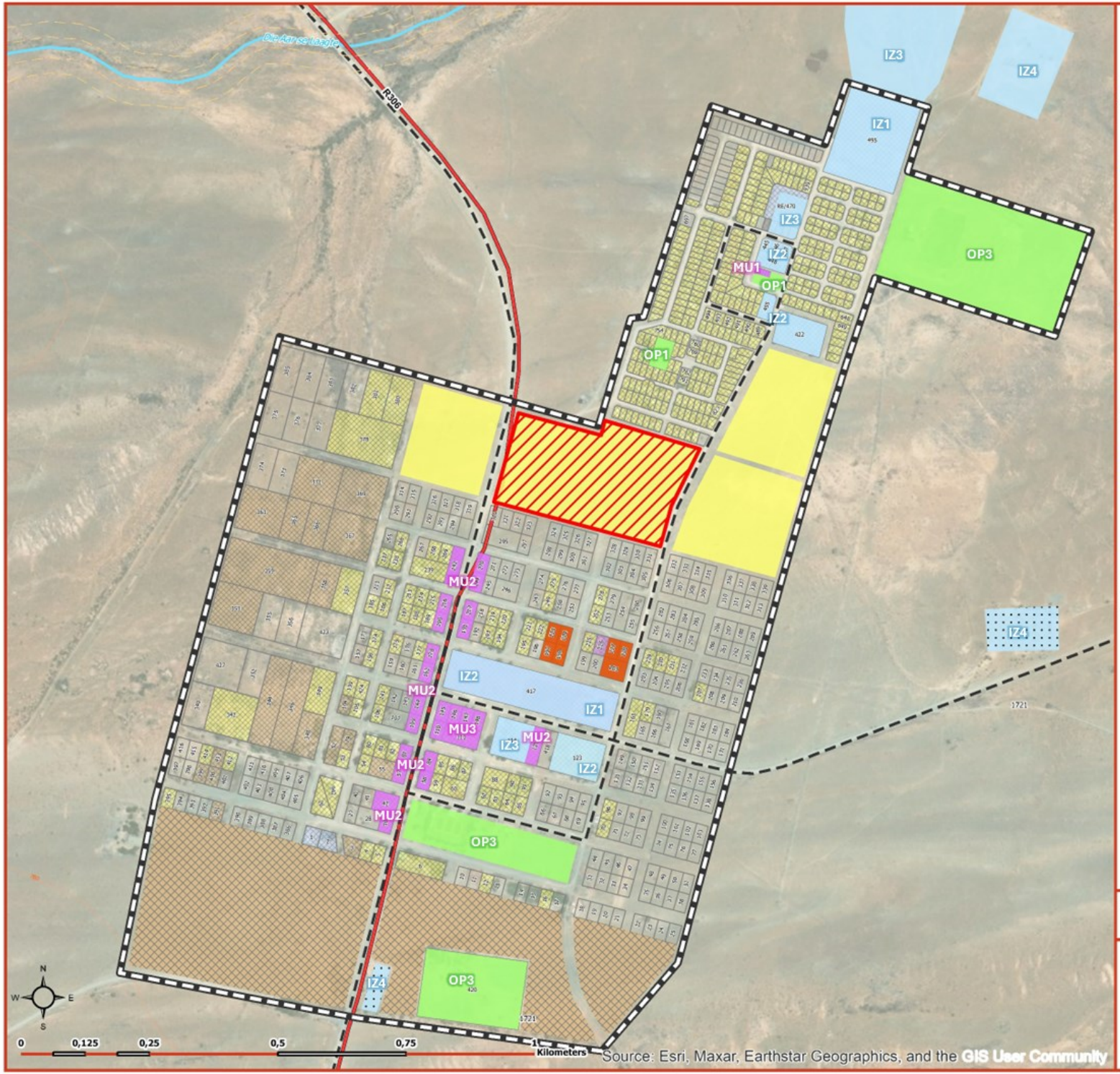
4.9.3.4.5 CENTRAL BUSINESS DISTRICT (CBD)

Not applicable to Rietbron

4.9.3.4.6 HERITAGE AND TOURISM ZONE

Key considerations within the Heritage and Tourism Zone include:

- Use plastic or aluminium windows/doors on street facades while maintaining authenticity with the town's heritage design.
- Ensure materials used match the heritage style of the area.
- Obtain approval from local authorities, and in provincial heritage areas, consent from the Eastern Cape Provincial Heritage Resources Authority is required.
- Submit sketch plans and site photographs before preparing final plans to incorporate recommendations.
- Depart from zoning regulations if proposed developments align with heritage area aims.
- Maintain street-facing building edges, limited to two stories high from any adjacent street boundary.
- For original buildings, additions can be made at the rear of the existing courtyard.
- Refer to the South African Heritage Resources Agency for guidance, established under the National Heritage Resources Act.
- Supported Zonings: **Resort Zone, Protected Area, Passive Open Space, Open Space Zone 2**



Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

Local Spatial Proposals Rietbron

- Priority Housing Focus

River Buffer Distance

- 20 m
- 50 m
- Rivers
- Wetlands
- Parent Farm
- Farm Portions
- Erf
- Contours
- Main / Provincial Road
- National Road
- Railway Lines
- Existing Land Use
- Protected Agricultural Areas

Rietbron Spatial Proposals

- Cemetery
- Densification Area
- Residential Development Area
- Institutional Area
- Mixed Use Corridor
- Open Space System
- Small holdings
- Urban Edge
- Activity Corridor - Road Maintenance

Existing Spatial Planning Land Use

- Agriculture
- Heritage and Tourism Area
- Industrial
- Informal Settlement
- Institutional Area
- Mixed Use
- Open Space System
- Residential Development Area
- Smallholdings
- Transportation

Map 102: Rietbron (Spatial Proposals)

Source: Dr Beyers Naude SDF 2024

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4.9.3.5 INFRASTRUCTURE DEVELOPMENT

4.9.3.5.1 TRANSPORTATION DEVELOPMENT

Transportation improvements are essential to enhance accessibility and safety in Rietbron. The construction of bicycle lanes, sidewalks, and traffic calming measures along main roads would improve non-motorized transport options and pedestrian safety. Upgrades to the MR411 and R306 roads are necessary to ensure reliable access, facilitate the delivery of essential services, and support economic activities, particularly in the agricultural and tourism sectors. Furthermore, improvements in IT infrastructure, including expanding wireless services, would help bridge the digital divide and support local businesses and education.

4.9.3.5.2 INFRASTRUCTURE NEEDS ASSESSMENT

Rietbron's infrastructure is in dire need of upgrades, particularly in terms of road maintenance and water supply. The MR411, a gravel road providing access to Rietbron from Willowmore, is in poor condition and requires urgent improvements. The dangerous state of the road has led to accidents, and the neglect has resulted in insufficient social and health services reaching the community. The R306, which leads northwards to Beaufort West and southwards to Willowmore, is also a gravel road needing upgrades to improve connectivity and access.

Water infrastructure in Rietbron relies heavily on underground boreholes. Ageing pipes and leakage issues are prevalent, highlighting the need for regular maintenance and potential upgrades to the underground reticulation network. The Wastewater Treatment Works (WWTW) in Rietbron do not currently meet Department of Water and Sanitation (DWS) standards, with only one operational oxidation pond and several structural issues requiring attention. Upgrading the WWTW is crucial for compliance and to ensure the safe disposal of wastewater. Solid waste management also poses a significant challenge.

The landfill site in Rietbron is unlicensed and inadequately managed, requiring urgent intervention and additional grant funding for upgrades. The lack of a proper waste management plan affects the town's environmental health and detracts from its potential as a tourism destination.

Table 30: Bulk Services Implications for Proposals

SERVICES IMPLICATIONS	
Water Implications	
The annual average daily demand (AADD) for the proposed population	40 kl /day
The annual average daily water demand (AADD) for the population (Liters per second)	0.55 l /s
The Total Annual Average Daily Demand (TAADD) for the proposed population	64.12 kl
The Total Annual Average Daily Demand per Second (TAADD) for the proposed population	0.74 kl
The total Peak Hour demand (TPHD)	100 kl /day
The total Peak Hour demand (TPHD) - Liters per second	1.92 l /s
The total Elevated Storage/Towers supply rate from the storage reservoir should be > -	2.11 kl
The total reservoir storage for the proposed development should be no less than 48 hours of TAADD	222.1 kl
The total elevated storage volume (6 Hours TAADD and assuming no backup power available	27.76 kl
Sewer Implications	
Sewerage Proposed Average Daily Flow	41 kl /day
Sewer: Peak Dry Weather Flow	103 kl /day
Sewer: Peak Wet Weather Flow	117 kl /day
The total sewer effluent peak	1.36 l/l
Electrical Demand	
Total Maximum demand (kVA)	-401
Total Maximum Demand (MVA)	-0.40

The infrastructure needs assessment for Steytlerville highlights key requirements for water, sewer, and electrical services to support future growth. The projected Annual Average Daily Demand (AADD) for water is 40 kl/day, with a peak hour demand of 100 kl/day. Storage reservoirs must maintain a supply rate of 2.11 kl and have a capacity of at least 222.1 kl to provide 48 hours of coverage. During power outages, a minimum elevated storage volume of 27.76 kl is necessary to

sustain the water supply for 6 hours. The sewer system will require upgrades to handle average daily flows of 41 kl/day, with peak wet weather flows reaching 117 kl/day, and a total peak effluent discharge of 1.36l/s.

In terms of electrical demand, the current assessment shows a negative maximum demand value of -401 kVA (-0.401 MVA), indicating that the existing electrical infrastructure is sufficient to meet the projected needs without requiring additional capacity. This suggests that the current power supply can accommodate the anticipated growth and development. However, it is important to continue monitoring electricity usage, as future expansions or unforeseen increases in demand could necessitate upgrades to maintain reliable service delivery.

4.9.4 CONCLUSION

The housing development areas are designed to accommodate the projected growth, which includes at least 286 households. Additionally, there are provisions for areas dedicated to meeting future needs for socio-economic facilities and services within the town.

In conclusion, the spatial and land use proposals for Rietbron should focus on several key areas to enhance the town's functionality and appeal. Maintaining the existing infrastructure and facilities should be the main priority for the town.

Additionally preserving and sustaining the town's old buildings and heritage resources is essential for tourism activities and a sense of place.

5 IMPLEMENTATION FRAMEWORK

5.1 INTRODUCTION

The Dr Beyers Naude Municipal Spatial Development Framework (DBN MSDF) serves as the primary spatial vision and guidance document to achieve the municipality's long-term development goals, spatial transformation, and sustainable use of land and resources. It aligns with the Spatial Planning and Land Use Management Act, 2013 (SPLUMA, 2013), which mandates the alignment of municipal planning, budgeting, and infrastructure investments with clear spatial priorities.

The Eastern Cape Provincial Spatial Development Framework (EC PSDF) emphasises the need for coordination between provincial and municipal spheres of government to drive spatial transformation and achieve the desired spatial future. The DBN MSDF ensures alignment with provincial and national frameworks while focusing on the municipality's specific spatial needs, opportunities, and challenges.

The spatial approach has gained importance in strategic planning and budgeting across South Africa, and Dr Beyers Naude Municipality has followed suit in ensuring spatial considerations are central to all municipal processes, including:

- Drafting of Integrated Development Plans (IDP)
- Service Delivery and Budget Implementation Plans (SDBIPs)
- Sector plan (Infrastructure master plans, disaster risk & climate change adaptation plans etc.)

This Implementation Framework outlines the key actions required to institutionalise spatial planning across the Dr Beyers Naude Municipal Government and ensure that the DBN MSDF becomes a core reference in all decision-making processes.

5.2 BACKGROUND AND PURPOSE OF THE IMPLEMENTATION FRAMEWORK

The purpose of the DBN MSDF Implementation Framework is to guide the effective implementation of the spatial development objectives of the municipality. It provides directives for aligning spatial planning with governance structures and ensuring the prioritisation of key spatial projects across municipal departments and local areas.

The key objectives of the Implementation Framework are to:

- Ensure spatial governance through the coordination and alignment of planning processes
- Promote alignment of the DBN MSDF with national, regional, provincial, and neighbouring municipal frameworks
- Prioritise projects in accordance with the DBN MSDF to maximize public investment
- Facilitate future reviews and updates of the DBN MSDF
- Establish mechanisms for monitoring and evaluation
- Define the roles and responsibilities of key stakeholders

5.3 KEY COMPONENTS OF THE IMPLEMENTATION FRAMEWORK

The DBN MSDF provides a comprehensive approach to spatial governance, aligning municipal planning efforts with national and provincial frameworks, prioritizing impactful projects, and ensuring ongoing review, monitoring, and clear roles for key stakeholders to achieve shared spatial objectives. The following components are key:

- **Spatial Governance and Directives:** The DBN MSDF mandates governance structures that facilitate cooperation among municipal departments and coordination with provincial and national government. A clear governance model will be established, ensuring integration between sectors and spatial planning efforts across spheres of government.
- **Alignment and Coordination with Other Frameworks:** The DBN MSDF aligns with key national and provincial frameworks, including the NSDF, EC PSDF, and Integrated Urban Development Framework (IUDF). It requires that all municipal departments integrate spatial planning into their strategic and annual performance plans, with a focus on shared spatial objectives.
- **Prioritisation of Projects Using the DBN MSDF:** Spatial targeting and prioritisation are critical to ensuring that public resources are directed toward areas where they can have the greatest impact. The framework introduces a prioritisation matrix, categorising projects based on their spatial alignment and contribution to municipal objectives.
- **Future Review of the DBN MSDF:** To ensure the continued relevance of the DBN MSDF, regular reviews will be conducted in alignment with the five-year review cycle mandated by SPLUMA. These reviews will incorporate emerging trends, new data, and stakeholder feedback.
- **Monitoring and Evaluation of the DBN MSDF:** The framework outlines a comprehensive monitoring and evaluation system, which will track the progress of spatial projects, assess the alignment of municipal plans with the MSDF, and report on spatial outcomes. Key performance indicators (KPIs) will be developed to measure success.
- **Roles and Responsibilities:** The success of the DBN MSDF depends on the active participation of key role players, including the Office of the Municipal Manager, municipal departments, ward committees, and public entities. The roles and responsibilities of each entity in implementing the DBN MSDF will be clearly defined to ensure accountability.

5.3.1 SPATIAL GOVERNANCE

Spatial governance refers to the system through which spatial policies, plans, and frameworks are implemented, ensuring alignment across various spheres of government. It involves the integration of spatial planning, land use management, and infrastructure development to promote equitable and sustainable growth. The governance system ensures that spatial frameworks such as the Municipal Spatial Development Framework (MSDF) align with local, provincial, and national strategies to achieve balanced development.

The Dr Beyers Naude MSDF is guided by SPLUMA (Act No. 16 of 2013), which mandates spatial governance across municipal, provincial, and national levels, aiming to achieve coherent spatial development and effective governance. This is achieved by aligning spatial policies with key objectives such as improving

interconnectivity, supporting economic growth, and ensuring sustainable land use.

5.3.1.1 DIRECTIVES FOR SPATIAL GOVERNANCE

The directives for spatial governance are designed to facilitate the integration and coordination of spatial frameworks within the municipality and with other spheres of government. These directives ensure that spatial planning is guided by a clear, shared vision, consistent with SPLUMA and other relevant legislation. The key directives include:

- **Compliance with SPLUMA:** Section 12(1) of SPLUMA mandates that all municipal development plans, projects, and programs must align with the municipal spatial development framework.
- **Intergovernmental Coordination:** Ensuring coordination between municipal and provincial spatial development frameworks to enable efficient and integrated land use management.
- **Project Prioritization:** Prioritising projects that align with the MSDF's development goals, particularly those that promote economic growth, sustainability, and equitable access to resources.
- **Monitoring and Evaluation:** Regular monitoring of spatial plans and outcomes to ensure compliance with the MSDF and alignment with provincial and national objectives.

5.3.1.2 INTEGRATED SPATIAL PLANNING FOR THE MUNICIPALITY

Integrated spatial planning in Dr Beyers Naude is achieved through coordinated actions across various municipal departments, ensuring alignment between the MSDF, sector plans, and ward-based planning. This integrated approach aims to optimize the use of land, improve service delivery, and facilitate sustainable development.

Key aspects of integrated spatial planning include:

- **Alignment of Provincial and Municipal Frameworks:** Ensuring that the MSDF aligns with the Eastern Cape Provincial Spatial Development Framework (EC PSDF), Karoo Regional Spatial Development Framework (KRSDF) and supports the municipality's Integrated Development Plan (IDP).
- **Multi-sectoral Coordination:** Engaging different sectors such as housing, transportation, energy, and environmental management to ensure cohesive and well-planned development.

5.3.1.2.1 MANDATE DELINEATION IN SUPPORT OF INTEGRATED SPATIAL PLANNING

5.3.1.2.1.1 National, Provincial and District Role Distribution

The table outlines the roles and responsibilities of key National departments, Eastern Cape provincial departments and the district municipality concerning implementing and supporting the Dr Beyers Naude Spatial Development Framework.

Table 31: Departmental role distribution in support of integrated spatial development

ENTITY	RESPONSIBILITY	KEY MANDATES
SANParks	Management of national parks.	◄ Implement the National Environmental Management: Protected Areas Act, 57 of 2003, with the mandate to conserve, protect, control and manage national parks and other defined protected areas and their biological diversity (biodiversity). ◄ Ensure environmental measures and projects are accurately reflected in SDFs as protected areas form large spatial components within SDFs.

Department of Agriculture Land Reform and Rural Development (EC: DALLRD)	Oversight of Spatial Planning, Land Use Management, and Environmental Services	◄ Provide national spatial guidelines and support provincial and municipal compliance with SPLUMA. ◄ Provide technical support for rural development and land reform initiatives. ◄ Oversee the implementation of SPLUMA to ensure compliance with land use management regulations. ◄ Support municipal and provincial land use schemes and spatial plans, ensuring alignment with the National Spatial Development Framework (NSDF).
DWS (Department of Water and Sanitation)	Water Services and Environmental Protection	◄ Enforce water regulations as per the National Water Act (1998) and Water Services Act (1997). ◄ Implement the Green and Blue Drop certification programs to monitor the performance of water service institutions. ◄ Provide technical support for water infrastructure planning and ensure alignment with SDFs. ◄ Ensure water and wastewater management systems align with spatial planning and growth areas identified in the PSDF.
Community Safety	Ensure safe and secure spatial development environments	◄ Integrate safety and crime prevention strategies into spatial plans. ◄ Coordinate with local police and emergency services to identify spatial vulnerabilities. ◄ Advise on the design of safe public spaces and community facilities.
Cooperative Governance and Traditional Affairs (CoGTA)	Oversee local spatial planning and support municipalities in SDF implementation	◄ Provide policy and technical guidance for local spatial development. ◄ Facilitate coordination among municipal, district, and provincial plans. ◄ Monitor compliance with spatial legislation (e.g., SPLUMA).
Economic Development, Environmental Affairs and Tourism	Align economic growth, environmental management, and tourism with spatial planning	◄ Integrate economic development and tourism strategies into spatial priorities. ◄ Ensure environmental sustainability in spatial zones. ◄ Promote investment in areas identified as growth corridors.
Education	Ensure educational infrastructure meets the demands of spatial growth	◄ Plan and site new educational facilities (schools, libraries) in emerging spatial areas. ◄ Coordinate with municipalities to address future facility needs. ◄ Support initiatives that improve access to quality education within spatial development zones.

Health	Align health service delivery with spatial development needs	◄ Plan and support the expansion of healthcare facilities (clinics, hospitals) in line with population projections. ◄ Integrate health infrastructure planning with local spatial plans. ◄ Ensure equitable access to health services in new growth areas.
Human Settlements	Integrate housing delivery and land use planning with the spatial framework	◄ Coordinate housing projects with municipal spatial plans and SDFs. ◄ Facilitate land allocation and sustainable settlement development. ◄ Align human settlements initiatives with projected population growth.
Provincial Treasury	Provide financial oversight and budgeting for spatial development projects	◄ Allocate and monitor funding for key spatial and infrastructure projects. ◄ Integrate spatial priorities into the provincial budgeting process. ◄ Ensure efficient use of funds in support of spatial objectives.
Public Works and Infrastructure	Deliver major infrastructure projects that underpin spatial development	◄ Plan and implement roads, water, sanitation, and public facilities according to spatial priorities. ◄ Coordinate infrastructure projects with local and district spatial plans. ◄ Ensure new infrastructure integrates with existing networks.
Rural Development and Agrarian Reform	Support rural spatial development and agrarian reform initiatives	◄ Facilitate rural development projects that enhance spatial integration. ◄ Support agricultural land use planning and land reform in line with the spatial framework. ◄ Enhance rural infrastructure and service delivery in emerging areas.
Social Development	Develop social infrastructure to support community well-being	◄ Plan and implement community facilities (e.g., community centres, libraries, recreational spaces) in accordance with spatial priorities. ◄ Coordinate social service delivery with spatial planning. ◄ Address social disparities by ensuring equitable access to community services.
Sport, Recreation, Arts and Culture	Integrate recreational, cultural, and sports facilities into spatial planning	◄ Ensure that sports, cultural, and recreational facilities are included in spatial development zones. ◄ Promote community engagement through integrated arts and cultural programming. ◄ Support the creation of public spaces that foster cultural and sporting activities.
Transport	Plan and coordinate transportation networks to support spatial development	◄ Develop and implement transport infrastructure that enhances connectivity between growth areas and established centres. ◄ Integrate multi-modal transport solutions with spatial development objectives.

		◄ Ensure accessible and efficient transport links to support economic and social development.
Sarah Baartman District Municipality	Support for Local Municipalities and Capacity Building	◄ Assist local municipalities in developing and implementing SDFs and land use schemes that align with district and provincial spatial plans. ◄ Provide capacity-building programs to strengthen municipal governance. ◄ Ensure municipal projects comply with SPLUMA and PSDF priorities. ◄ Facilitate the preparation of district-level infrastructure projects aligned with the PSDF.
Cacadu Development Agency	Support District Municipality regarding the implementation of catalytic projects	◄ Provide project management services and support regarding the implementation of catalytic projects. ◄ Ensure catalytic projects are integrated into the DDM, IDPs and Municipal SDFs.

Each department plays a vital role in ensuring that the Dr Beyers Naude Spatial Development Framework is implemented holistically—from safety and service delivery to infrastructure and economic development.

5.3.1.2.1.2 Municipal Role Distribution

The table outlines the roles and responsibilities of the municipal departments with respect to implementing and supporting the Dr Beyers Naude Spatial Development Framework.

Table 32: Departmental role distribution in support of integrated spatial development

DIRECTORATES	DBN MSDF ASSOCIATED LEVERS			
Municipal Manager	**1**	**2**	**3**	**4**
Sub Directorates: IDP, LED, PMS, Audit				
◄ Ensure development of IDPs are informed by the priorities identified within the SDF Ensure LED projects align with SDF development priorities & principles and vice versa ◄ Monitor the implementation of the SDF and LED strategies by assessing project with regards to the proposed project assessment model and alignment of project to the SPLUMA principles				
Financial services	**1**	**2**	**3**	**4**
Sub Directorates: SCM				
◄ Ensure projects are spatially referenced to determine whether municipal spending correlates to identified priority areas. Ensure SDF project assessment model is applied to all proposed projects				
Corporate Services	**3**			
Sub directorates: HR; Property Management; Legal				
◄ Ensure key roles are filled within the municipality to enable the fulfilment of mandates Ensure municipal properties are maintained and well kept				
Infrastructure Services	**1**	**2**	**3**	**4**
Sub directorates: Town planning; Technical Departments				
◄ Ensure infrastructure is upgraded and expanded according to the SDF priorities, to ensure the projected populations can be served effectively in future ◄ Monitor development trends regarding the compliance of development applications with the SDF proposals ◄ Ensure the SDF is considered during the development of master infrastructure plans ◄ Ensure development takes place in accordance with the SDF Levers, Drivers and Local proposals through the approval of development applications in accordance with the LUS and SPLUM Bylaw				
Community Services	**3**			

- Ensure community development and supporting services are aligned with the strategic intention of the SDF Levers & Drivers; and aligns with the identified required services per settlement

5.3.2 CAPITAL INVESTMENT FRAMEWORK

The Capital Investment Framework for the Dr Beyers Naude Municipality serves as the primary implementation mechanism for the Spatial Development Framework. This framework provides a structured approach to capital expenditure that aligns with the municipality's spatial vision and development objectives whilst ensuring the efficient allocation of limited resources.

5.3.2.1 STRATEGIC CONTEXT

The framework responds to critical development challenges within the municipal area, including significant housing backlogs, infrastructure maintenance requirements, and the need for economic development. Capital investment decisions are guided by the imperative to address these challenges whilst promoting sustainable spatial transformation.

5.3.2.2 INVESTMENT FOCUS AREAS

5.3.2.2.1 2024/2025 &2025/2025 IDP CAPITAL PROJECTS

The following provides a summary of the projected expenditure per ward associated with one of the following development priority categories:

5.3.2.2.1.1 BASIC SERVICE DELIVERY AND INFRASTRUCTURE:

Key Strategies:

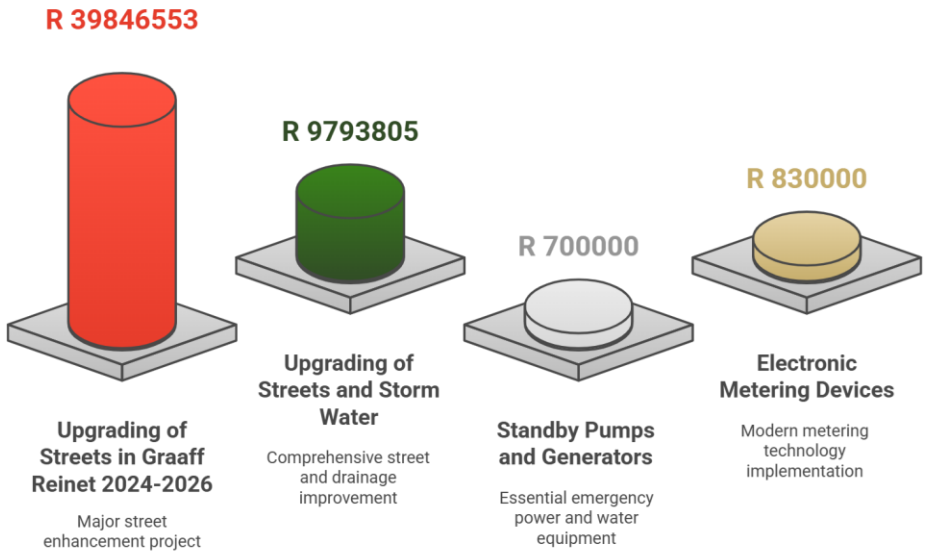
- Conduct a Housing Audit for the new Dr Beyers Naudé Local Municipality; consolidate Housing Needs Register.
- Regularly update the Housing Needs Register to ensure that the National Housing Register is kept current.
- Conduct a Land Audit for the new Dr Beyers Naudé LM and identify areas that are suitable for Human Settlement and other development.
- Conduct / commission the necessary investigations (incl. EIAs) and surveys; zone, register and systematically release land for its intended development.
- Ensure that the Department of Human Settlements develops a new Housing Sector Plan for Dr Beyers Naudé LM and regularly reviews it, taking into consideration the social and economic needs of the new settlements being planned.
- Review Spatial Development Framework every 5years to ensure development is guided in sustainable manner that informs the IDP and other sector plans regarding the location of developmental pressures
- Align sector plans with the changing situation and needs of our communities, whilst sensibly utilizing our natural resources, protecting and preserving our built and natural environment, as well as our cultural heritage.
- Consolidate and upgrade our Spatial Planning and Land Use Management systems by installing the necessary electronic equipment, software and personnel, prioritising the establishment of an GIS unit within the municipality.
- Developing strategies for pro-actively addressing the challenges of climate change (drought, flooding, etc.).
- Provide the necessary biodiversity and environmental oversight by applying and enforcing environmental by-laws & regulations, conducting EIAs and having the required plans, by-laws, and systems in place.

Ward-Specific Projects:

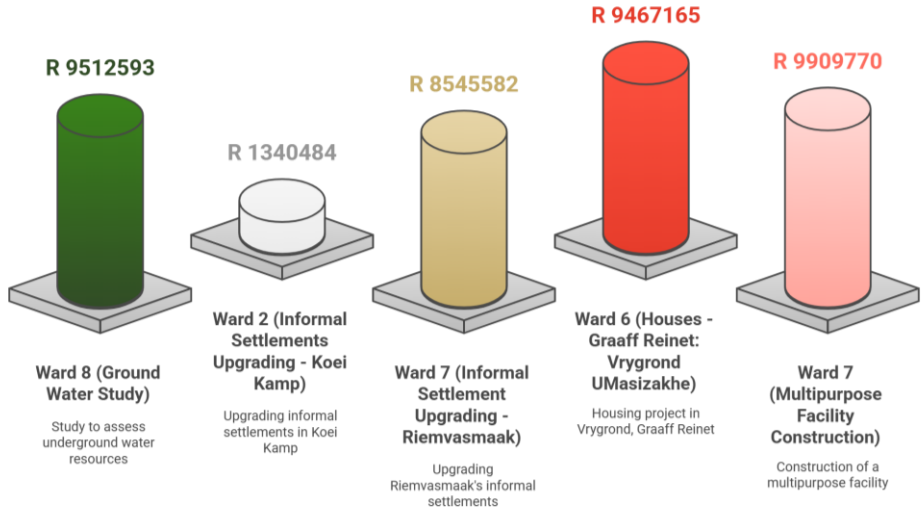
- Ground Water Study (Ward 8 – R9.51M):
  - A detailed study to secure sustainable water sources in Ward 8.
- Informal Settlement Upgrading:
  - Koei Kamp in Ward 2: R1.34M
  - Riemvasmaak in Ward 7: R8.55M
  - Housing (Graaff Reinet: Vrygrond UMasizakhe) in Ward 6: R9.47M
- Multipurpose Facility Construction (Ward 7 – R9.91M):
  - Develop community amenities in Ward 7.
- Ward 8: R3 635 027,40 Bulk Water Supply - Steel Pipelines from Wanhoop: Replacement

Projects Spanning Multiple Wards:

- Standby Pumps and Generators (R700,000 – All Wards):
  - Distributed equally across 12 wards to ensure emergency backup services.
- Electronic Metering Devices (R830,000 – All Wards):
  - Upgrades billing systems for water/energy, rolled out over 2024–2026.
- Upgrading of Streets in Graaff Reinet (R39.85M):
  - Enhances road networks and connectivity municipality-wide.
- Upgrading of Streets and Storm Water (R9.79M):
  - Improves street conditions and stormwater management across all wards

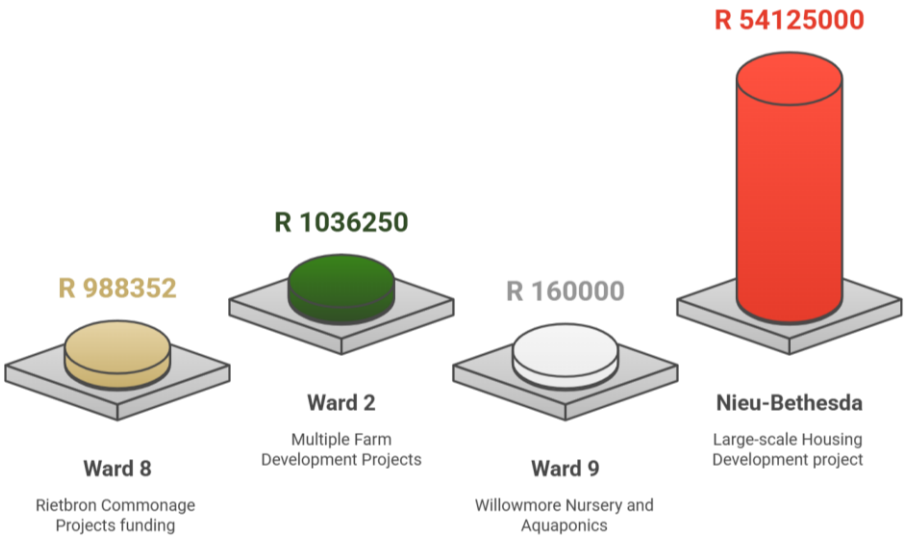


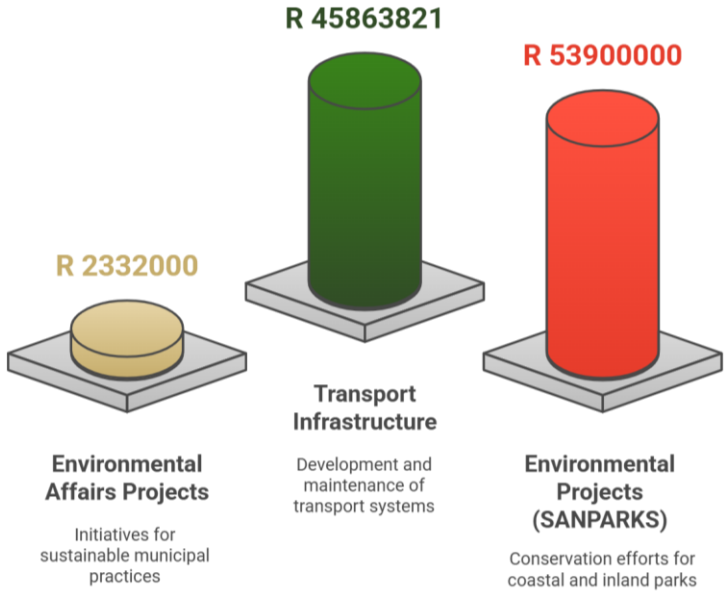
5.3.2.2.1.2 Community Services Development Priority



Ward-Specific Projects:

- Rietbron Commonage Projects (Ward 8 – R988K):
  - Enhances community spaces in Ward 8.
- Multiple Farm Development Projects (Ward 2 – R1.04M):
  - Supports agricultural initiatives and local food security.
- Willowmore Nursery and Aquaponics (Ward 9 – R160K):
  - Promotes innovative, sustainable community services.
- Housing Development (Nieu-Bethesda – R54.13M):
  - A flagship project targeting large-scale housing needs.





Municipality-Wide Projects:

- Environmental Affairs Projects (R2.33M):
  - Funds waste management and conservation initiatives.
- Transport Infrastructure (R45.86M):
  - Invest in road improvements and public transport to boost connectivity.
- Environmental Projects (SANPARKS – R53.90M):
  - Supports coastal and inland environmental projects for long-term sustainability.

5.3.2.2.1.3 Priority unfunded projects

The IDP identifies a number of projects that are not yet funded, as such the following section identifies some of the key project in support of the SDF Lever and Drivers

Table 33: Crucial Unfunded Projects

Development Priority	Unfunded Projects
Infrastructure Development and Planning	**IDP-125**: Willowmore Bulk Water Supply – Steel Pipeline Phase 2
	IDP-126: Graaff-Reinet Bulk Water Supply – Raw Water Storage Reservoir
	IDP-127: Replacing of Internal Water Reticulation System – Graaff Reinet
	IDP-128: Replacing of Internal Water Reticulation System – Aberdeen

	◄ **IDP-129**: Replacing of Internal Water Reticulation System – Klipplaat
	◄ **IDP-130**: Replacing #20 Small Bore Sewer Connection to Waterborne – Aberdeen
	◄ **IDP-131**: Graaff Reinet – Southern Wellfield Development
	◄ **IDP-132**: Replacement of All Domestic Water Meters to Smart Volume Control
	◄ **IDP-133**: Upgrade of Potable Water Supply to Adendorp and Wolwofontein
	◄ **IDP-134**: Ground Water Studies for Wellfields
	◄ **IDP-135**: Steytlerville Bulk Water Supply – Erasmuskloof Refurbishment
	◄ **IDP-136**: Upgrading of Graaff-Reinet Transfer Station
	◄ **IDP-137**: Upgrading of Graaff-Reinet Transfer Station – Surveying & Pegging (Erf 1823 – Social Housing)
	◄ **IDP-138**: Engineering Design – Internal Services (Erf 1823 – Social Housing)
	◄ **IDP-139**: Extension of Validity of EIA – Erf 1823 (Social Housing)
	◄ **IDP-140**: Refurbishment of Graaff-Reinet Town Hall
	◄ **IDP-141**: Development of Key Plans (e.g. Electricity Masterplan, Water Safety Plans, etc.)
	◄ **IDP-142**: Development of Bulk Services for All Towns (Water, Sanitation, Electricity)
	◄ **IDP-143**: Upgrading of Reticulation Networks (Water, Sanitation, Electricity)
	◄ **IDP-144**: Social Housing Survey and Pegging of Erf 1823
	◄ **IDP-145**: Engineering Designs for Internal Services of Erf 1823
	◄ **IDP-146**: Environmental Impact Assessment (EIA)
	◄ **IDP-147**: Land Audit for Dr Beyers Naudé LM
	◄ **IDP-148**: Willowmore – Upgrading of Streets
	◄ **IDP-149**: Willowmore Bulk Water Supply – Additional Resources & New Boreholes/Pipelines
	◄ **IDP-150**: Willowmore Bulk Water Supply – Upgrading/Extension/Additional Resources
	◄ **IDP-156** to **IDP-160**: Upgrading/Replacing Sewer Pump Stations, MV/LV Infrastructure, MV Switchgear

	◄ **IDP-161** to **IDP-169**: Upgrading of Electrical Infrastructure, Testing Equipment, Standby Equipment (Transformers, Pumps, Generators)
	◄ **IDP-170** to **IDP-172**: Additional Standby Generators/Borehole Pumps
	◄ **IDP-176** to **IDP-184**: Sewer rods; Multiple Roads & Stormwater Drainage projects
	◄ **IDP-185** to **IDP-190**: Replacement of Old Valves/Hydrants; Internal Water Reticulation System & Pump/Motor Replacements
	◄ **IDP-191** to **IDP-195**: Replacement/Reconstruction of Solar Panels, Bulk Meters, Wooden Poles; Borehole refurbishment; Road Reconstruction
	◄ **IDP-196** to **IDP-199**: Tools Procurement, Standby Pumps, Portable Water Pumps
	◄ **IDP-1000** to **IDP-1011**: Office Equipment (as unfunded under infrastructure) and New Bulk Water Reticulation Pipeline
	◄ **IDP-1012** to **IDP-1018**: Installation of High Mast Lights, Fencing at WWTW, and Ikwezi Bulk Water Supply projects
	◄ **IDP-1019** to **IDP-1024**: Emergency Water Supply Schemes, Upgrading of Pump Stations, Geohydrological Studies, Flatbed Truck
	◄ **IDP-1025** to **IDP-1030**: EIA Equipment, Upgrading of Solid Waste Disposal Site, Crane Truck, Counter
	◄ **IDP-1031** to **IDP-1039**: Construction of Steel Reservoir, Concrete Mixers, Compressor Trailer, Compactors, Cherry Picker, Cash Register, Bulk Meters, Buildings Refurbishment, Bird Flappers, Bakkie
	◄ **IDP-1040** to **IDP-1046**: Bakkie; Installation of Pumps; Air Conditioner at Substation; Acquisition of Office Furniture/Lab Instruments/Computers; Upgrading of Bulk Water Supply (Aberdeen Phase 2)
	◄ **IDP-1047** to **IDP-1053**: 6000L Tanks; 360° Excavator; 10Cube Tipper Trucks; Upgrade Infrastructure; Streetlights; High Mast Lights; Alternative Energy Installations
	◄ **IDP-1054** to **IDP-1057**: Substations; Transformers; Ripple Control System; MV/LV Switch Gear Replacement
	◄ **IDP-1058** to **IDP-1060**: Upgrading Notified Maximum Demand; Tools & OHS Equipment

	◄ **IDP-1061** to **IDP-1067**: Buildings Maintenance/Repairs; Electrification of Houses; Power Factor Correction
	◄ **IDP-1068** to **IDP-1071**: Bulk Metering Units; Pre-Paid Meter Switch; Repairs & Maintenance; Energy Efficient Retrofits; Generators
	◄ **IDP-1072** to **IDP-1078**: Resealing/Re-gravelling of Streets; Water Use License Application; Combination of Sewer and Jetting Truck
2. Community Services	◄ **IDP-200**: Rietbron Commonage 8 – DRDAR
	◄ **IDP-201**: Irene Farm 2 – DRDAR
	◄ **IDP-202**: Comdale Farm 2 – DRDAR
	◄ **IDP-203**: Willowmore Nursery and Aquaponics 9 – DRDAR
	◄ **IDP-204**: Irene Farm 2 – DRDAR
	◄ **IDP-205**: Grassrand 2 – DRDAR
	◄ **IDP-206**: Grassrand 2 – DRDAR
	◄ **IDP-207**: Rietbron Commonage 8 – DRDAR
	◄ *(Additional entries include)* Rietbron Commonage 8 (Additional allocation: R657,000), EPWP Waste Management Projects (Whole Municipality – Environmental Affairs), Maintenance of Provincial Roads (Transport), Cleaning and Greening Initiatives (SANPARKS – coastal and inland), and Nieu-Bethesda Human Settlements
Office Equipment	◄ **IDP-306**: Wireless Internet – Willowmore (Tourism)
	◄ **IDP-307**: Wireless Internet – Klipplaat (Tourism)
	◄ **IDP-326**: Refurbishment of Rondavels in Goedhals Square
	◄ **IDP-361**: Erection of New Crafters Stalls
	◄ **IDP-368**: Communication & Network Strengthening in Remote Areas
	◄ **IDP-372**: Buildings Refurbishment

5.3.2.3 KEY INVESTMENT CONSIDERATIONS

The following section provides insight regarding services required within settlements.

5.3.2.3.1 SOCIAL SERVICES NEEDS PER TOWN

The following matrix indicates which type of social services are still required within each settlement regarding the CSIR's provision of social

Facilities in South African settlements guidelines.

Table 34: Social Service Requirement per settlement

Settlement	Crèche	Primary School	Secondary School	Primary Health Clinic	District Hospital	Religious Centres	Local Library	Community Hall	Fire Station	Police Station	Post Office	Thusong Centre	Municipal Offices	Community Info
Graaff Reinet	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No	Yes	Yes	No	Yes
Aberdeen	Yes	Yes	No	No	No	No	Yes	No	Yes	No	No	Yes	No	Yes
Jansenville	Yes	Yes	No	Yes	No	Yes	Yes	No	Yes	No	No	Yes	No	No
Willowmore	Yes	Yes	Yes	Yes	No	Yes	Yes	No	Yes	No	No	Yes	No	Yes
Steytlerville	No	No	No	No	Yes	No	Yes	No	Yes	No	No	Yes	No	No
Nieu-Bethesda	No	No	Yes	Yes	No	No	No	No	No	No	No	No	No	No
Klipplaat	No	No	No	No	Yes	No	Yes	No	No	No	No	Yes	No	Yes
Rietbron	No	No	No	No	No	No	No	No	No	No	No	No	No	No

5.3.2.3.2 WATER & SANITATION NEEDS

The table represents the latest assessment conducted by DWS regarding the distribution of water within the Dr Beyers Naude Municipality.

Table 35: Water infrastructure requirements per settlement

Water Scheme Name	Households with Reliable Services	Households without a Reliable Services	Households without Reliable Service due to: Resource	Households without Reliable Service due to Infrastructure	Households without Reliable Service due to: Resource – Conservation & Demand	Households without Reliable Service due to: New Source	Households without Reliable Service due to: Infrastructure – UPGRADE/ REFURBISHMENT	Households without Reliable Service due to: Infrastructure – EXTENSION
Settlements not within a scheme	294	0	3448	213	0	3448	0	0
Aberdeen Local WSS	1 965	0	1 965	168	0	1 965	0	0
Graaff-Reinet Regional WSS	8409	0	8409	478	0	8409	0	0
Jansenville Local WSS	3002	0	3002	190	0	2 257	0	746
Klipplaat Local Individual WSS	2549	0	2549	346	0	0	0	0
Nieu-Bethesda Local WSS	386	0	386	19	0	386	0	0
Rietbron WSS	332	0	332	26	0	332	0	0
Steytlerville Local WSS	783	350	1 133	101	0	1 133	0	0
Willowmore WSS	1 438	349	1 787	132	1 787	0	0	0
	19 158	**699**	**23 011**	**1 673**	**1 787**	**17 930**	**0**	**746**

The table represents the latest assessment conducted by DWS regarding the status of access to sanitation within the Dr Beyers Naude Municipality.

Table 36: Sanitation infrastructure requirements per settlement

Settlement name	Buckets to none-sewered or on-site	None to waterborne	Buckets to waterborne	None to none-sewered or on-site	VIP to waterborne	VIP Emptying needs
Aberdeen	0	2	0	0	0	0
Adendorp	0	0	0	0	0	0
Asherville	0	3	0	0	0	0
Baroe (Old Railway Siding)	0	0	0	0	0	0
Dan Sandi View	0	2	0	0	0	0
Dr Beyers Naude Rural	0	7	0	0	0	0
Fullarton (Old Railway Siding)	0	0	0	0	0	0
Graaff Reinet	0	2	0	0	0	0
Grasrand	0	0	0	0	0	0
Hillview	0	10	0	0	2	0
Jacobsville	0	3	0	0	1	0
Jansenville	0	17	0	0	0	0
Klipplaat	0	9	0	0	0	0
Kroonvale	0	7	0	0	0	0
Kwazamukucinga	0	3	0	0	0	0
Lotusville	0	6	0	0	0	0
Lovemore	0	4	0	0	1	0
Miller (Old Railway Siding)	0	0	0	0	0	0
Mount Steward	0	0	0	0	0	0
Nieu-Bethesda	0	2	0	0	0	0
Paardefontein	0	0	0	0	0	0
Phumlani & Other (Jansenville)	0	746	0	0	0	0
Prinsvale	0	9	0	0	0	0
Rietbron	0	0	0	0	0	0
Slangfontein	0	0	0	0	0	0
Spandauville	0	1	0	0	0	0
Steytlerville	0	6	0	0	0	0
Thembalesizwe SP	0	3	0	0	0	0
Umasizakhe	0	4	0	0	0	0
Vondeling (Old Railway Siding)	0	0	0	0	0	0

Vuyolwetho	0	6	0	0	0	0
Waterford	0	0	0	0	0	0
Willowmore	0	3	0	0	1	0
Wolwefontein (Old Railway Siding)	0	0	0	0	0	0
Wongalethu	0	2	0	0	0	0
	-	**857**	**-**	**-**	**5**	**-**

5.3.2.3.3 ESTIMATED HOUSING NEEDS (2030 & 2024)

The following table provides a summary of the estimated housing needs for 2030 and 2040 based on the projected population sizes for each settlement

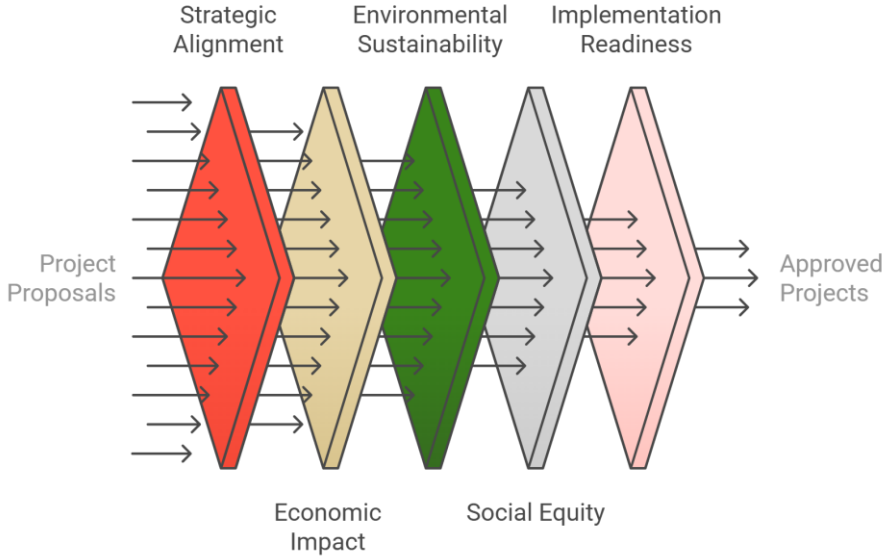
Table 37: Projected housing needs

Town	Additional Houses Required (2030)	Additional Houses Required (2040)	Distributed Densities (ha) 2030	Distributed Densities (ha) 2040
Graaff Reinet	626	1461	26.93	62.84
Aberdeen	126	293	5.41	12.62
Jansenville	99	230	4.24	9.89
Willowmore	135	315	5.80	13.53
Steytlerville	135	315	2.24	7.08
Nieu-Bethesda	135	315	–	7.08
Klipplaat	52	122	2.24	5.23
Rietbron	39	95	1.70	4.09

5.3.2.3.4 SPATIAL PROPOSAL AREA DISTRIBUTION

5.3.2.4 PROJECT PRIORITIZATION MODEL

The Dr Beyers Naude Municipality is implementing a strategic spatial development agenda that requires systematic evaluation of development projects. This prioritization model provides a structured framework for assessing projects based on their alignment with spatial development goals, economic viability, environmental sustainability, social impact, and implementation



feasibility.

5.3.2.4.1 PROJECT ASSESSMENT FRAMEWORK

5.3.2.4.1.1 Assessment Structure

The framework evaluates projects across five key themes:

- Spatial Development Integration (35%)
- Economic Impact & Sustainability (25%)
- Environmental Responsibility (20%)

- Social Development & Equity (10%)
- Implementation Capacity (10%)

5.3.2.4.2 SCORING METHODOLOGY

5.3.2.4.2.1 Assessment Formula

The total weighted score for a project is calculated using the following formula:

$$\textbf{Total Project Score} = \Sigma(Ci \times Wi)$$

Where: Ci = Category score (sum of weighted sub-criteria scores within each category) Wi = Category weight (expressed as a decimal)

For each sub-criterion, the weighted score is calculated as:

$$\textbf{Sub criterion Score} = (Si - 1) \times 0.25 \times Ws$$

Where: Si = Raw score assigned (scale of 1-5) Ws= Sub criterion weight (category weight divided by number of sub-criteria)

5.3.2.4.2.2 Category Weights and Distribution

The formula incorporates five main assessment categories with the following weight distributions:

- Spatial Development Alignment (35%)
  - Each of the five sub-criteria receives 7% weight (35% ÷ 5)
- Economic Development Impact (25%)
  - Each of the three sub-criteria receives 8.33% weight (25% ÷ 3)
- Environmental Sustainability (20%)
  - Each of the three sub-criteria receives 6.67% weight (20% ÷ 3)
- Social Equity & Integration (10%)
  - Each of the three sub-criteria receives 3.33% weight (10% ÷ 3)
- Implementation Readiness (10%)
  - Each of the three sub-criteria receives 3.33% weight (10% ÷ 3)

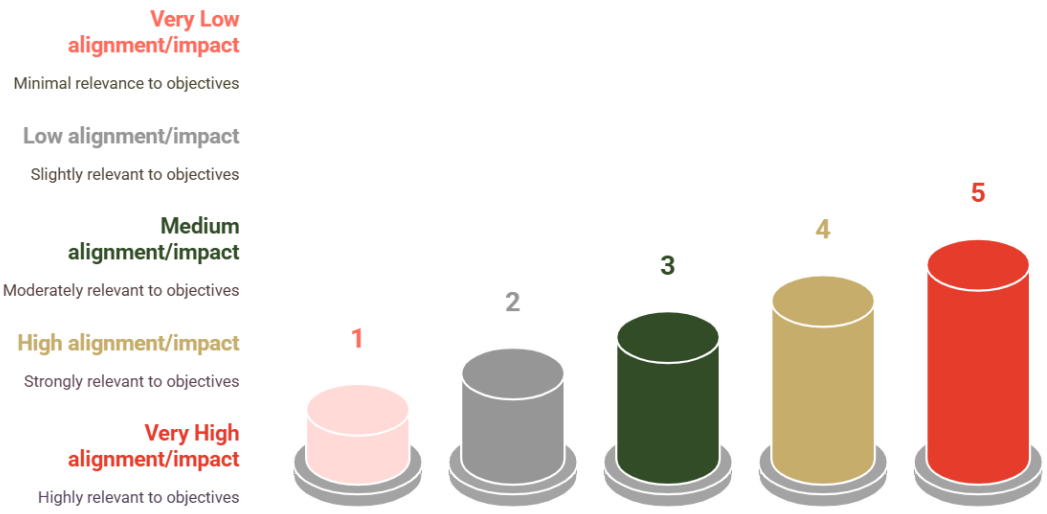


Figure 18: Project Assessment Model Scoring

The formula converts raw scores to percentage achievements:

- Score 5 = 100% of sub-criterion weight
- Score 4 = 75% of sub-criterion weight
- Score 3 = 50% of sub-criterion weight
- Score 2 = 25% of sub-criterion weight
- Score 1 = 0% of sub-criterion weight

The final weighted score determines the project's priority status:

- High Priority: 80-100 points
- Medium Priority: 60-79 points
- Low Priority: 40-59 points
- Not Recommended: Below 40 points

5.3.2.4.3 IMPLEMENTATION GUIDELINES

5.3.2.4.3.1.1 Assessment Process

- Each project must be evaluated against all criteria
- Scoring must be supported by verifiable evidence
- Assessments should be conducted by qualified evaluators

- Results should be documented and archived for reference

5.3.3 MONITORING & EVALUATION FRAMEWORK

The framework aims to achieve several key objectives that support effective spatial development within the Dr Beyers Naude Municipality:

- Monitor compliance between municipal spatial planning decisions and the SDF guidelines
- Track and evaluate development applications and their outcomes
- Support the Municipal Planning Tribunal in decision-making processes
- Monitor environmental conservation and biodiversity protection efforts
- Assess spatial transformation and integration progress
- Evaluate infrastructure development and service delivery alignment

5.3.3.1 KEY PERFORMANCE INDICATORS (KPIS)

5.3.3.1.1 DEVELOPMENT APPLICATION MONITORING

5.3.3.1.1.1 Performance Metrics:

- Number and percentage of development applications aligned with SDF objectives
- Types and distribution of development applications
- Processing timeframes for applications
- Compliance rates with zoning regulations

5.3.3.1.1.2 Data Source:

- Municipal Planning Department
- Development application records
- Zoning compliance reports

5.3.3.1.1.3 Frequency:

- Monthly tracking
- Quarterly reporting

5.3.3.1.1.4 Responsible Entities:

- Municipal Planning Department
- Development Control Unit

5.3.3.1.1.5 Required Actions:

- Implement standardized application tracking system
- Establish regular compliance review processes
- Create automated reporting mechanisms

5.3.3.1.2 MUNICIPAL PLANNING TRIBUNAL PERFORMANCE

5.3.3.1.2.1 Performance Metrics:

- Number of applications processed
- Average decision timeframes
- Appeal success rates
- Number of precedent-setting decisions made
- Consistency in decision-making

5.3.3.1.2.2 Data Source:

- Tribunal meeting minutes
- Decision records
- Appeal outcomes

5.3.3.1.2.3 Frequency:

- Quarterly assessment
- Annual comprehensive review

5.3.3.1.2.4 Responsible Entities:

- Municipal Planning Tribunal
- Planning Department Administration

5.3.3.1.3 SDF IMPLEMENTATION PROGRESS

5.3.3.1.3.1 Performance Metrics:

- Percentage of development aligned with spatial development priorities
- Implementation rate of identified projects
- Progress on spatial transformation initiatives
- Achievement of density targets in priority areas

5.3.3.1.3.2 Frequency:

- Biannual assessment
- Annual comprehensive review

5.3.3.1.3.3 Responsible Entities:

- Municipal Planning Department
- Infrastructure Development Division
- Office of the Municipal Manager (IDP, LED, PMS & Audit)

5.3.3.1.3.4 Required Actions:

- Regular review of implementation priorities

- Assessment of spatial development patterns
- Evaluation of catalyst project progress

5.3.3.2 REVIEW AND EVALUATION PROCESSES

5.3.3.2.1 ANNUAL EVALUATION

- Comprehensive assessment of implementation progress
- Review of KPI achievement
- Stakeholder consultation outcomes
- Identification of implementation challenges
- Recommendations for improvement
- Assessment for review requirements

5.3.3.2.2 FIVE-YEAR STRATEGIC REVIEW

- Complete framework effectiveness assessment
- Update of monitoring indicators
- Revision of implementation strategies
- Alignment with updated municipal priorities
- Long-term impact evaluation

6 CONCLUSION

The Dr Beyers Naude Spatial Development Framework offers a comprehensive vision for the sustainable, inclusive, and equitable transformation of the municipality's spatial landscape. Through a series of integrated strategic levers, the framework lays out a clear roadmap to redress historical imbalances, catalyse economic growth, and enhance the quality of life for all residents. Key highlights include:

Enabling Infrastructure for Connectivity and Service Access:

By prioritizing improvements in transport networks, water and sewer systems, and energy provision, the framework establishes a robust foundation for seamless interconnectivity. This infrastructure-led approach is vital for bridging gaps between urban and rural areas, ensuring that all communities benefit from improved access to essential services and economic opportunities.

Competitive Infrastructure Development:

The framework places a strong emphasis on the creation of world-class, competitive infrastructure that not only meets current demands but also attracts future investment. By leveraging innovative financing models and strategic planning, the municipality will focus on projects that enhance connectivity, reduce operational costs, and stimulate private sector engagement. This proactive approach ensures that infrastructure investments are both efficient and aligned with broader economic objectives, positioning Dr Beyers Naude as a regional hub for growth.

Integrating Urban and Rural Development:

Recognizing the interdependence of diverse communities, the framework is designed to enhance both urban centres and rural areas. By fostering cohesive development plans that leverage local strengths, the Dr Beyers Naude Spatial Development Framework aims to create balanced growth that not only generates jobs but also improves living standards across the municipality.

Sustainable Resource Management and Environmental Stewardship:

Committed to protecting its natural heritage, the framework integrates environmental sustainability into every aspect of spatial planning. Through responsible land use practices and careful management of natural resources,

the municipality will ensure that development does not compromise ecological integrity or the long-term well-being of its communities.

The translation of these strategic levers into tangible outcomes will depend on the effective implementation of a comprehensive land use regulation and planning framework. By aligning local development schemes with broader municipal spatial objectives and establishing a streamlined, transparent approval process, Dr Beyers Naude is set to become a model for integrated spatial planning.

Ultimately, the success of the Dr Beyers Naude Spatial Development Framework hinges on collaborative efforts between government, communities, and stakeholders. Ongoing monitoring and evaluation will be essential to adapt strategies as circumstances evolve. Through continued innovation, strong governance, and a shared commitment to its guiding principles, the framework lays the groundwork for a more prosperous, equitable, and resilient future for all residents of the Dr Beyers Naude Municipality.

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