RAY NKONYENI
MUNICIPALITY

2023-2027

SPATIAL DEVELOPMENT FRAMEWORK
DRAFT

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All statistical data contained in this report has been obtained from the Census 2001, 2011 data and 2016 Community Surveys supplied by Statistics SA unless stated otherwise.

MEC COMMENTS ON THE RAY NKONYENI 2022/23 SPATIAL DEVELOPMENT FRAMEWORK DATED 29 NOVEMBER 2022

MEC COMMENT	RNM MUNICIPALITY RESPONSE
The municipality has complied with Section 26 (e) of the Municipal Systems Act as well as Section 12 (1) and Section 20 of the Spatial Planning and Land Use Management Act, by developing and submitting the Spatial Development Framework (SDF) as an annexure to the Integrated Development Plan.	Noted.
It is requested that the municipality gazette the SDF as required by Spatial Planning and Land Use Management Act. The SDF should indicate spaces where planned location, inclusionary housing and densities for future housing development are to be located. While the municipality has provided clear quantification of infrastructure, there is no indication of infrastructural capacity for both present and future development. The municipality is requested to prepare Spatial Development Plan (SDP) as part of the SDF.	Noted, to be addressed.
The municipality submitted all strategic documents as required by the legislation however, disaster management information which includes hazard mapping was not properly aligned to the IDP and SDF.	Noted, to be addressed.
The municipality is advised to review its organisational structure to streamline its operations and ensure a fully functional fire and disaster management Centre. Capacity building for disaster management and fire services must be prioritized. The municipality need to prioritize the budget to replace ageing fire engines and vehicles.	Noted.
The municipality is commended on the well-articulated environmental analysis, and inclusion of environmental status in the IDP.	Noted.
The municipality is applauded for considering expanding landfill site, however when such processes commence, the environmental attributes are therefore to be integrated. Though the municipality has environmental and waste management strategies in place, however, these strategies should be implemented and managed properly for better environmental outlook of the municipality.	Noted.

REVIEWED BY:

DEPARTMENT OF DEVELOPMENT PLANNING SERVICES

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EXECUTIVE SUMMARY

The main purpose of the SDF is to guide the form and location of future spatial development within Ray Nkonyeni. It is a legislative requirement and has a legal status. In summary, the SDF has the following benefits:

- ✓ Facilitates decision making with regard to the location of service delivery projects and guides public and private sector investment.
- ✓ It strengthens democracy and spatial transformation and facilitates effective use of scarce land resources;
- ✓ It promotes intergovernmental coordination on spatial issues and serves as a framework for the development of detailed Land Use Management Scheme (LUMS).

The review process undertaken included the use of desktop information, stakeholder engagement through technical meetings, forums and media and the use of GIS.

The key defining features of Ray Nkonyeni Municipality includes the following: it covers an area of approximately 72km of coastline, comprising of 20 swimming beaches; It extends 60 kilometres inland covering a vast rural area under the leadership of nine traditional councils and is the most concentrated economic hub within Ugu district municipality with the main economic sectors being tourism and agriculture with some manufacturing occurring in Port Shepstone.

Port Shepstone is the major economic hub in the south coast and serves as the administrative centre for both Ray Nkonyeni and Ugu District. It serves as an external regional commercial centre for most of the areas around the northern Eastern Cape area. The Ray Nkonyeni Municipality is part of the Neighbourhood Development Programme where it has identified Port Shepstone as the project area.

The programme aims to unlock and sustain investment in marginalised areas by improving access to basic services and creating economic opportunities through investment in infrastructure and human development in strategic and spatial targeted locations (regional centres/ small towns) thereby contributing to economic growth, job creation and poverty reduction. It will also contribute to improving good governance and administration within municipalities.

1. INTRODUCTION

1.1. BACKGROUND

Ray Nkonyeni SDF is intended, in part, to comply with Section 26(e) of the Municipal Systems Act, Act No. 32 of 2000) as well as Chapter 4, Part E of the Spatial Planning and Land Use Management Act, which requires a municipality to prepare and adopt an SDF as a component of its Integrated Development Plan (IDP). Most importantly, the SDF is intended to facilitate the development of a spatial structure that promotes integrated development and enables an efficient delivery of services. It will give direction to future planning and development within the RNM.

The Constitution of the Republic of South Africa, (Act No. 108 of 1996) confers to municipalities major developmental responsibilities intended to improve quality of life people residing and/or working within a municipality's area of jurisdiction. An SDF therefore, forms part of the systems and procedures at the disposal of the municipality to perform on its developmental mandate and facilitate removal of spatial remnants of the apartheid past.

1.2. RAY NKONYENI LOCAL MUNICIPALITY

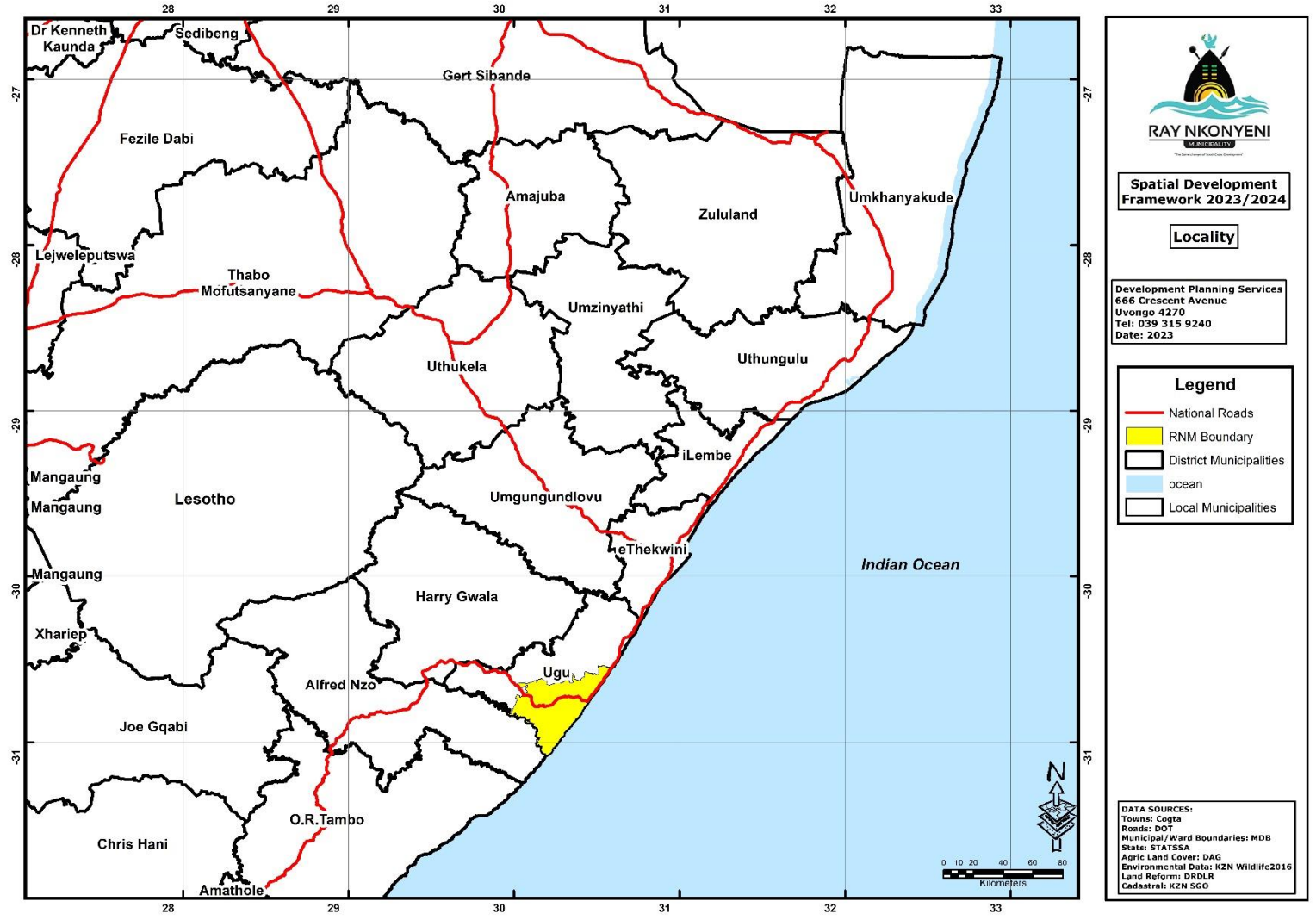
Ray Nkonyeni is a newly established Local Municipality which emerged as a result of the merger between the former Hibiscus Coast and Ezinqoleni Local Municipalities. It is a category B municipality and falls within Ugu District Municipality. It is commonly referred to as South Coast given its geographical location in relation to the southern coastal part of KwaZulu-Natal. The municipality has its administrative seat in Port Shepstone and Ezingolweni Town. It stretches along the coastal strip from Hibberdene to Port Edward covering 67km and about 60km into the interior primarily via N2 to Eastern Cape. The Indian Ocean borders the Eastern part of the municipality, while on the Southern part runs Umtamvuna River which is the boundary between KZN and the Eastern Cape.

Umzumbe Municipality borders the northern part, UMuziwabantu Municipality is on its north-eastern boundary and Mbizana Municipality is on the southern part. The municipality covers approximately 1594 km² in geographic area. The spatial location of the Municipality is an advantage as the N2 runs through it ensuring accessibility and linkage with both Ethekwini and the Eastern Cape. The main features of the local economy are tourism, commercial, agriculture and some limited manufacturing. Other economic activities include services, fishing, and craft. Though limited and more still needs to be done, however, there is some concerted effort to support SMME's and have recently supported establishment of their association. Through its Extended Public Works Programme (EPWP), the municipality provides gap job opportunities to many unskilled especially young people and this is implemented mainly through its infrastructure development and services programme. Ray Nkonyeni Municipality consist of 36 wards and eleven town centres which are:

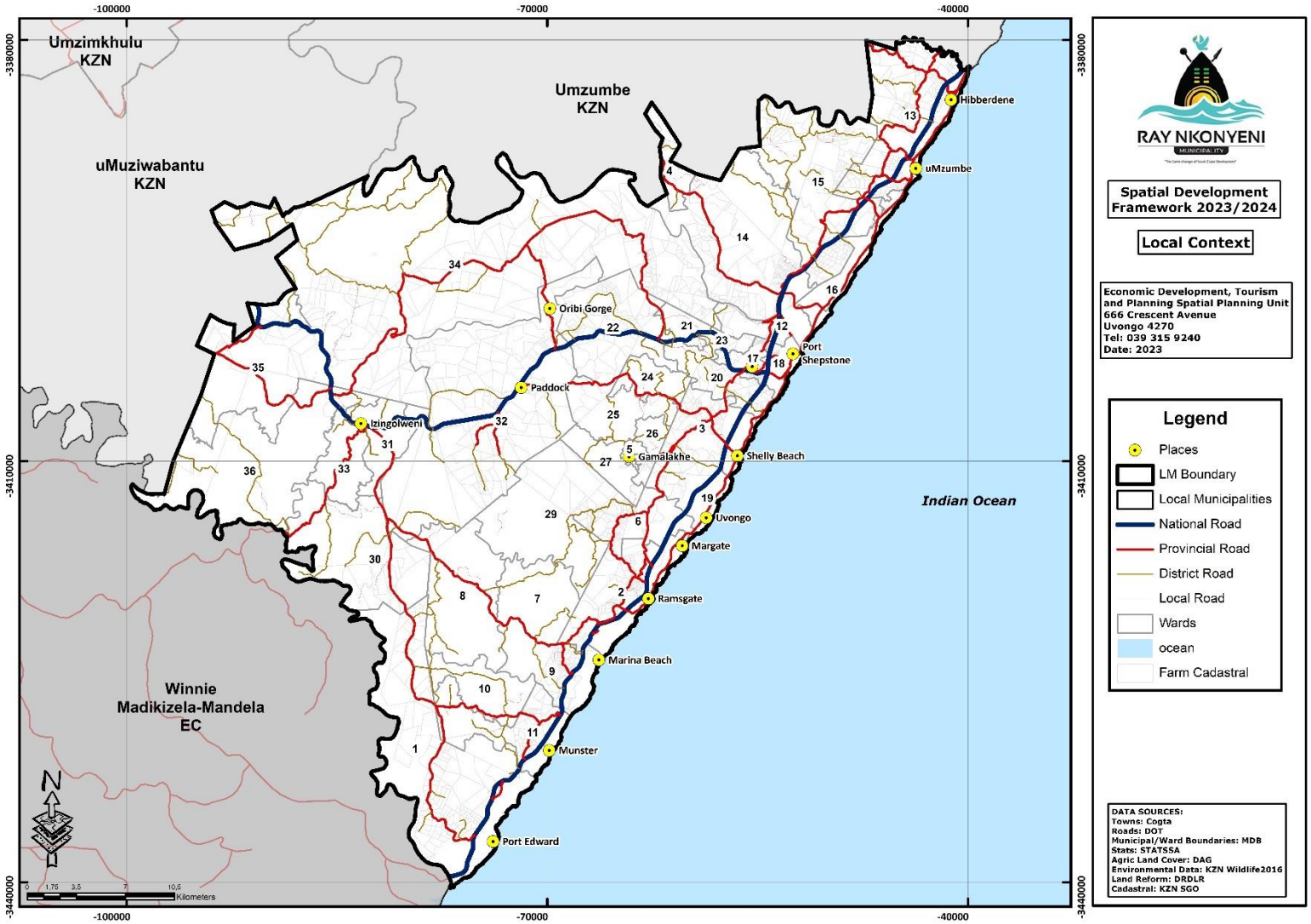
- ✓ Hibberdene;
- ✓ Port Shepstone;
- ✓ Shelly Beach;
- ✓ Uvongo;
- ✓ Sea Park;
- ✓ Margate;
- ✓ Ramsgate;
- ✓ Munster;
- ✓ South Broom;
- ✓ Port Edward; and
- ✓ Ezingolweni.

The inland of the municipality are mainly rural with farmlands and tribal areas. The farms are under private ownership while the tribal council areas are largely under the ownership of Ingonyama Trust Board. These traditional council areas are KwaXolo, KwaNzimakwe, KwaNdwalane, KwaMadlala, KwaMavundla, Lushaba, Vukuzithathe, Nkumbini and Qiniselani-Manyuswa. These areas are managed by the traditional chiefs (Amakhosi) who are assisted by Izinduna (Headman). Traditional land allocation practices prevalent within these areas create new dynamics in terms of the administration of this land.

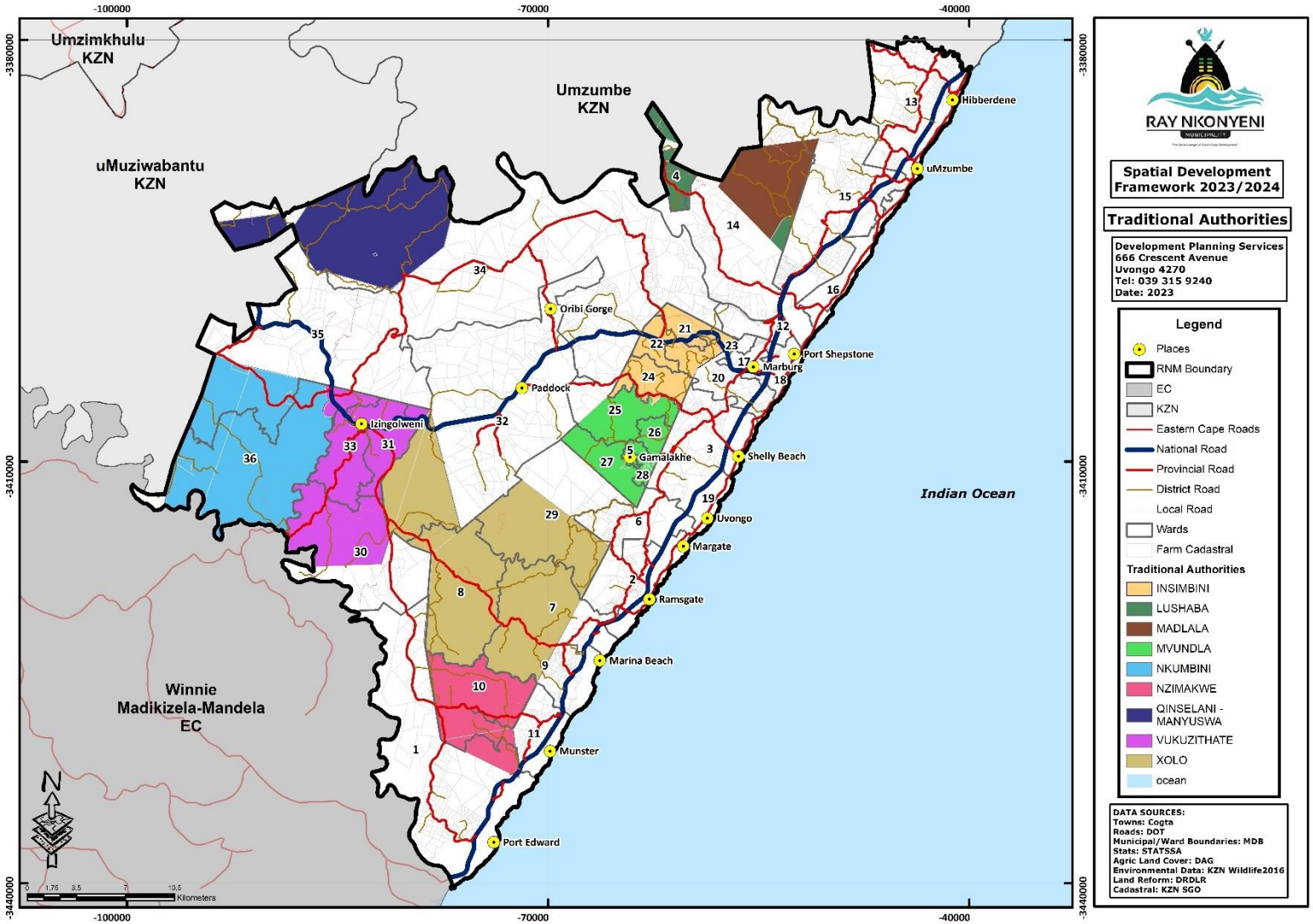
Map 1: Locality Map



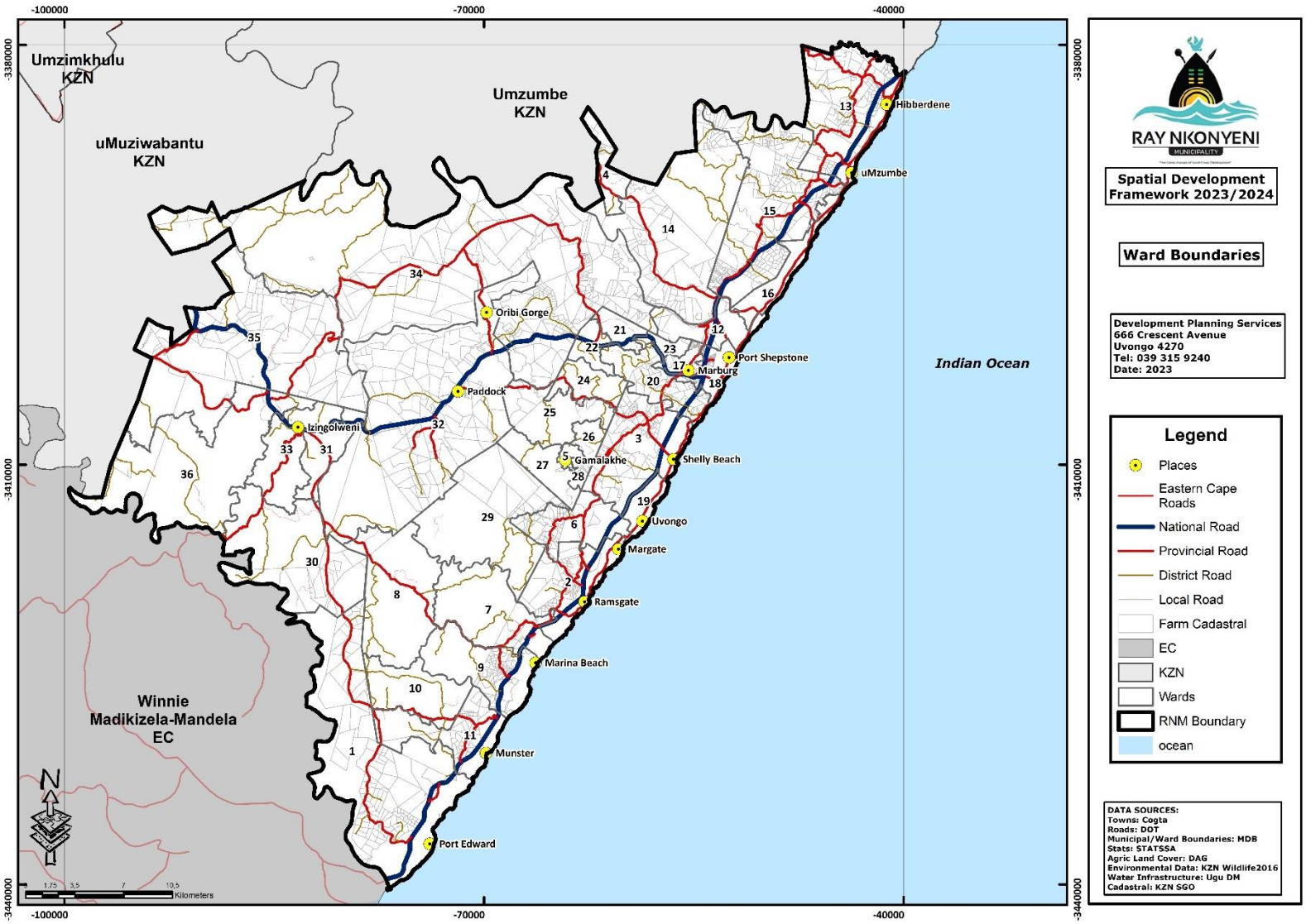
Map 2: Contextual Map



Map 3: Ray Nkonyeni Traditional Councils



Map 4: Wards Map



2. POLICY CONTEXT

Figure 1: Policy Context and Legislation

2.1. SPATIAL POLICY AND LEGISLATIVE CONTEXT

Since the introduction of the democratic dispensation in South Africa, the notion of spatial planning, given effect in the form of spatial development plans and spatial targeting, has gained momentum. This is the case in all spheres of government. This followed the realization by national government that the rural areas such as Ray Nkonyeni need attention in terms of development and proper management. Due to a failure by apartheid government to provide a relatively habitable environment in rural areas. In fact, much attention was paid on insensitive controls that were blended with the promotion of racial discriminatory laws that oppressed the majority of the rural population through Betterment Planning and Group Areas Act No 41 of 1950. At a national level, this focus first emerged within the context of the Reconstruction and Development Programme (RDP) and was given statutory emphasis through the Development Facilitation Act (DFA). Spatial targeting was first built into the Integrated Sustainable Development Strategy (ISRDP) which identified 13 nodal areas. The National Spatial Development Plan (NSDP) was introduced in the early 2000s and has had a profound impact in terms of spatial planning at a national level. It has since been replaced by the National Development Plan 'Vision 2030' (NDP).

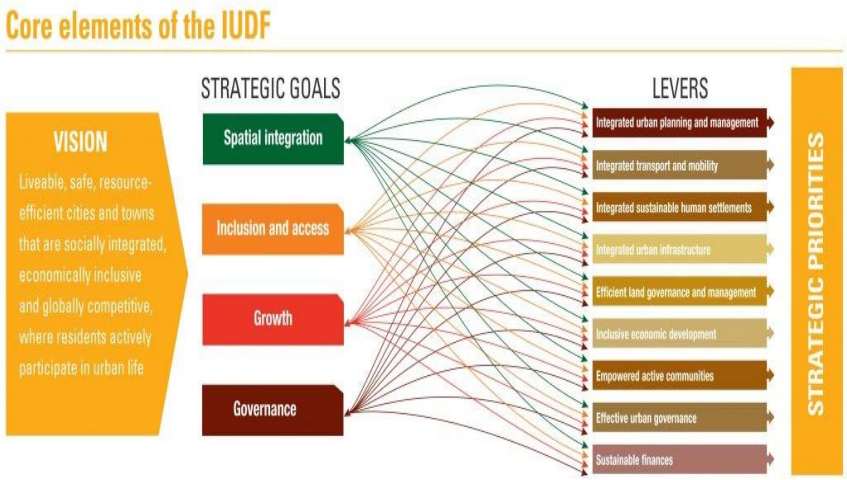
The NDP is now widely acclaimed as a blue print of the country in terms of development. On 6 May 2011, the Department of Rural Development and Land Reform published the Draft Spatial Planning and Land Use Management Bill for public comment. This was passed into law and ascended as legislation in August 2013 (Spatial Planning and Land Use Management Act No 16 of 2013 – SPLUMA). It replaced the Development Facilitation Act No 67 of 1995, Removal of Restrictions Act No 84 of 1967, the Physical Planning Act No 88 of 1967 and other laws. SPLUMA provides, inter alia, for a uniform, effective, efficient and integrated regulatory framework for spatial planning, land use and land use management in a manner that promotes the principles of co-operative government and public interest.

It provides for and determines development principles, compulsory norms and standards for land use management, promotes sustainable and efficient use of land. SPLUMA's overarching goal is to fulfil the constitutional mandate by spatially addressing the inequalities manifested in unsustainable settlement pattern which was inherited by the democratic government. SPLUMA also recommends the preparation of norms and standards which provide in-depth knowledge of land use, allocation and practices within the country. This will promote consistency and uniformity in processes and decision making within rural areas.

The Integrated Urban Development Framework (IUDF) is a policy initiative coordinated by the Department of Cooperative Governance and Traditional Affairs (COGTA). The IUDF seeks to foster a shared understanding across government and society about how best to manage urbanisation and achieve the goals of economic development, job creation and improved living conditions for the people.

Whereas the National Industrial Participation (NIP) Programme is a programme that seeks to leverage economic benefits and support the development of South African industry by effectively utilizing the instrument of government procurement. Operation Phakisa (OP) is aimed at growing and implementing an overarching intergrated ocean governance framework for sustainable growth of ocean economy that will maximise socioeconomic benefits while ensuring adequate ocean environmental protection and other sectors. Its focused on four areas: Oil and Gas Exploration (OG), Marine Transport and Manufacturing (MTM), Aquaculture, and Maritime Protection and Governance.

Figure 2: Core Elements of the Integrated Urban Development Framework



OP is in line with the goals outlined in the National Development Plan, to promote economic growth and to boost job creation. Efforts are made to ensure that all Operation Phakisa: Oceans Economy initiatives are prioritised and resourced accordingly. The Marine Phakisa concluded that the oceans have the potential to contribute up to 177 billion rand to GDP. For Ray Nkonyeni, it will impact pisitively since the sea is their primary blood of economy. South Africa adopted a set of global goals for international impact to end poverty, protect the planet, and ensure prosperity for all as part of a new sustainable development agenda. Each goal has specific targets to be achieved over the next 15 years, the 2030 Agenda for Sustainable Development;

- ✓ End poverty in all its forms everywhere;
- ✓ End hunger, achieve food security and adequate nutrition for all, and promote sustainable agriculture;
- ✓ Attain healthy life for all at all ages;
- ✓ Provide equitable and inclusive quality education and life-long learning opportunities for all;
- ✓ Attain gender equality, empower women and girls everywhere;
- ✓ Secure water and sanitation for all for a sustainable world;
- ✓ Ensure access to affordable, sustainable, and reliable modern energy services for all.
- ✓ Promote strong, inclusive and sustainable economic growth and decent work for all;
- ✓ Promote sustainable industrialization;
- ✓ Reduce inequality within and among countries;
- ✓ Build inclusive, safe and sustainable cities and human settlements;
- ✓ Promote sustainable consumption and production patterns;
- ✓ Promote actions at all levels to address climate change;
- ✓ Attain conservation and sustainable use of marine resources, oceans and seas;
- ✓ Protect and restore terrestrial ecosystems and halt all biodiversity loss
- ✓ Achieve peaceful and inclusive societies, rule of law, effective and capable institutions; and
- ✓ Strengthen and enhance the means of implementation and global partnership for sustainable development.

- ✓ The White Paper sets out South Africa's climate change response strategy to achieve the National Climate Change Response Objectives. These include effectively managing inevitable climate change impacts through interventions that build and sustain South Africa's social, economic, environmental resilience, emergency response capacity and make a fair contribution to the global effort. The efforts intends to stabilise greenhouse gas (GHG) concentrations in the atmosphere at a level that avoids dangerous anthropogenic interference with the climate system within a timeframe that enables economic, social and environmental development to proceed in a sustainable custom. This should be done in a manner that is consistent with the outlined principles, approach, which is structured around the strategic priorities such as risk reduction and management; mitigation actions with significant outcomes; sectoral responses; policy and regulatory alignment; informed decision making and planning; integrated planning; technology research, development and innovation; facilitated behaviour change; behaviour change through choice; and resource mobilisation. Local governments approach to climate change still exhibits various gaps that are preventing them from being particularly effective or innovative in actively dealing with climate change.

Ugu District, the need exits for operative municipal level policies and mechanisms that address the challenges and opportunities posed by climate change. However, the district has expressed various commitment initiatives in support Climate Change Respose. The rest of the policy and legislative framework in KwaZulu-Natal is shown in Figure above. The local government strategies such as the Spatial Development Framework are developed within the broader framework of these policy intents.

2.1.1. DRAFT KWAZULU NATAL PROVINCIAL SPATIAL DEVELOPMENT FRAMEWORK (PSDF) 2022- 2027

The Kwazulu-Natal Provincial Spatial Development Framework (KZN PSDF) represents the long-term spatial vision of the province to be consistent with and be formulated within the context of the National Spatial Development Framework. It is the spatial expression of the KZN Provincial Growth and Development Strategy (PGDS) and provides spatial context for proposed strategic interventions. It must guide the spatial dimension to achieve the goals and objectives of the PGDS in a targeted and spatial coordinated manner.

Part C, Section 16 of SPLUMA states that a PSDF must:

- provide a spatial representation of the land development policies, strategies and objectives of the province, which must include the province's growth and development strategy;
- indicate the desired and intended pattern of land use development in the province, including the delineation of areas in which development in general or development of a particular type would not be appropriate;
- coordinate and integrate the spatial expression of the sectoral plans of provincial departments;
- provide a framework for coordinating municipal spatial development frameworks with each other where they are contiguous;
- coordinate municipal spatial development frameworks with the provincial spatial development framework and any regional spatial development frameworks as they apply in the province; and

incorporate any spatial aspects of relevant national development strategies and programmes as they apply in the province.

A PSDF is therefore a tool for spatial transformation and development at a provincial level. It should paint a picture and outline a strategy for the attainment of the desired future within the existing policy framework and based on an in-depth understanding of spatial challenges and opportunities that characterize the province.

It is a territorially based mechanism for spatial governance and coordination and/or integration of the spatial dimension of sectoral policies. It addresses the tensions and contradictions among sectoral policies (i.e., conflicts among economic development, environmental management, and social cohesion policies). It creates a rational territorial organization of land uses and strengthen the linkages between them, to balance demands for development with the need to protect the environment and to achieve social and economic development objectives.

In terms of the spatial planning in KwaZulu Natal (KZN), the province has not developed a comprehensive PSDF. However, the province dealt with spatial issues within the Provincial Growth and Development Strategy (PGDS)-2011. KZN has made remarkable progress with the formulation of a Provincial Spatial Planning and land Use Management legislation as provided for in the SPLUMA.

The purpose of the draft KZN PSDF is to include an overview of the policy and legislative directives, and a summary of spatial challenges and opportunities of the province. It further presents the spatial proposals and includes the refinement of a long term spatial development vision indicating the desired spatial pattern in line with the development vision contained in the Provincial Growth and Development Strategy (PGDS). (PGDS). It is concluded with an implementation framework, which outlines the measures, approach and actions required to realise the provincial spatial development vision in a coherent and systematic way.

2.1.2. THE STATE OF THE NATION ADDRESS

The State of the Nations Address is imperative for all South Africans as it outlines government Programme of Action of government. President Cyril Ramaphosa delivered the SONA on the 9th of February 2023. The following is a summary of the country's action plan for the 2023/2024 year.

ANNOUNCEMENT	ACTION PLAN
Infrastructure	• Infrastructure South Africa has been allocated 600 million for project preparation, specifically in rural and under resourced areas. • In KwaZulu-Natal, 24 bridges are currently under construction and site preparation for another 24 bridges are being made. • The National Rail Policy was adopted to guide the modernisation and reform of the rail sector providing third party access to the rail network. • By January 2023, projects worth 232 billion rand were under construction and nearly 4 billion have been completed. The completed upgrades include road upgrades, human settlements, and the development of small harbours. • Regarding major developments, the SANRAL has awarded construction contracts over worth over 28 billion rand.
Climate Change	• Government will continue the transition towards the low carbon economy at the pace the country can afford and while ensuring energy security. • Through the Just Energy Investment Plan, over the next 5 years 1,5 Trillion rand will be invested in the economy in new frontiers i.e., green hydrogen, electric cars, and renewable energy.
	• Several projects are underway including the development of a new facility by Sasol Boegoebaai in Northern Cape, Free State, Limpopo, KwaZulu-Natal and in Gauteng.
Job Creation & Skills development	• The massive investments in renewable energy will create more job opportunities and stimulate the economy. • Government plans to strengthen the link between the skills that we develop and the skills the workplace needs. Furthermore, the National Skills Fund will provide R800 million to develop skills in the digital and technology sector.
Electricity	• Government to provide Eskom with additional funding to purchase diesel. This will combat the severity of load shedding as Eskom will be able to use diesel run plants when the system is under pressure. • Eskom has already secured 300MW from neighbouring countries through launching a programme which involved the purchasing of excess power from private generators. • Several energy projects will be implemented and are expected to provide over 9,000MW of new capacity overtime. • In some provinces the investment of new transmission lines and substations will be implemented. • The rollout of rooftop solar panels will be implemented. • A Minister of Electricity will be appointed and will work hand in hand with Eskom broad and management regarding the tackling of the load shedding crisis and ensuring the implementation of the Energy Action Plan without any further delays.
Agriculture	• The Department of Agriculture Land Reform and Rural Development and the Department of Health will address existing conditions for the cultivation of hemp and cannabis to allow outdoor cultivation and the collection of harvest from traditional farmers. • Approximately 140,000 small-scale farmers have received input vouchers to buy seeds, fertiliser, and equipment. This initiative has led to the cultivation of some 640,000 hectares of land. This year the aim is to provide 250,000 more vouchers to small-scale farmers.

Safety and Security	• The SAPS has been strengthened to prevent crime and improving the capacity of the National Prosecuting Authority and courts to guarantee perpetrators are brought to justice. This includes more police being placed on the streets and setting up specialised teams that will focus on specific types of crime. • Government will finalise the draft Public Procurement Bill to address weaknesses identified State Capture Commission and improve efficiency, transparency, and value for money. • Additional funding will be made available in this budget for the police, the NPA and the Special Investigating Unit to help tackle crime. • Further improvements have been made regarding the accessibility and functioning of Sexual Offences Courts and expand the network of Thuthuzela Care Centres. • Approximately R9 billion has been invested in women-led businesses by the Industrial Development Corporation.
Economic growth	• The Employment Tax Incentive has been expanded to encourage businesses to hire more young people in large numbers. • Through the Small Enterprise Finance Agency government plans to provide R1.4 billion in financing to over 90,000 entrepreneurs. • Government in partnership with the SA SME Fund is working collectively to create a R10 billion fund to support SMME growth. In addition, government is looking at providing R2.5 billion for the fund and for the balance of R7.5 billion to be raised from the private sector. • Through completing a comprehensive review of the work visa system, government will move quickly to implement the recommendations put forward. These include creating a more flexible points-based system to attract skilled immigration, applying a trusted employer scheme to make the visa process easier for large investors and streamlining application requirements.

2.1.3. THE STATE OF THE PROVICE ADDRESS

The State of the Province Address is vital as it outlines Programmes of Action of the province. Ms Nomusa Dube-Ncube delivered the SOPA on the 24th of February 2023. The following is a summary of the province's action plan for the 2023/2024 year.

ANNOUNCEMENT	ACTION PLAN
Energy crisis interventions	- A panel of energy experts will be appointed to help accelerate the implementation of the KZN Energy Master Plan. - The rollouts of rooftop solar panels to households in KZN will be implemented. - Commence interventions in the use of alternative energy sources which include tapping into the Ocean energy, tidal wave, biogas, hydrogen, and renewables. - Extend planned electricity connections to 25000 households through the INEP Grant from DMRE. A budget of 784 million rand has been made available.
Job opportunities and job creation	- The N2/N3 national roads upgrade programme will produce over 15,000 jobs. More than 50 billion rand will be spent on the upgrade programme. - The trade and Investment KZN in 2023 plans to attract greenfield investments totalling 8,3 billion rand which will create 3182 jobs, while facilitating brownfield investments of 661,3 million rand which will retain 6323 jobs. - 700 new permanent jobs and 1023 temporary construction jobs will be created by the Dube

	Trade Port Corporation through the attraction of private sector investment. - The value of major infrastructure investment in KZN are approximately 129 billion rand and job creation are 389000. In the medium term, major sector investments towards job creation will be 8,9 billion rand and 1000 jobs will be created. - More than 10000 employment opportunities will be created throughout KZN in housing projects. - The IDFC plans to provide business funding of 214 million and facilitate the creation of 2000 employment opportunities.
Economic growth and infrastructure development	- The Department of Economic Development Tourism and Environmental Affairs has tasked the Moses Kotane Institute with investigating the establishment of a KZN Wealth Fund to be put in place during the 2023 financial year. The revenue made will offer support to KZN expenditure, especially on infrastructural needs. - The Department of Transport has set aside 1,2 billion to fix the issue of potholes through pothole patching and road rehabilitation programme. - The KZN Department of Transport is implementing flood repairs using its own reprioritised budget of 2,91 billion. The Department has further received 580 million rand which will go towards flood damages from National Government - The Department of Public Works has finalised 14000 hectares of state land for housing. - In the first quarter of 2023 the 5,3 billion N2 EB Cloete Interchange will commence construction.
Black industrialist programme	- The KZNGBB plans to create 2250 jobs in Gaming and Betting industry. Furthermore, over 150-woman, youth, and people with disabilities through economic opportunities within gambling industry will be given opportunities.
Agriculture	- Through the Radical Agrarian and Socio-Economic Transformation, the agricultural sector will be transformed, and black farmers will be introduced into value-adding components of the agriculture sector. - There will be a rollout of agri-hubs located in various districts. 152 million rand has been allocated to the Department of Agriculture and Rural Development over the next 3 years. - The Department of Agriculture and Rural Development has set aside 10 million rand to support cannabis farmers.
Improving access to water and sanitation	- 7,5 million will be spent on the installation of boreholes in Msinga, uMvoti, and Equthu. - 30 million rand will be used on the installation of 28 solar driven boreholes with elevated tank stands and taps in the Harry Gwala district. - The Maphumulo Plant upgrade project will commence in March 2023. - The completion of the South Coast pipeline phase 2 is scheduled to finish in September 2023. - COGTA will provide support to municipalities to prevent funds from being taken back when people need basic services.
Healthcare	- The Department of Health will upgrade 4 district hospitals into regional hospitals. In addition, they will build 11 new clinics. A new modern hospital will also be built in the northern part of KZN. - More healthcare facilities will be added to the E-Health system that was introduced will decrease patients waiting and address issues around

	missing and damaged files as well as lower medico-legal claims.
Education and skill development	- In 2023, the Department of Education plans to build 12 new schools which includes a Maritime School of Excellence and an ICT school in Amajuba District. - The Coding and Robotics curriculum will be implemented in 26 schools at foundation phase and 211 at the intermediate phase. - The province aims to convert non-viable schools into learning and training centres or community colleges for artisanal and small business skills. - National Treasury has approved funds for the rollout of digital infrastructure in Amajuba, iLembe, uMkhanyakude, Zululand, King Cetshwayo, uMgungundlovu and uMzinyathi. - KZN is working with the Department of Communications and Digital Technologies and its entities is developing services in the Harry Gwala and Ugu District through the broadline Access Funds under the Presidential Employment Stimulus. - This year KZN will host the first e-sporting Olympic.
Crime and safety	- As part of a response to crime the Security Cluster will curb the proliferation of guns through raft measures. In addition, each department in KZN will contribute 10 million rand towards the fight against crime and provincial entities will do the same. - Government has approved a 5-year plan to tackle Gender Based Violence and Femicide. - Government will refurbish shelters, 50 victim friendly rooms, developing Gender Based Violence and Femicide App with a panic button and employ graduates that will be placed in community organizations, driving GBFV programmes through 10-million-rand funding from the Gaming and Betting Board. - The Department of Social Development will lead the implementation of the Provincial Drug Master Plan.

2.2. IMPLICATIONS FOR RAY NKONYENI SDF

The following implications can be drawn:

- ✓ Ray Nkonyeni does not appear prominently on the NDP. However, there are notable projects which are identified by NDP within the area. These are the development of N2 Toll Road, R61 and revitalization of the rail infrastructure.
- ✓ Ray Nkonyeni Municipality is characterized by a number of intrinsic environmental qualities which needs to be enhanced and maintained as such it is important to comply with all environmental laws such as the National Environmental Management Act No. 107 of 1998 (NEMA).
- ✓ The new PDGS identified Hibberdene, Port Shepstone, Margate/ Uvongo and Port Edward are identified as the Value Adding Areas.
- ✓ The coastal strip as the economic support area and Ezingolweni as Agricultural Investment and some parts of the inland as the social investment areas.
- ✓ Ray Nkonyeni is the main economic hub of Ugu District, as such there is eighteen nodes within Ray Nkonyeni that have been identified by the district SDF.
- ✓ According to the IUDF, a municipality with over 45 000 people is considered as an urban municipality. Ray Nkonyeni has over 100 000 urban population which implies that it is a medium size urban municipality. IUDF proposes an urban growth and management model premised on compact and connected cities and towns. The urban municipalities are advised to stick to the agreed integrated plans whereby decision-makers must stick to the developed long-term plans instead of continuously changing the plans when those in office change. The short-term goals include strengthening rural and urban linkages, controlling urban sprawl, sustainable human settlements through accelerating informal settlements upgrade and creation of livable and safe human settlements.

- ✓ In implementing the IUDF, Ray Nkonyeni is one of the municipalities that have made an application for the Integrated Urban Development Grant that will be used for provision of services in pror poor areas and establishing a Capital Expenditure Framework guided by the Capital Investment Framework.
- ✓ Ugu Climate Change Response has made several suggestions regarding how municipalities should respond to climate change. The responses are categorized in terms of municipal infrastructure, water resources, Terrestrial Biodiversity, Disaster Management, Agriculture, Tourism, Energy, Public Health and Economy. The most important responses in the context of the SDF are map vulnerable areas (flood lines, etc.) and implementation of development bans in highly vulnerable zones. The additional suggestions are relocation of existing development from areas of high risk (wetlands, flood risk etc.), vulnerability mapping and related management plans, protect and increase existing ecosystems services buffering against climate change impacts. Monitor and control alien plants and pests; improve buffers (ground coverage) to protect against increased runoff from more intense storms.
- ✓ Operation Phakisa's mandate in terms of the ocean economy suggests that the role of government should be to reducing illegal and unregulated activities in the ocean space and Reducing human health and environmental risks to pollution with results by 2017.SMA

3. CROSS-BORDER ALIGNMENT ISSUES

"Cadastral boundaries do not necessarily conform to the characteristics of land, the natural environment, residential activities, economic activities and natural phenomena traverse's municipal, provincial and international boundaries. All municipalities do not possess the required resources to provide services to communities e.g. water. Hence the aim of this objective is to ensure that spatial planning is aligned to allow government organisations to take advantage of comparative advantages offered within an area. This also refers to cross boundary provision of services such as education facilities, which can be utilised by communities residing in two municipalities. This allows for cost effective provision of services and is applicable to the provision of civil services, social services and economic opportunities. Alignment of initiatives will also prevent conflicting initiatives and land uses to be implemented on opposite sides of a boundary i.e. mining activities versus tourism due to pristine natural environment." (KwaZulu-Natal PGDS, 2011, p131 – 132)

As per the National and Provincial policies and legislation (MSA-S26 (d), MSA Regs S2 (4) (h), municipalities are required to provide a clear indication of how the SDF is aligned with the planning of neighbouring municipalities. Ray Nkonyeni Local Municipality has a mandate to ensure that its IDP is in compliance with the planning legislation and policies to give effect to the development of an SDF as spatial representation of the IDP. The municipal SDF, in turn, directs and guides strategic investments that are developmental and beneficial within Ugu District Municipality and across neighbouring district municipalities as well as local municipalities.

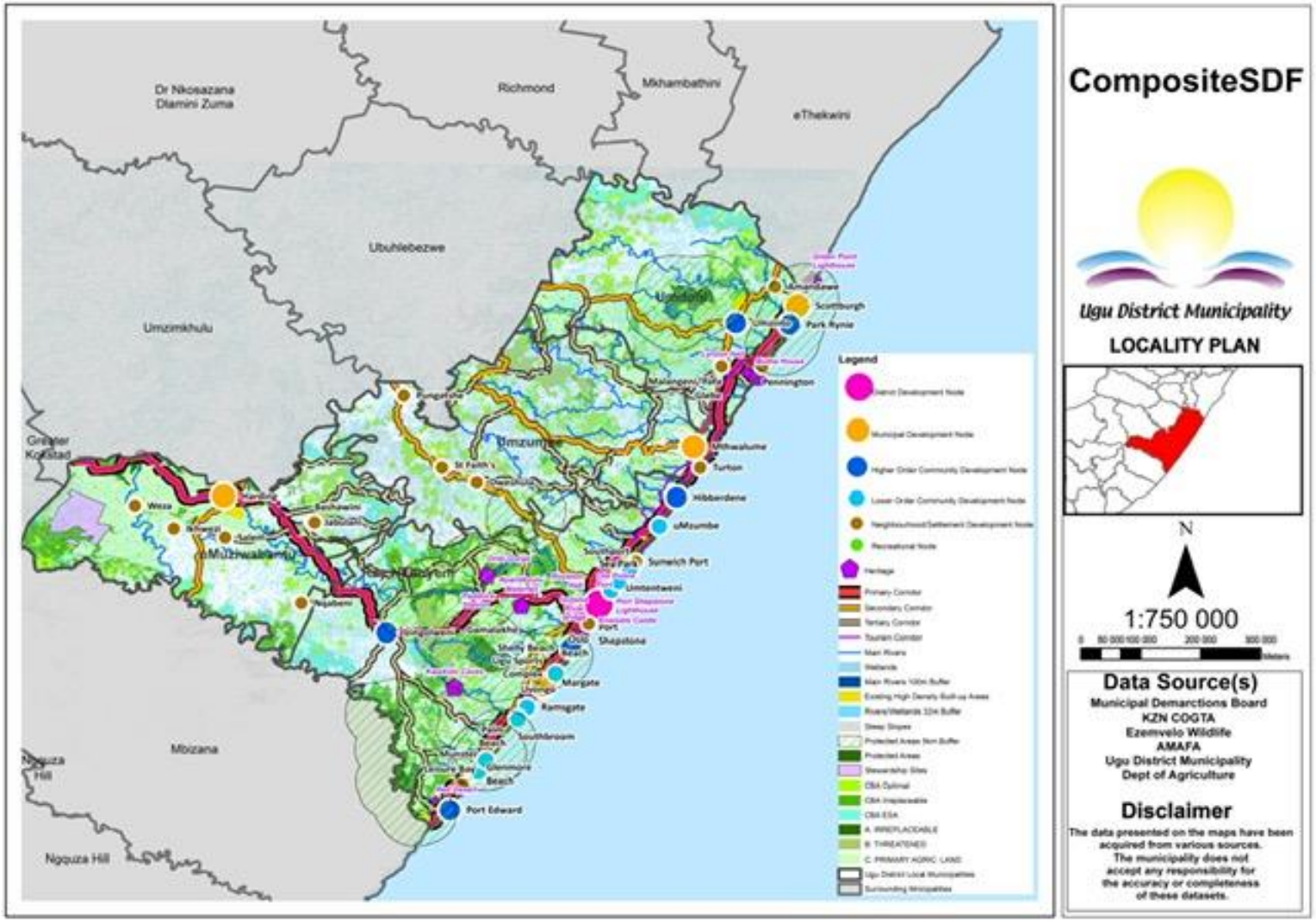
It is further reiterated that Ray Nkonyeni Local Municipality forms an integral part of a larger system of local governance and regional economy. It also influences development in the adjoining regions. Cross-border planning issues have become more prevalent and significant. The focus is on strategic or shared development issues that would benefit from a joint approach, and engaging with the relevant neighbouring authorities to explore joint operational potential. This section is thus intended to ensure that there is no disharmony between proposals that are suggested by Ray Nkonyeni Local Municipality's Spatial Development Framework and its neighbouring municipalities as Ray Nkonyeni Local Municipality is the economic powerhouse of Ugu District.

3.1. UGU DISTRICT SDF

Ray Nkonyeni is an economic powerhouse of Ugu District Municipality. The latter has developed an SDF as part of their IDP. Ideally, the district SDF should provide a framework for the formulation of local municipality, deal with cross-boundary issues and spatial implications of the exclusive powers and functions of the district municipality. As such , any inconsistencies in the spatial planning process between the two entities should be eliminated and a greater coordination promoted. The Ugu SDF identifies a hierarchy of nodes within Ray Nkonyeni and make a district perspective on these, as follows:

- ✓ District Development Node – Port Shepstone
- ✓ Municipal Development Node – Margate
- ✓ Higher Order Community Development Node – Port Edward, Hibberdene, Uvongo and Ezinqoleni
- ✓ Lower Order Development Nodes- Gamalakhe, Ramsgate, Southbroom, Sunwhich port and other coastal towns along R612.
- ✓ Neighbourhood Settlement Nodes – all the traditional council areas which include KwaXolo, Mavundla, Lushaba, KwaMadlala, etc.
- ✓ Heritage sites which also play a significant role in terms of promoting Tourism in the district – Oribi Gorge, Nyandezulu Waterfall, KwaXolo Caves
- ✓ Stewardship programmes for protection of the biodiversity species in Port Edward.

Figure 3: Ugu District SDF, 2021



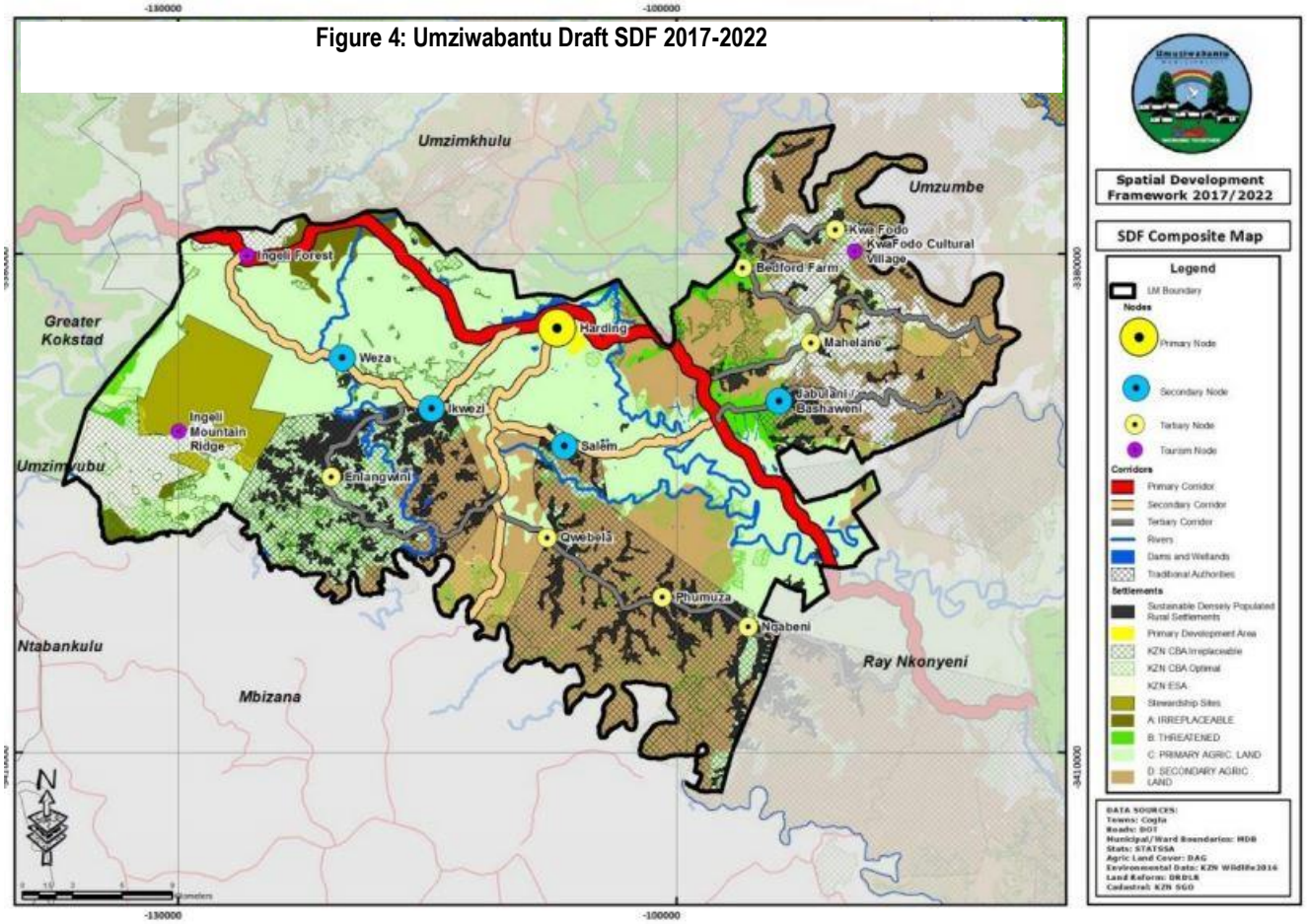
3.2. NEIGHBOURING LOCAL MUNICIPALITIES

3.1.1. UMUZIWABANTU LOCAL SDF

The following alignment issues between Ray Nkonyeni and Umuziwabantu will need to be taken into consideration: -

- Primary Corridor: Umuziwabantu SDF identifies the N2 which traverses both Municipalities. This serves as both the activity and economic corridor for the three municipalities.
- Primary Agriculture: Umuziwabantu Municipality identifies the opportunity for agriculture which borders the municipality. This aspect is being acknowledged on both Ray Nkonyeni and Umuziwabantu.
- Environmental Conservation and/ Conservation Corridor: there is also environmental conservation uses bordering the Umuziwabantu Local Municipality which should be considered through the use of buffering around the environmental sensitive environments.
- Land scape corridors linking the coast and the berg occur from Ray Nkonyeni to Umziwabantu and beyond.

Figure 4: Umziwabantu Draft SDF 2017-2022

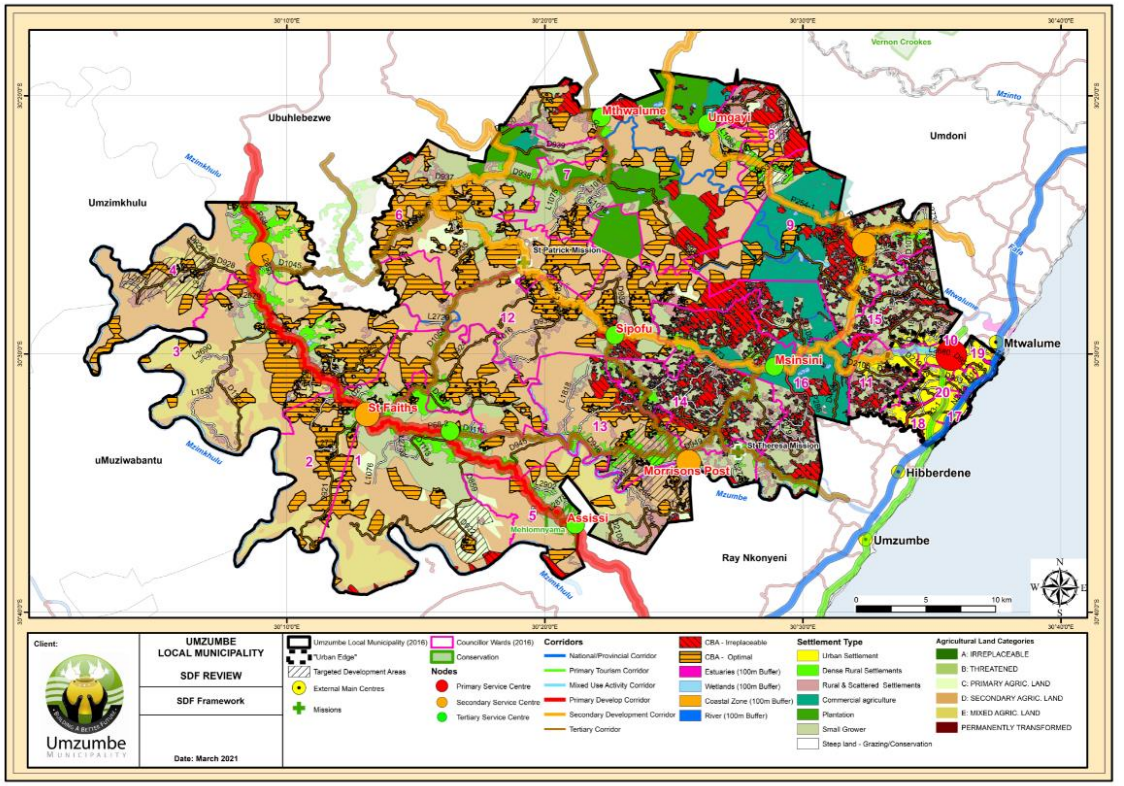


Source: Ugu Draft SDF, 2021

3.1.2. UMZUMBE LOCAL SDF

Umzumbe Municipality is located on the north-east of Ray Nkonyeni Municipality. It is a predominantly a rural municipality which is also considered to be a peripheral to the economy of Ray Nkonyeni Municipality. The key alignment issues include the following:

- The N2 route linking both municipalities is identified as a primary corridor.
- Primary east-west corridors link the coast to St Faiths in Umzumbe LM. This takes on the form of the P68, which connects St Faiths, Dweshula and Assissi in Umzumbe, to Port Shepstone. In addition, the P286 (which forms an important route through the central part of Umzumbe to the north) connects Msinsini in Umzumbe to Hibberdene in Ray Nkonyeni.
- Specific attention should be drawn to the proper management of the coastal strip and associated development along the coast. The linkage and coordination of tourism activities along the coastal tourism is also a matter of importance.
- The urban part of Umzumbe is Mtwalume which stretches all the way down to the Hibberdene urban area in Ray Nkonyeni. This may pose conflict with Ray Nkonyeni spatial landscape because the adjoining settlements are very different between this part of the boundary.
- The other bordering areas have identified small growers (subsistence agriculture), biodiversity priority 1 areas and rural settlements. These will need to be harmonized with the areas that are found within the cross border of Ray Nkonyeni.
- The Mehlomnyana NR occurs on the border of the Ray Nkonyeni LM and Umzumbe. Protection of this area is required from both Municipalities.



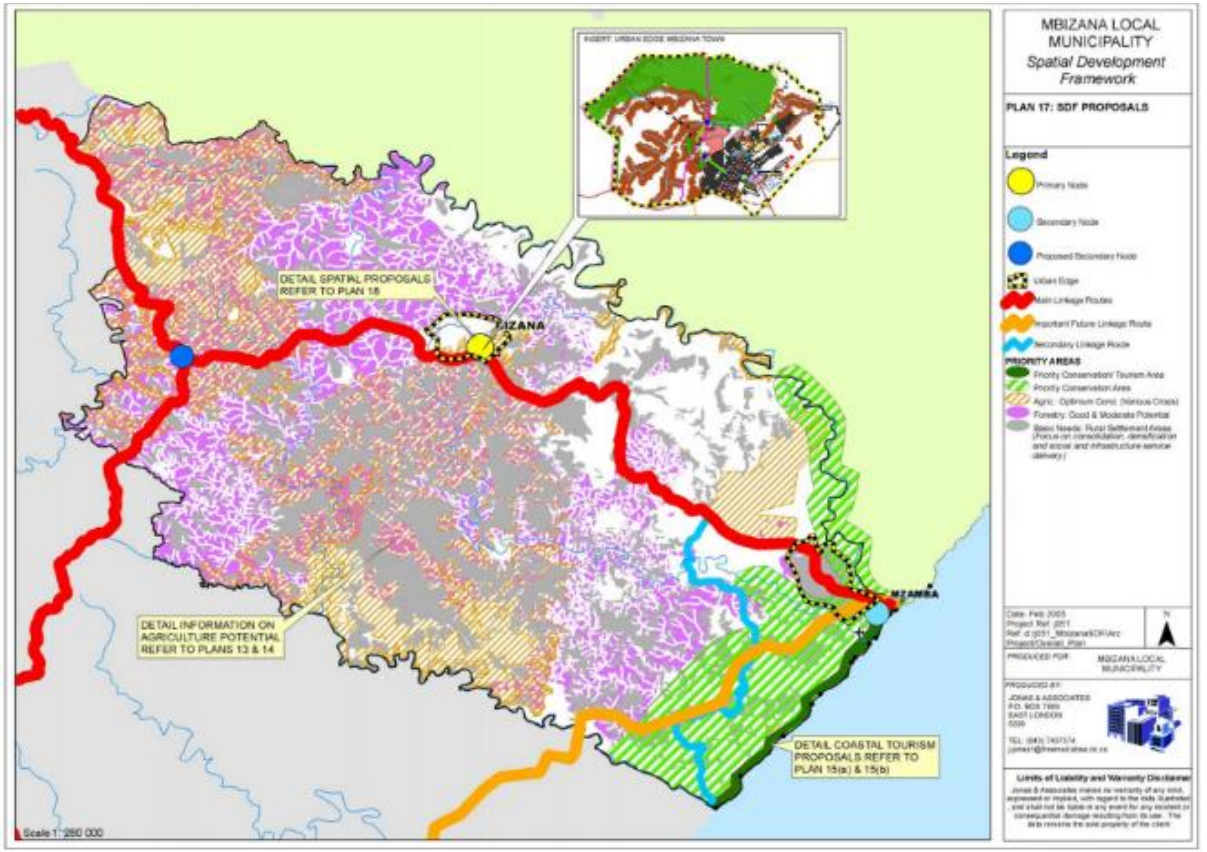
3.1.3. MBIZANA LOCAL SDF

Mbizana Local Municipality is predominantly rural and comprises of Bizana town as a centre. It is one of the areas that heavily depend on Ray Nkonyeni for the agglomeration of commercial and social facilities which are found within it. These include the nearby Port Edward and Port Shepstone. Mbizana Municipality exists within the administrative boundaries of Alfred Nzo District Municipality, Eastern Cape Province. According to the income leakage study that was undertaken by Alfred Nzo District Municipality a number of rural areas and small towns within the northern Eastern Cape depend on Ray Nkonyeni LM for commercial services.

This study noted a number of municipalities under Alfred Nzo that depend on Ray Nkonyeni LM for retail purposes these include; Umzimvubu, Tabankulu and Mbizana Local Municipalities. Bearing in mind that these areas share the physical boundaries, the following are the key issues for alignment and harmonization at a spatial planning point of view: -

- Priority conservation areas – Both municipalities share the declared nature reserve which is Umtamvuna. The SDF for Mbizana has recognized the importance of conservation within the area that covers the Umtamvuna area.
- Agricultural optimal condition – Mbizana also identified agricultural opportunities within the border of this municipality and Ray Nkonyeni.
- Important future linkage road – Mbizana SDF.

Figure 5: Mbizana SDF



- Identified the proposed N2 toll road that will connect Ray Nkonyeni within Eastern Cape as an important future linkage road. This route is currently known as R61 and it is very important for both municipalities as it plays a key role for linking KwaZulu-Natal and Eastern Cape Provinces.

3.3. IMPLICATIONS FOR RAY NKONYENI SDF

Ray Nkonyeni forms part of a larger system of local governance and regional economy; it is influenced and also influences development in the neighbouring areas. Cross-border planning issues have become more prevalent and significant. The focus is on strategic or shared development issues that would benefit from a joint approach, and engaging with the relevant neighbouring authorities to explore joint working potential. The implications can be drawn as follows:

- Most SDF's identify the N2 as a National/ Provincial Corridor, which is an important link to major economic areas. Opportunities exist to locate mixed use developments at key road intersections along the N2.
- Some of the municipalities are located along the coast, which is biodiversity corridor, and are thus subject of a common coastal management initiatives managed at a District level.
- There are massive opportunities to extend the coastal tourism from Ray Nkonyeni to Umzumbe on the north and Mbizana towards the south with beach related activities being the major products and services.
- Greater Port Shepstone is a Regional Economic Hub of the southern KwaZulu-Natal. All the municipalities that share the borders with it are dependent on as a service centre.
- Most Municipalities identifies areas for agricultural activity and environmental conservation which should be taken into consideration during development. Development within the municipality should not pose any adverse impacts on the environment or agricultural activity or vice versa.
- Tourism plays a significant role in the economic growth of the municipalities which also strengthens the role of the development corridors traversing the municipalities, particularly Ray Nkonyeni, Umziwabantu and Umzumbe Municipalities.

4. RAY NKONYENI WITHIN THE REGIONAL CONTEXT

4.1. INFLUENCE OF RAY NKONYENI ON EASTERN CAPE

Ray Nkonyeni (particularly Port Shepstone) is a regional service centre that also provide services to the northern Eastern Cape. The strategic location of Ray Nkonyeni Municipal area in relation to the province of Eastern Cape implies that there may be trading activities that take place between these two areas. These areas exists with a number of small towns and the individuals within these areas commute to Port Shepstone for retail and commercial services which are not found within their areas.

4.2. UGU CATCHMENT

Ray Nkonyeni is the main catchment area with the highest population threshold and a service centre Ugu DM. The majority of the municipalities within Ugu District are mainly rural with limited commercial and business activities within it. The commercial centres outside of Ray Nkonyeni are very small and these include Scottsburg, Harding and Umzinto. These centres cannot cater for all the social and commercial needs for the area as the result there is a huge dependency of Ray Nkonyeni for most of the services that are not found within these areas.

ROLE OF N2 AND R61

The N2 and R61 provide primary north-south linkages. The N2 also links Port Shepstone with Kokstad as an east-west linkage. It is regarded as a generator for growth, particularly between Port Shepstone and Harding. Development along the coast has grafted along the N2 due to the routes national significance. N2 links Ray Nkonyeni with Scottsburg, Durban airport and the Metropolitan area of eThekwini to the North. Spatial penetration of economic growth to the west of the N2 and R61 remains weak, with the exception of Marburg. In the future both urbanization and economic growth are likely to focus on the N2, interchanges, and growth inland of this is unlikely on any scale. The N2 can be seen as the main contributor of the organic growth and development within the Ray Nkonyeni Municipality.

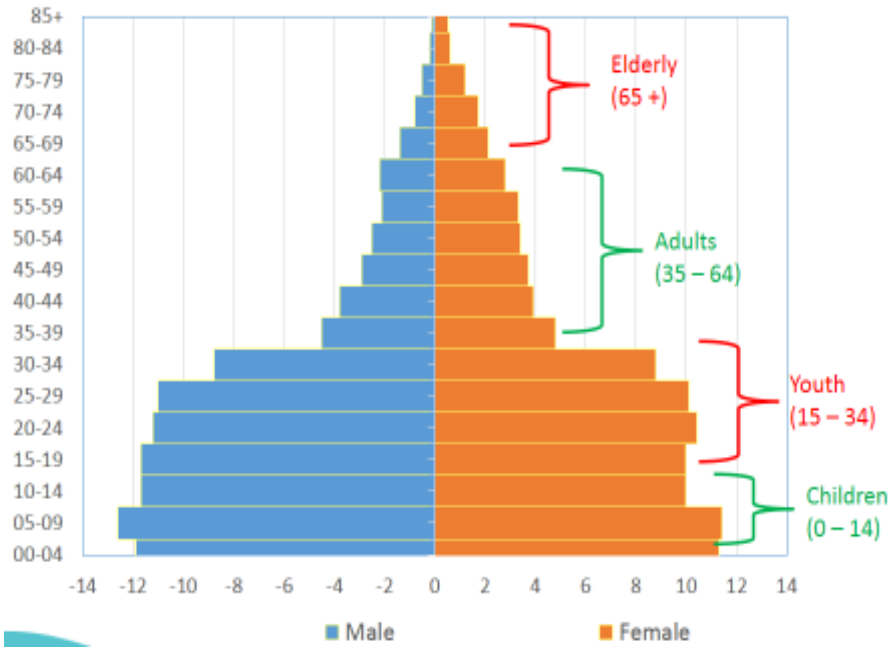
4.3. RAY NKONYENI AND COASTAL ECONOMY

Ray Nkonyeni is home to a number of coastal towns, estuaries and blue flag status beaches. It is a success story in terms of coastal tourism within the province of KwaZulu-Natal as it has gained a lot of popularity of the years.

5. DEMOGRAPHIC ANALYIS AND SPACE ECONOMY

5.1. SIZE AND STRUCTURE OF THE LOCAL POPULATION

Figure 6: Sizes and Structure of the Local Population



Source: Statistics SA – Community Survey 2016

Ray Nkonyeni has a total population of 348 553 and approximatly 90 280 households which has substantially increased over the years. RNM has the highest population concentration within the Ugu DM. The dominance of Ray Nkonyeni in terms of population is due to its role as an economic hub of the district which also attracts the labour force. Population breakdown by racial groups, is generally representative of the trend in rural KwaZulu-Natal where African population group represents more than 91% in the Ugu District and 82% in the Ray Nkonyeni Municipality.

5.2. POPULATION PROJECTIONS

Table 1 below provides population projections for the Municipality for the next 5 years and from it, it can be deduced that the population of the Municipality is expected to continue to grow at a rate of 1.6% and more. The expected population of the Municipality in the next 5 years if the rate in which it grows remains at 1.6% will be approximately 408 513.

Table 1: Ray Nkonyeni Population and Household Projections for the next 5years

Projection Variable	Projected Population	Future Population	Future Households
Base Year: 2023 Base Population: 377 344 Growth Rate (%):1.6 Average: Household size (2016): 3.8	2024	383 382	100 890
	2025	389 516	102 504
	2026	395 748	104 144
	2027	402 080	105 810
	2028	408 513	107 503

Table 2 below provides population projections for the Municipality for the next 30 years and from it, it can be deduced that the population of the Municipality is expected to continue to grow at a rate of 1.6% and more. The expected population of the Municipality in the next 30 years if the rate in which it grows remains at 1.6% will be approximately 510 174.

Table 2: Ray Nkonyeni Population and Household Projections for the next 30 years

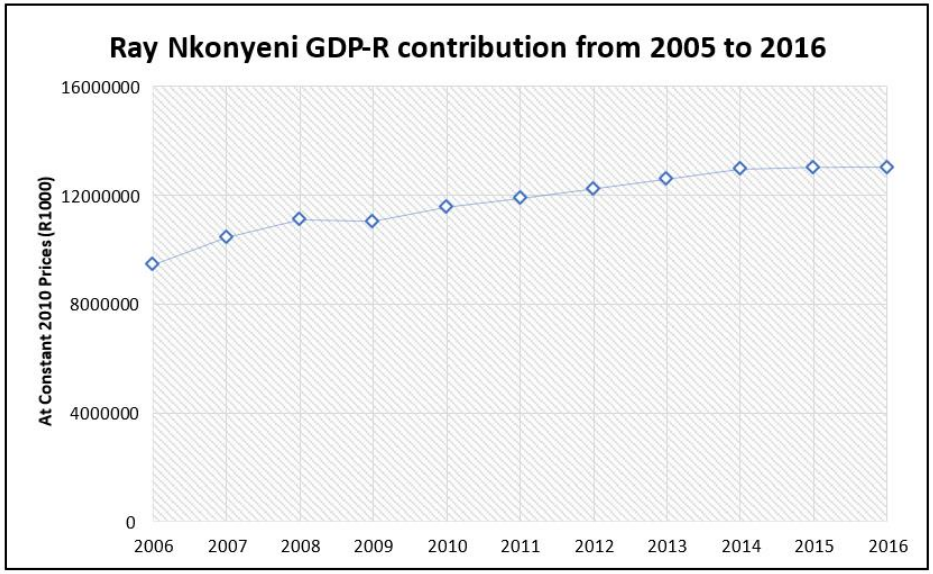
Projection Variable	Projected Population	Future Population	Future Households
Base Year: 2023 Base Population: 377 344 Growth Rate (%):1.6 Average: Household size (2016): 3.8	2024	371 402	100 890
	2029	402 080	109 224
	2034	435 292	118 246
	2039	471 248	128 013
	2044	510 174	138 587

As much as it is important to ascertain whether the Municipality's population is growing and the manner in which it is growing, it is equally crucial to examine the patterns in household growth as this directly impacts on the need for services. As such, the table provides a 30 years projection for household growth in the Municipality if the overall population growth rate of RNM remains at 1.6%.

According to the 2016 Community Surveys, the number of households in Ray Nkonyeni is estimated to be 90 280 with an average household size of 3.8. The projections below indicate that the number of households is expected to grow to 138 587 in the year 2044. Such increase in both population and household size simply means that there is an increased need for services such as water, electricity and sanitation, amongst many.

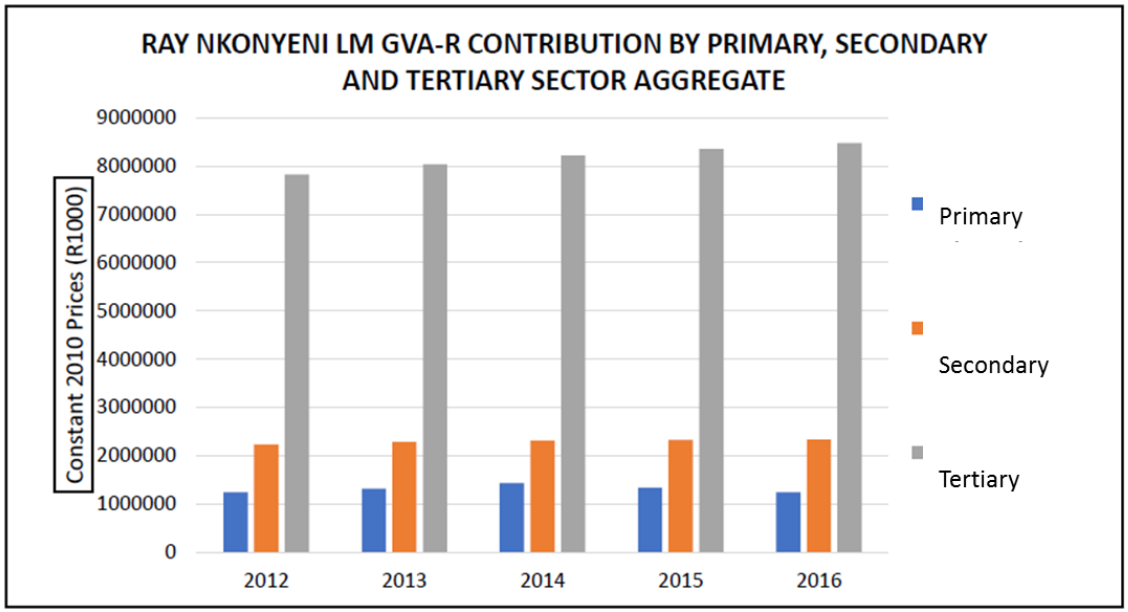
5.3. SIZE AND STRUCTURE OF THE LOCAL ECONOMY

According the Local Economic Development (LED) Strategy, the economy of the local municipality is well developed with Port Shepstone and Margate as its major towns having well-established and serviced areas for light-to-medium industries and commercial service centres. The municipality"s Gross Domestic Product (GDP) was estimated at R 13 billion in 2016 accounting for 61 percent of the district GDP estimated at R 21.4 billion followed by Umzumbe municipality (20%), Umdoni municipality (13%) and Umuziwabantu municipality (6%). Thus, Ray Nkonyeni is the core contributor to the district"s economy. Graph 20 in the LED Strategy shows that Ray Nkonyeni municipality has had a steady increase since 2005 with a sharp drop experienced during the global crises in 2008/2009.



Graph 16: Ray Nkonyeni GDP Contribution from 2005 to 2016

(Source Local Economic Development Strategy -2018-2022)



Graph 18: RNM GVA - R Contribution by Primary, Secondary and Tertiary Sector Aggregate Source: Globl Insight (2017)|

(Source Local Economic Development Strategy -2018-2022)

According to Graph 18 in the LED Strategy, it shows that the tertiary sector is the dominant sector within the municipality seeing a steady increase from 2012 to 2016. This is then trailed by the secondary sector which has also seen a somewhat steady increase since 2012. The primary sector however is an area of key concern showing an overall decline in GVA-R contribution since 2012 perhaps as a major result of the drought severely affecting the district which ultimately affects overall agricultural production. This is of key concern as it is anticipated to continue dropping and further impacting on other related sectors such as the manufacturing industry.

From the analysis, it can be estimated that the economy of the local municipality will continue to be well developed with Port Shepstone and Margate as its major towns having well-established and serviced areas for light-to-medium industries and commercial service centres.

It is also estimated that the tertiary sector will continue to be the dominant sector therefore contributing to the increase of employment over the next years in services which may involve the transport, wholesaling and retailing, or may involve the provision of a service, such as tourism, accommodation, catering, entertainment, communication, finance, insurance, real estate, business services, community, social, personnel services and general government.

There is a an imbalance grouping of the primary, secondary and tertiary sectors within the municipal area which can be elaborated as follows:

5.3.1. PRIMARY SECTOR

The primary sector of the economy makes direct use of natural resources. This includes commercial and subsistence farming. Commercial agriculture is the second largest sector with RNM. The most significant shift in the economic profile of the municipality has been the decline of the primary sector giving way to the tertiary sector that is now the leading sector. This is due to recent reports outlining that agriculture has declined to a point where KZN as a whole has become effectively a net importer of agricultural products. This has affected the municipality in terms of its GDP. This clearly points to the diminishing agricultural production and food security. Commodities that are directly linked to the primary sector commodities, i.e. timber manufacturing are experiencing decline. Food, beverages and tobacco are the biggest contributors of employment in manufacturing in the province. The range of agricultural products points to the great agricultural potential of this region, attributed to good climate conditions, soil potential and the entrepreneurial spirit of the people. Some of the outstanding features of the agricultural sector at RNM especially along the coastal belt:

- A fifth of all bananas eaten in South Africa are produced here;
- Sugar cane growing and milling has taken place in the region since the 1890s;
- A range of niche market products, such as cut flowers, nuts and vegetables are also produced here;
- Livestock farming and poultry farming are extensive together with crocodile breeding; and
- Timber farming sector produces Pine, Gum and wattle which are processed by some saw mills.

Subsistence Agriculture within the municipality involves small farmers who grow vegetables, dry beans, sweet potatoes and amadumbe. Most of the produce is for home consumption and is mainly practised in the hinterland of the municipality. Small sugar cane growers (SSG) farmers in the hinterland face a number of challenges which includes amongst others, steep topography, no irrigation systems, less mechanisation, poor yields and lack of financial back up. RNM soils are shallow, and this limits plantation as most products need deep soil to enable good growth.

A majority of black farmers do not have codes for their yields at the sugar mills and rely on big sugar cane growers and this has proved to be a failure. Some Black farmers have leased their land for sugar cane growing but end up with next to nothing in terms of profit. With the current political climate regarding land issues, land ownership and land rights commercial farming is negatively affected. If people are uncertain of their rights, they simply stop to invest in land. The pending closure of the Umzimkulu Mill will increase the input costs, as delivery distances to the Sezela mill will increase on average fourfold putting more financial pressure on the inland farming community, as well as on welfare grants that will be needed to counter the loss in income when the mill closes down.

There is an Agri-Park which is proposed within Ezinqoleni area. This is considered important for the agricultural sector. The Department of Rural Development and Land Reform defined an Agri-park as 'a networked innovation system of agro-production, processing, logistics, marketing, training and extension services, located in a District Municipality. As a network it enables a market-driven combination and integration of various agricultural activities and rural transformation services'. The Department further stated that the Agri-park comprises three distinct but interrelated basic components which are:

- The Farmer Production Support Unit (FPSU) -a rural small-holder farmer outreach and capacity building unit that links with farmers and markets. The FPSU does primary collection, some storage, some processing for the local market, and extension services including mechanisation;
- The Agri-hub (AH) - a production, equipment hire, processing, packaging, logistics, innovation and training unit;

- The Rural Urban Market Centre (RUMC). The RUMC has three main purposes;
- Linking and contracting rural, urban and international markets through contracts;
- Acts as a holding-facility, releasing produce to urban markets based on seasonal trends; and
- Provides market intelligence and information feedback, to the AH and FPSU, using latest Information and communication technologies.

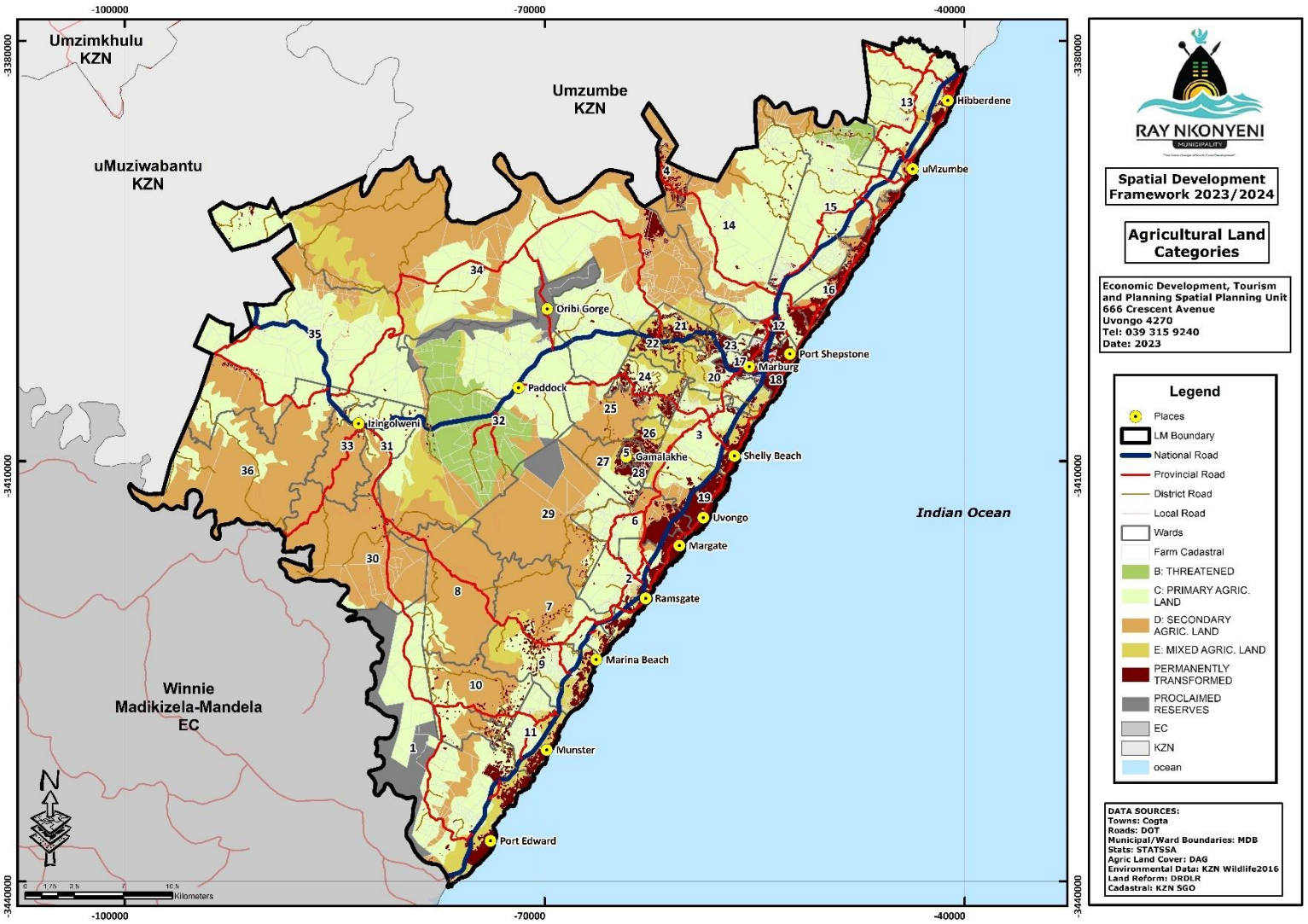
The guiding principles that have been adopted by the Department in terms of identification of Agri-Parks are:

- One Agri-Park per District Municipality;
- Agri-parks must be farmer controlled;

- Agri-parks must be the catalyst around which rural industrialization will takes place;
- Agri-parks must be supported by government (10 years) to ensure economic sustainability;
- Strengthen partnership between government and private sector stakeholders to ensure increased access to services (water, energy, transport) and production on the one hand, while developing existing and create new markets to strengthen and expand value-chains on the other;
- Maximise benefit to existing state land with agricultural potential in the provinces, where possible;
- Maximise access to markets to all farmers, with a bias to emerging farmers and rural communities;
- Maximise the use of high value agricultural land (high production capability);
- Maximise use of existing agro-processing, bulk and logistics infrastructure, including having availability of water, energy and roads; and
- Support growing-towns and revitalization of rural towns, in terms of high economic growth, high population growth over past 10 years and promote rural urban linkages.

Figure 7: Agri-Hubs Facilities

Map 5: Agricultural Land Categories



Map 6: Agricultural Land Act, 1970 (Act No 70 of 1970)

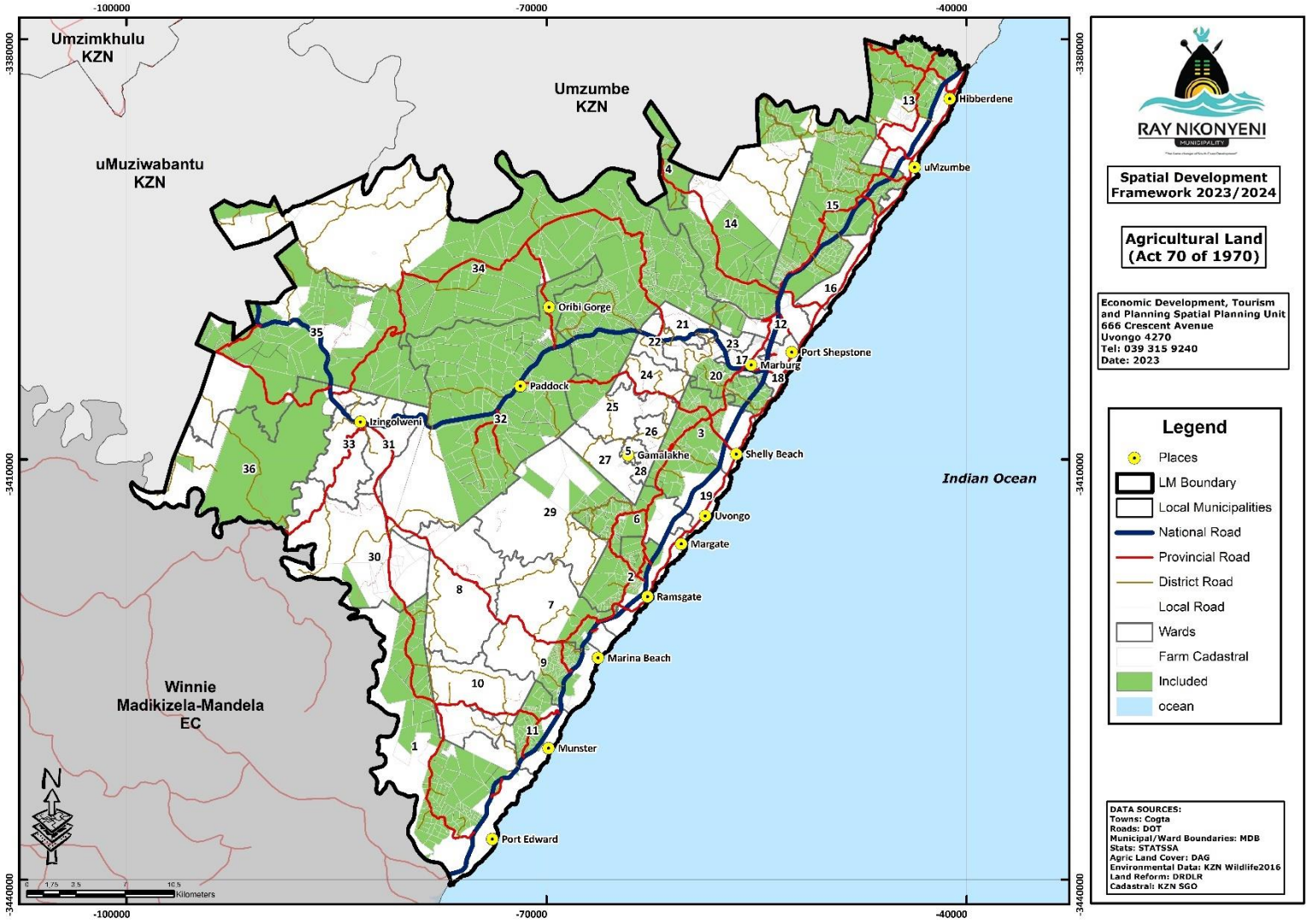
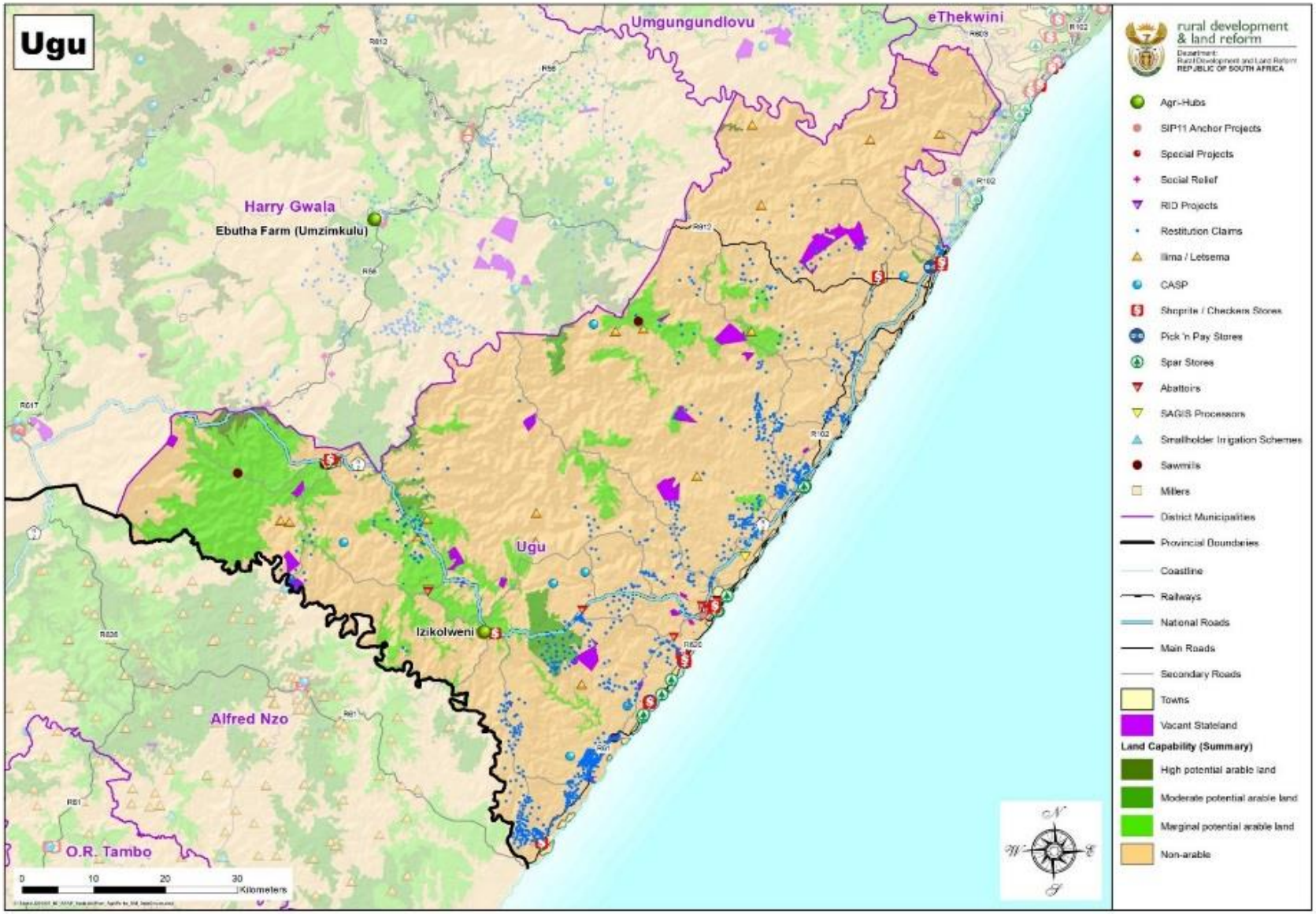


Figure 8: Ugu District Agri-Parks



Source: DRDLR, 2016

5.3.2. SECONDARY SECTOR

The secondary sector produces manufactured goods. The manufacturing industries that aggregate, pack, package, purify or process the raw materials. Manufacturing businesses within the municipality are located in the Port Shepstone/ Marburg industrial area. It is important to note that a third of the manufacturing businesses also relate to Margate suggesting that this area should receive some prominence in terms of future industrial sector planning. It is further reported that this sector is limited to the coastal strip and primarily the Marburg and Margate areas. It is not envisaged that the formal large scale manufacturing sector will expand into the rural areas (although development at Izotsha would provide easier access to job opportunities to the rural workforce). Majority of the firms, with the exception of larger clothing and textile and timber related industries, are small (75%) and produce only for the local market. Less than a quarter of firms targets international markets. Most of these firms are concentrated along the coastal strip, primarily the Marburg and Margate areas.

Table 3: Major Manufacturing Industries in Ray Nkonyeni

AREA BASIC	DESCRIPTION	TYPE OF INDUSTRY
Marburg Industrial	This is the only major industrial zone in the District. It has been developed on the N2 to the south-west of the Port Shepstone CBD. Over the years, it has extended on what is referred to as Izotsha. The land is not flat, but the topography is reasonable for industrial development. A large variety of manufacturing and service sector businesses are located in the area.	Most industrial sectors are represented in the area. Furniture, textile and clothing and food seem to dominate. Sizes range from small service industries to major plants.
Margate Quarry Industry	The industrial area is located close to the entrance to the NPC Quarry immediately to the west of the N2 as you approach the Margate turnoff from Durban. The area is separated from neighbouring developments either by the N2 or vacant land.	The number of concrete block, brick and moulded concrete block manufacturers benefiting from the location in relation to the Quarry.
Margate Airport Industrial	This industrial area is located on the northern end of the runway of the Margate airport. It is located on relatively flat land. The area is home to only a handful of industries.	Construction related and furniture manufacturing firms are located in the area.

The following key challenges are identified within the municipal manufacturing sector:-

- Manufacturing business are limited to only the coastal strip;
- Lack of available developed land to locate and establish modern industries;
- There is limited impact on regional developments;
- Manufacturing activity within the inland rural areas of the municipality is invariably limited;
- There is less than a quarter of firms targets international markets; and
- It is not envisaged that the formal large scale manufacturing sector will expand into the rural areas.

5.3.3. TERTIARY SECTOR

The tertiary sector or service sector is the third of the three economic sectors of the three-sector theory. The tertiary sector of industry involves the provision of services to other businesses as well as final consumers. Services may involve the transport, distribution, sale of goods from producer to a consumer, as may happen in wholesaling and retailing, or may involve the provision of a service, such as tourism, accommodation, catering, entertainment, communication, finance, insurance, real estate, business services, community, social, personnel services and general government. Tourism is one of the key economic drivers in the municipality. The entire coastline of the South Coast is a primary attraction and the Tourism KwaZulu-Natal website lists not fewer than 29 beaches for this part of the Province. The Oribi Gorge on the north-eastern part of the municipality provides better organized, marketed and committed products. Margate is the main tourist attraction in the municipality (37%) and is characterised by holiday resorts, accommodating more holidaymakers than residents. The town is also the economic centre for the strip of coastline almost completely made up of accommodation, holiday homes and tourist-related establishments. The regional airport is also located in Margate. Other tourist attraction towns in the Municipality include Shelly Beach (19%), Ramsgate (23%) and Uvongo (21%). These towns feature a wide range of tourist -oriented businesses, including restaurants, bars, clubs, movie houses, golf courses, clothing shops, museums, and various types of accommodations. According to Ugu South Coast Tourism, 2015 the demand in terms of occupancies seasons. Statistics reveal that spring season account for 70, 8%, Summer 84.9%, Autumn 79, 0% and Winter 72.2%. In average 77% account for peak holiday periods

5.3.4. ESTIMATES OF ECONOMIC ACTIVITIES AND EMPLOYMENT TRENDS

From the analysis of the economy of Ray Nkonyeni Municipality it can be estimated that the over the next five years, the economy of the local municipality will continue to be well developed with Port Shepstone and Margate as its major towns having well-established and serviced areas for light-to-medium industries and commercial service centres.

It is also estimated that the tertiary sector will continue to be the dominant sector therefore contributing to the increase of employment over the next years in services which may involve the transport, distribution, sale of goods from producer to a consumer, as it may happen in wholesaling and retailing, or may involve the provision of a service, such as tourism, accommodation, catering, entertainment, communication, finance, insurance, real estate, business services, community, social, personnel services and general government

5.4. SMME AND CO-OPERATIVES

SMMES sector is recognized nationally and world-wide as a major player in economic development and growth especially for the developing world. The SMMEs sector represents an important component of the economy of the Ray Nkonyeni Municipality and plays a major role in the job creation, economic growth and poverty alleviation. As per the UGu District Growth and Development Strategy, 2012; the informal economy contributes 6% of employment and the figure is steadily growing. One of the strategic objectives put forward by the Ugu DGDS, 2012 is to “ensure effective assistance and support to SMME`s, Cooperatives and Informal Trading”. It is highlighted that SMMEs, Cooperatives and Informal Trading have the dual benefit of creating employment and ditributing wealth and are key in expanding the key productive sectors. In addition, in order to ensure effective assistance and support to these structure, the following interventions should be put to place:-

- Implementing an SMME support strategy, improving access to markets, supporting small-scale mining and farming including processing and creating linkages to commercial businesses,
- Provision of Nguni cattle;
- Implementation of the provincial livestock improvement project, and
- Developing SMME incubators and mentorship programmes.

5.5. POVERTY ASSESSMENT

The experience of poverty is multi-dimensional. While the inability to access income remains one of the most obvious expressions of poverty, definitions of poverty typically refer to the absence of capital such as land, access to natural resources, or to the importance of social, intellectual capital and even the climate of democracy as well as security necessary to enhance the capabilities of the poor and excluded. Further, there is an additional institutional dimension of poverty that recognises that the poorest in the nation are those who are unable to access state assistance designed to provide a social safety net because of institutional failure. Poverty is located across the full range of settlement types from deep rural areas to inner cities. It is thus the concern of all municipalities.

In as much as the municipality is ranked number one amongst the other four local municipalities in uGu District in terms of economic services, poverty is still high. This is due to unemployment which is also attributed by the fact that many people lack the necessary expertise to be employed. Many people on the other hand are employed in the informal sector with very low wages yet they have many members in the family to support. An important indicator of poverty is the number of households with an income below the Minimum Living Level (MML). According to surveys conducted at Ray Nkonyeni, the Municipality has a total of 83 843 households of which 21 552 (26%) do not have any form of income. These households depend on grants and can be classified as indigents who are most probably falling on the poverty datum line.

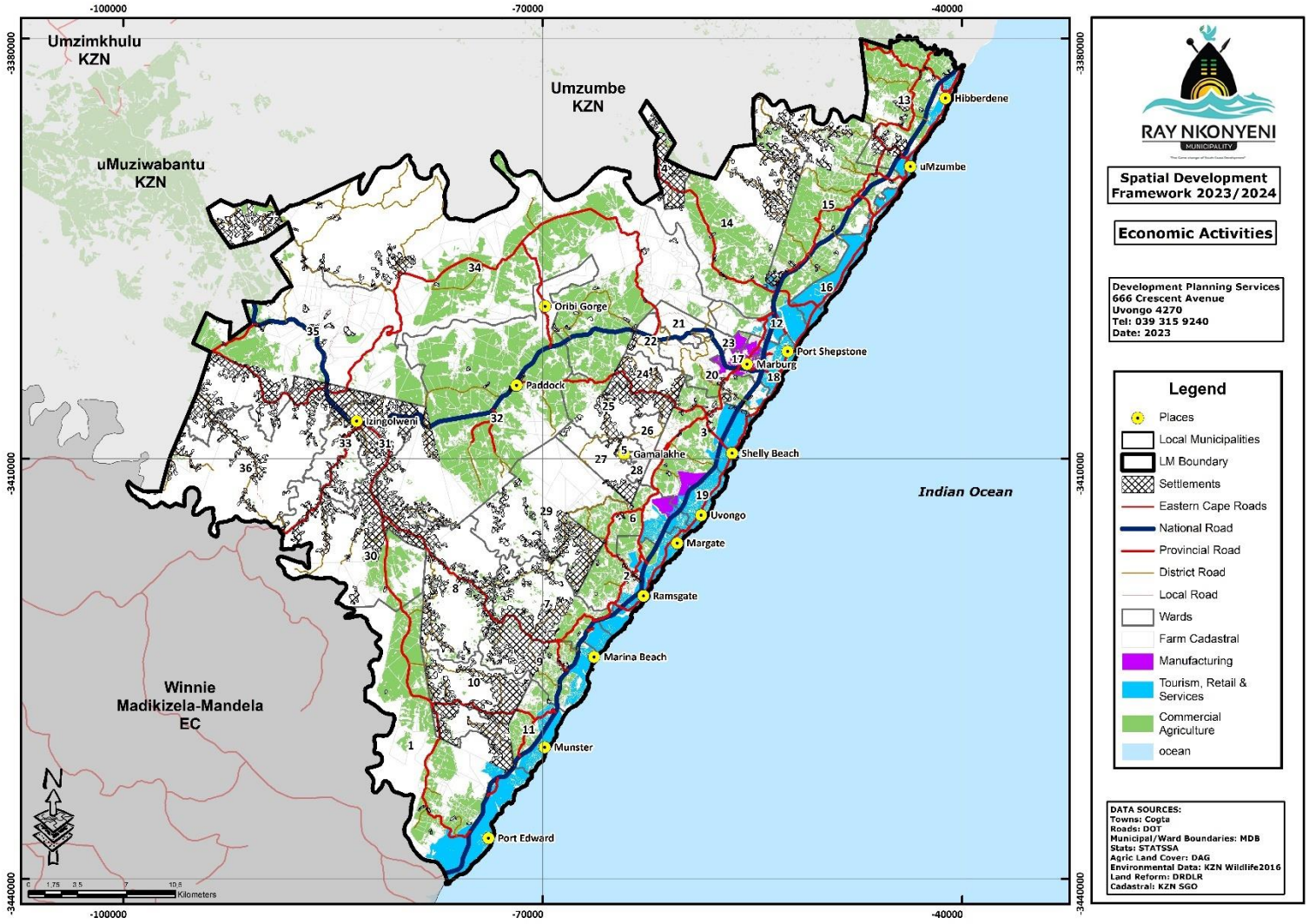
5.6. TRANSPORT SECTOR

The transport sector at present, and will in future, fulfil an important role in the development of Ray Nkonyeni Municipality. This sector has a number of distinct components that should be considered in future economic development planning for the Municipality. The key components of this sector are:

- ✓ Air transport,
- ✓ Rail transport,
- ✓ Road freight transport,
- ✓ Public transport,
- ✓ Boating

The municipality is located along the N2, in proximity to the City of Durban, along the functional route to OR Tambo International Airport and has railway infrastructure (though currently only used for cargo). This augers well for accessibility of the municipality.

Map 7: Ray Nkonyeni Space Economy



6. INFRASTRUCTURE ASSESSMENT

6.1. BULK WATER

6.1.1. BULK WATER INFRASTRUCTURE

The water supply zones in the municipality are defined as below however a further analysis is still required where a number of interconnections exist to allow certain areas to be supplied from more than one bulk supply source. Ugu District Water Services Development Plan (WSDP) was prepared in 2008 and as such is due for review. The water supply to the District is derived from dams, rivers, ground water and bulk purchases from Umgeni Water. The northern coastal strip (i.e. Craigburn, Umzinto and Umtwalume) is serviced by potable water purchased in bulk by Ugu from Umgeni Water. The southern coastal strip is serviced by water extracted from a number of rivers and dams which is then treated at several of treatment plants owned by Ugu before being distributed. This plan noted that the major infrastructure for water that exists within Ugu District includes:

- Dams 4;
- Pipelines 3 896 km (estimate);
- Reservoirs 150;
- Pump Stations 120;
- WTW 16; and
- WWTW 10.

The current water resource capacity is estimated at 1094.85 Ml which is broken down as follows:

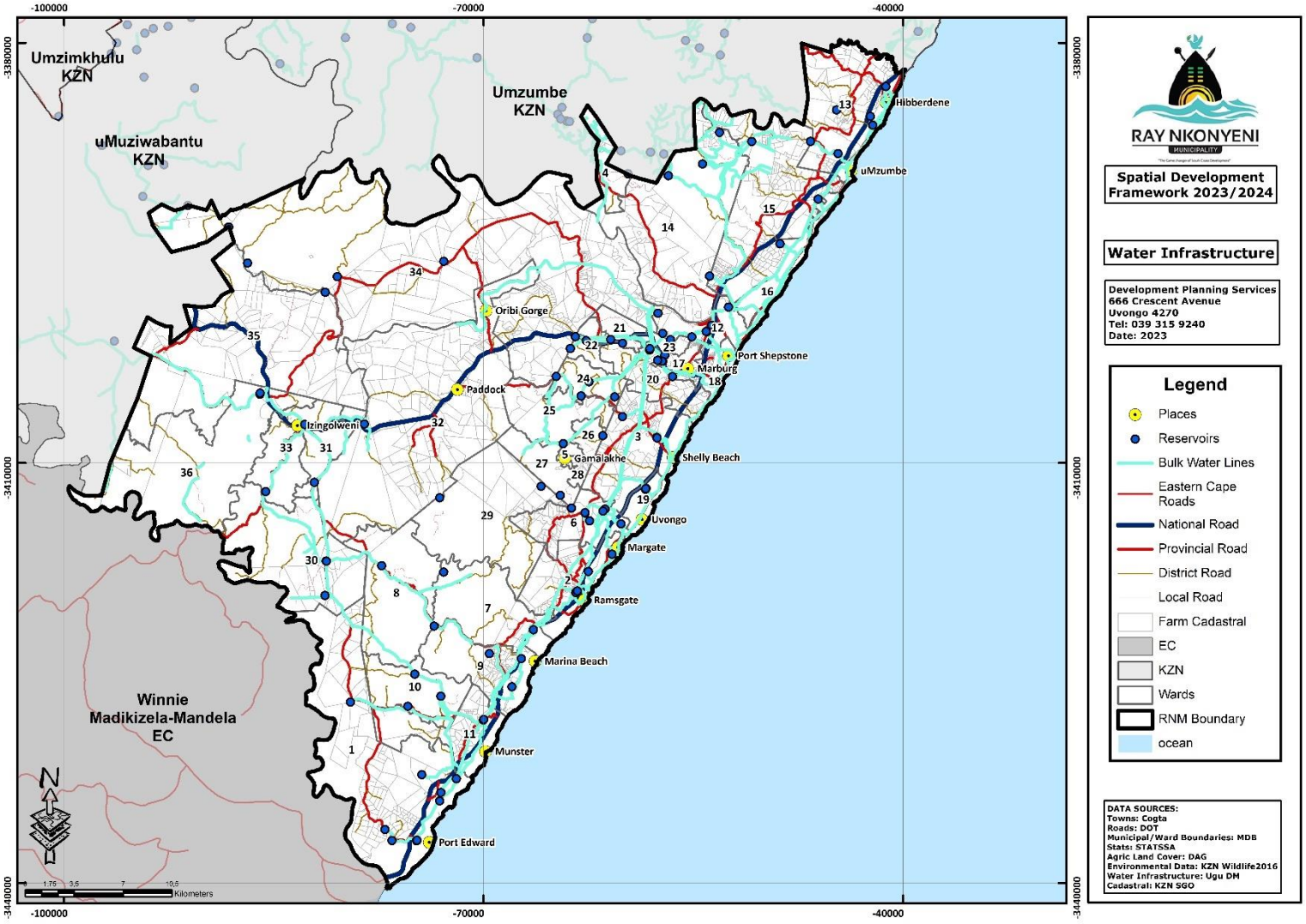
- Mzimkulu 693.3 Ml;
- Mthamvuna 200.75 Ml;
- Mzinto 127.80 Ml; and
- Umthwalume 73.00 Ml.

This water infrastructure was developed to serve settlement knitted together along the coast. The recent development growth requires the strengthening of the system to replace the old pipe systems and increasing capacity of water treatment plants to meet demand. The systems within Ray Nkonyeni that needs strengthening are as follow:

- UMzimkhulu water augmentation project;
- Mtwalume bulk water project;
- South Coast Bulk pipeline;
- Umtamvuna bulk water project;
- Port Edward and Ezinqoleni; and
- Rural Water Supply.

Ugu WSDP indicated that the rivers within the District Municipality have sufficient surplus flow to cater for the water demands for the foreseeable future. However some of the infrastructure needs to be upgraded to cater for the demand. The aging infrastructure and rising demands have resulted in Ugu District Municipality embarking on the Non-Revenue Water management programme to reduce water losses and new water project to meet the demand. The Umzimkhulu augmentation and South Coast bulk pipeline are now at implementation stage with other programmes provided for in the next year's indigents.

Map 8: Bulk Water Infrastructure



6.1.2. AREAS THAT LACK ACCESS TO WATER

The number of households without access to water is estimated at 10 873 which makes up 13% of the population within Ray Nkonyeni Municipality. The municipality noted that there are still backlogs in terms of clean water provision to some areas in rural areas. The wards with the biggest water backlog is ward 8, 15, 29, 30, 31, 32, 34 and 35. The other wards with hardship in terms of water access are ward 4, 27, 33 and 36. These households use spring, dam and rivers as sources of water and are prone to a number of water borne diseases. The Municipality has also made provision of water tankers to supply water to those communities with little or no access to water.

6.2. BULK SEWERAGE

6.2.1. BULK SEWER INFRASTRUCTURE

The provision of sanitation services is also the responsibility of Ugu District. This includes the delivery of bulk sanitation infrastructure such as the waste water treatment plants. Most of the treatment plant facilities are owned and managed by the Ugu District Municipality other treatment plants are privately owned and managed. There are several pump stations in the reticulated areas whilst waste water treatment plants are generally located inland of the coastal strip.

Ugu Water Services Development Plan estimates that R 2, 1 billion is required to meet the waterborne sanitation backlog between Sezela, Umtentweni, Southbroom and Port Edward. Approximately R0.9 billion of capital is required to meet the more densely populated areas including the strip from Port Shepstone to Ramsgate, Gamalakhe and Harding. The densely populated areas should be clearly identified and proper town planning be implemented to speed up township establishments. According to the Water Services Development Plan (WSDP), the District Municipality does have a full waterborne sanitation Master plan. A plan to refurbish infrastructure in the urban coastal strip-sanitation and development of water borne sewage to minimize ground water sources pollution is in place. Loan funding was secured for the implementation of the water borne sanitation project in the coastal strip. This included the areas running from Port Edward in the south to Scottsburg in the north. The investigation undertaken to develop a Sanitation Master Plan has revealed that to connect all properties along the Ugu District coastline, a sum of R1.2 billion in investment is required (as at 2006).

This estimation includes reticulation and purification costs, but excludes new green field developments. High-risk areas that are prone to ecological disasters have also been identified and these would have to be prioritized for implementation. These areas are: Shelly Beach to Margate, Mbango valley, Mtentweni, Mellville, Pennington, Park Rynie, and Scottsburg. Taking into consideration the environmental considerations and the financial viability and sustainability of the schemes, sewerage schemes that have been prioritised are Shelly Beach to Margate, Pennington, Scottsburg and Mtentweni.

The District Municipality has taken the decision that low cost housing within the urban area will be developed with full waterborne sanitation. The existing sewerage reticulation, pump stations and treatment works infrastructure was assessed in 2004/2005 to be in need of refurbishment requiring R120 Million. To date a total of R 30 Million has been invested in this area resulting in a number of the beaches retaining their Blue Flag status. The water borne sanitation programme was assessed and a master plan developed for the whole district. The first phase of prioritise areas will be undertaken in the next two years against a R100m loan facility.

6.2.2. AREAS THAT LACK ACCESS TO SANITATION

Approximately 14 493 households do not have access to sanitation facilities within the appropriate standards. This makes up 17% of the total population within Ray Nkonyeni Municipality. Ward 8 and 15 have the highest sanitation backlogs. These are followed by ward 3, 6, 7 and 34.

6.3. BULK ELECTRICITY

6.3.1. BULK ELECTRICITY INFRASTRUCTURE

The current reticulation network in Ray Nkonyeni Municipal area as indicated in map shows areas already electrified and the location of the bulk electricity infrastructure. It is no surprise that the bulk electricity infrastructure is concentrated in areas that have the highest population densities which is mainly along the coastal strip as well as Murchison,

Ezingolweni and Oribi George. There are also a number of HV and MV cables that originate from these substations which distribute electricity within different parts of the municipal area. This is further supported by the MV stations. The electricity network is constrained, with future load requirements in Port Shepstone and the surrounding areas increasing rapidly as a result of new office and commercial developments that are taking place in the area. New customer applications and new developments within the Port Shepstone distribution areas require electricity supply: additional capacity requirements are up to 10MVA. Eskom Port Shepstone substation has no capacity to accommodate any additional load as the 1X20MVA transformer is already loaded above its transformer rating.

The municipality will construct a new full specification 132/11KV, 2x40MVA at Port Shepstone substation at a new site/location. The long-term benefits is that the municipality can take supply from Eskom at 132kV: of which benefits are in terms of lower tariffs, asset ownership and project implementation time frames can be quicker than Eskom. The municipality will also construct a cable feed from Marburg Switching Station at an estimated cost of up to R 15 million.

This option is the recommended network upgrade option as a short-term, immediate solution. It can address the municipality's immediate power constraints in the Port Shepstone CBD. It will make 5MVA available from the Eskom Marburg substation, to meet the forecasted load requirement in the short-term. Estimated project implementation is 6 to 12 months.

6.3.2. AREAS THAT LACK ACCESS TO ELECTRICITY

Survey shows that 89,5% of the municipality's population has access to electricity. Some rural communities still require infrastructure connection and there is an infill backlog. The major challenge regarding electricity backlog is the capacity constraints from Eskom. Major substations are currently been upgraded to increase the supply capacity. New infrastructure development and extension put pressure on the existing infrastructure and supply capacity. Wards with the largest concentration of backlogs are 8, 15 and 34.

6.4. RAY NKONYENI INTEGRATED WASTE MANAGEMENT PLAN (IWMP)

The Municipality adopted its Integrated Waste Management Plan (IWMP) in June 2017. The IWMP of the Municiplaity focusses on the management of general waste generated by the major centres of the municipality. However, it excludes the management of healthcare and asbestos waste, as these waste types are managed by specialist contractors.

The IWMP is closely aligned to the Integrated Development Plan (IDP) and as such has a five year programme which is to be updated on a five-year basis. It is an outcome based plan at municipal level and:

- ✓ Sets waste management targets;
- ✓ Priorities;
- ✓ The approach to planning new facilities;
- ✓ Financial resourcing; and
- ✓ Implementation mechanisms.

The said IWMP has been highly supported by a Municipal Bylaws and Regulation whih have also been reviewed and adopted during the formulation of the Ray Nkonyeni IWMP.

6.4.1. CENTRAL WASTE COLLECTION POINTS

The Municipality has identified a number of central collection pioints in which it has deploys skips to various commercial/business areas to facilitate collection of business waste. In total, the Municipality deploys up to 147 skips ex Depot 2.

Wheelie bins are owned by the municipality and are distributed to companies for use. No information has been provided as to the number or placement thereof. A component of this is an education program that relates to controlled disposal and collection.

The waste collection zones are Hibberdene, Port Shepstone, Margate, Ezingolweni, Sea Park, Port Edward, Sunwhich Port, South Port and other coastal settlements. Waste services is focused on the urban coastal strip with 26.6% of households receiving weekly waste collection. The majority (60.1%) utilise their own refuse dump and 5% have no facility to dispose of waste. The areas that receive weekly kerbside collections include

Hibberdene, Umzumbe, Bendigo, Umtentweni, Port Shepstone, Marburg, Shelly Beach, Gamalakhe, Uvongo, Margate and Soothbroom whose waste is deployed to three (3) Depot across the Municipality. Whilst, areas which include Southbroom, Marina Beach, Palm Beach, Leisure Bay and Port Edward have contracted companies to remove waste weekly in such areas.

6.4.2. OTHER WASTE COLLECTION AND DISPOSAL

a) Street Cleaning and Servicing of Street Bins

Depot 1 is responsible for street cleaning from Umtentweni to Hiberdene freeway off ramp. Inhouse staff is allocated to clean main roads and CBD areas (Hiberdene, Umtentweni Spar, Commercial Rd, Rethman Dr,) during working days.

Depot 2 is responsible for street cleaning from Port Shepstone to Shelly Beach. This is inclusive of Port Shepstone CBD, Gamalakhe and Shelly Beach CBD. All main roads have staff allocated to clean them.

Depot 3 is responsible for street cleaning from St Michaels to Trafalgar.

a) Garden Waste

The Southbroom drop off facility receives garden waste which is managed on site or disposed of at Oatlands landfill.

The Waste Group formerly ran the Leisure Bay (Thongazi) garden waste facility. The continued operation of this must be confirmed. The waste characterisation study found that 257 tons/month arrive at the landfill site.

b) Industrial and Hazadous Waste

There is no inflrmation curretly available regarding the generation or handling of hazardous wastes generated by commercial and industrial activities. Oatlands landfill facility does inspect wastes in accordance with the Waste Classification and Management Regulations of 2014.

c) Medical Waste

Compass Waste Services (Pty) Limited (also referred to as Compass) was contracted to remove and dispose of medical waste from the following six clinics:

- ✓ Umtentweni Clinic
- ✓ Marburg Clinic
- ✓ Port Shepstone Clinic
- ✓ South Port Clinic
- ✓ Shelly Beach Clinic
- ✓ Margate Clinic

The Municipality does not have the accreditation, expertise or resources to handle high risk health care waste.

6.4.3. WASTE RECYCLING, TREATMENT AND DISPOSAL

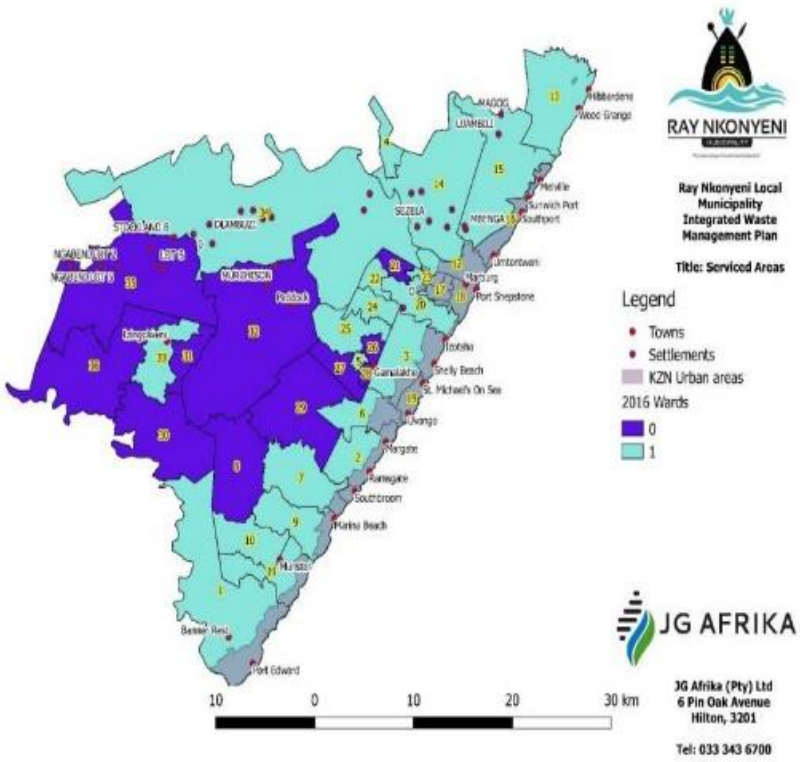
Recycling programmes have been developed using a separation at source program and voluntary drop-off centres. The process begins with a two-bag system for kerbside collection. Recyclables are placed in clear bags and collected separately from black non-recyclable bags. Clear bags are sent to Ravine Lane Recycling/Buy-Back Centre where further separation / baling is carried out by a private enterprise.

Additionally, seven drop off centres are available for the public to engage in waste management. No volumes were available for each drop off centre. These volumes are all incorporated into the data reported by the recycling centre.

In addition, separated recyclables are collected by the municipality and sent to Ravine Lane Recycling/Buy-Back centre.

All waste is disposed of at the Oatlands landfill site. This is a licensed Class B (G.M.B+) sanitary landfill. The site has been expanded recently with the development of Cell4b with further cells due for commencement. Landfill air space is estimated as a further 15 years.

Figure 9: Waste Collection Areas

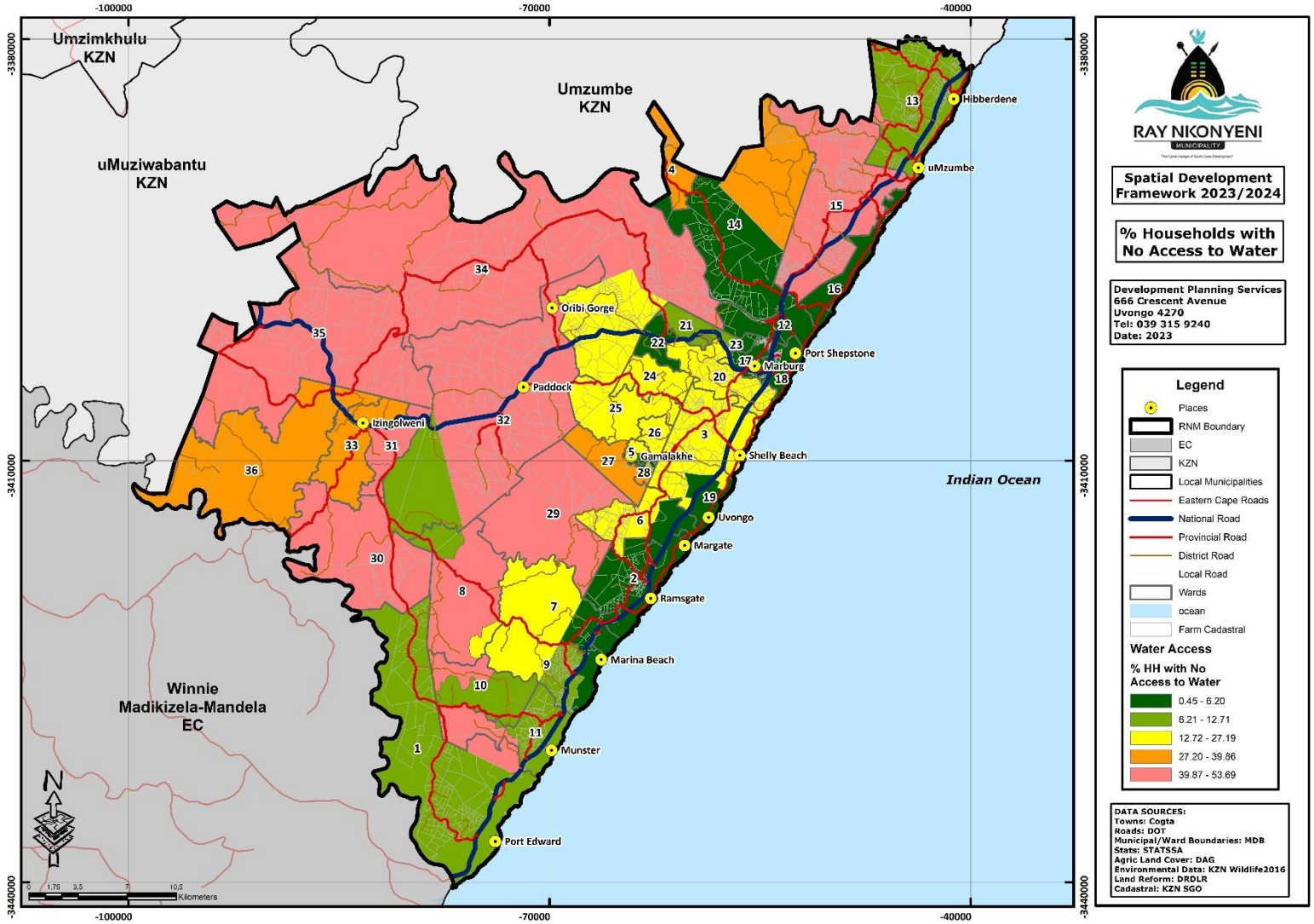


Source: Rav Nkonveni IWMP. 2017

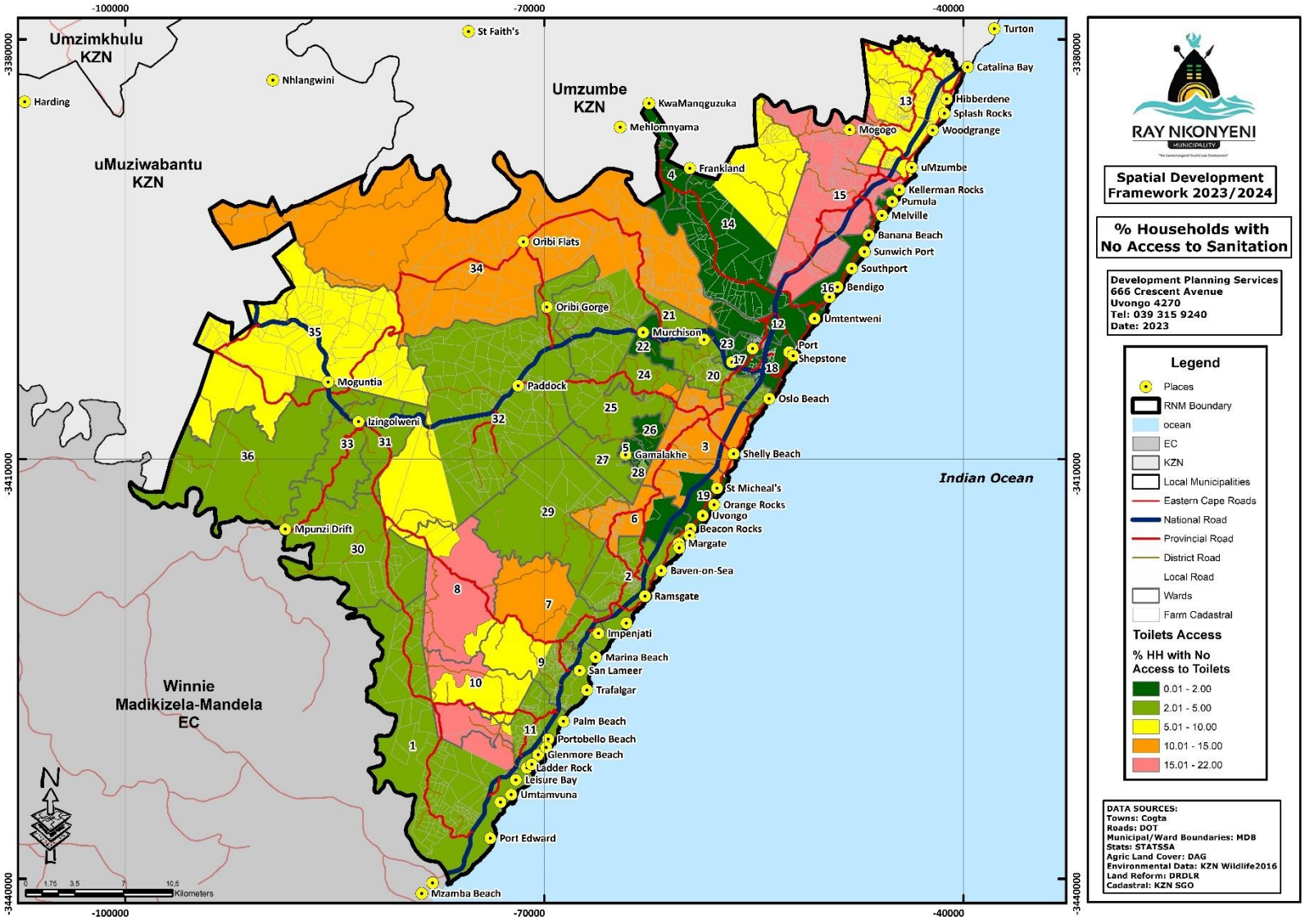
6.5. TELECOMMUNICATION

According to Ugu SDF, telecommunication services within the area are provided by Telkom and all licensed cellular phone companies in the country. Telecommunication infrastructure remains one of the major challenges in all the municipal areas, information on infrastructure is difficult to access from the various service providers due to competition. In formal urban settlements majority of the people have access to Telkom services. In rural areas the majority of people rely on cellular phones. Some key issues faced by the Municipality access to telecommunication service, infrastructure information and a lack of co-ordinated planning to meet the district's needs.

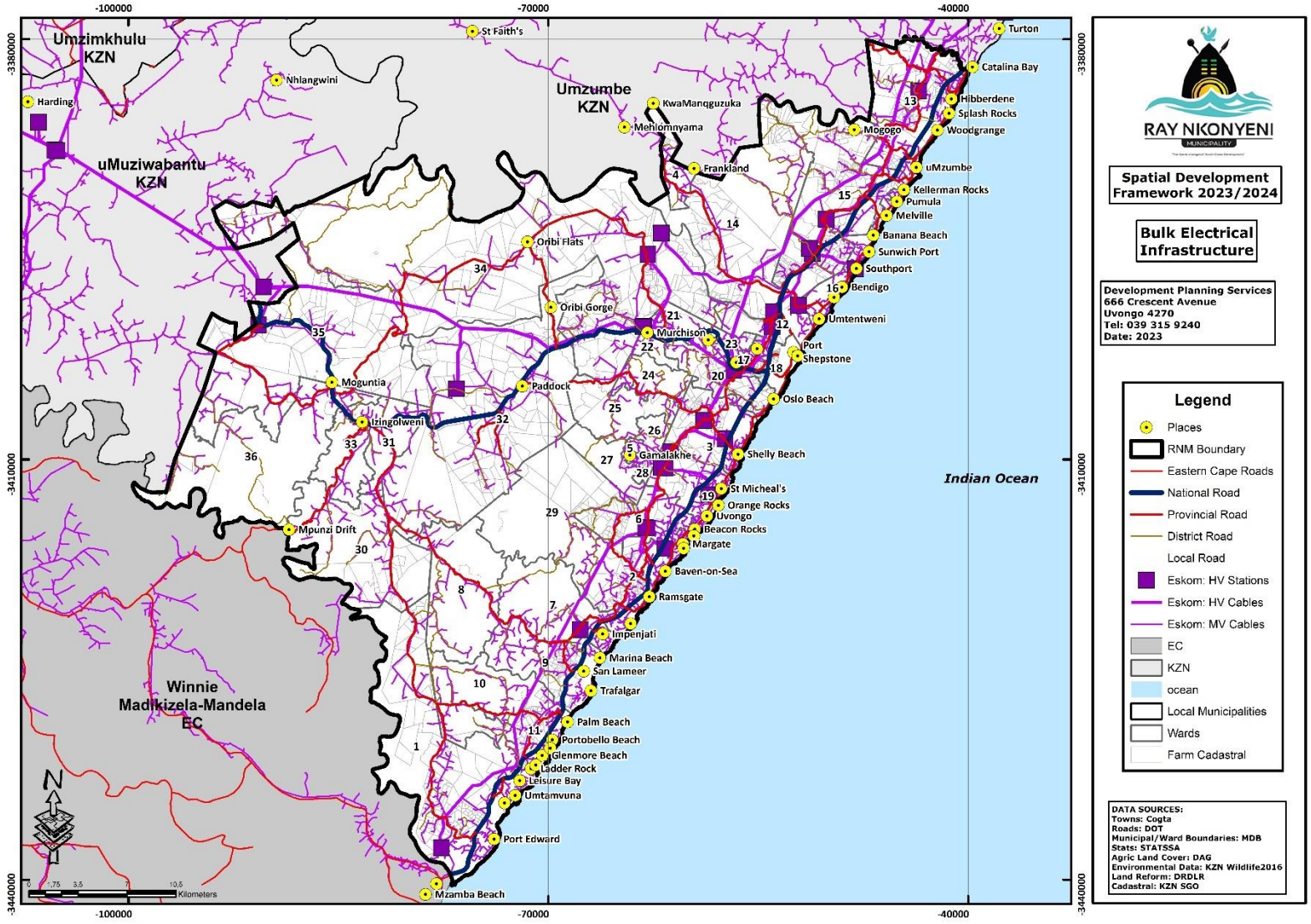
Map 9: % Households with no access to Water



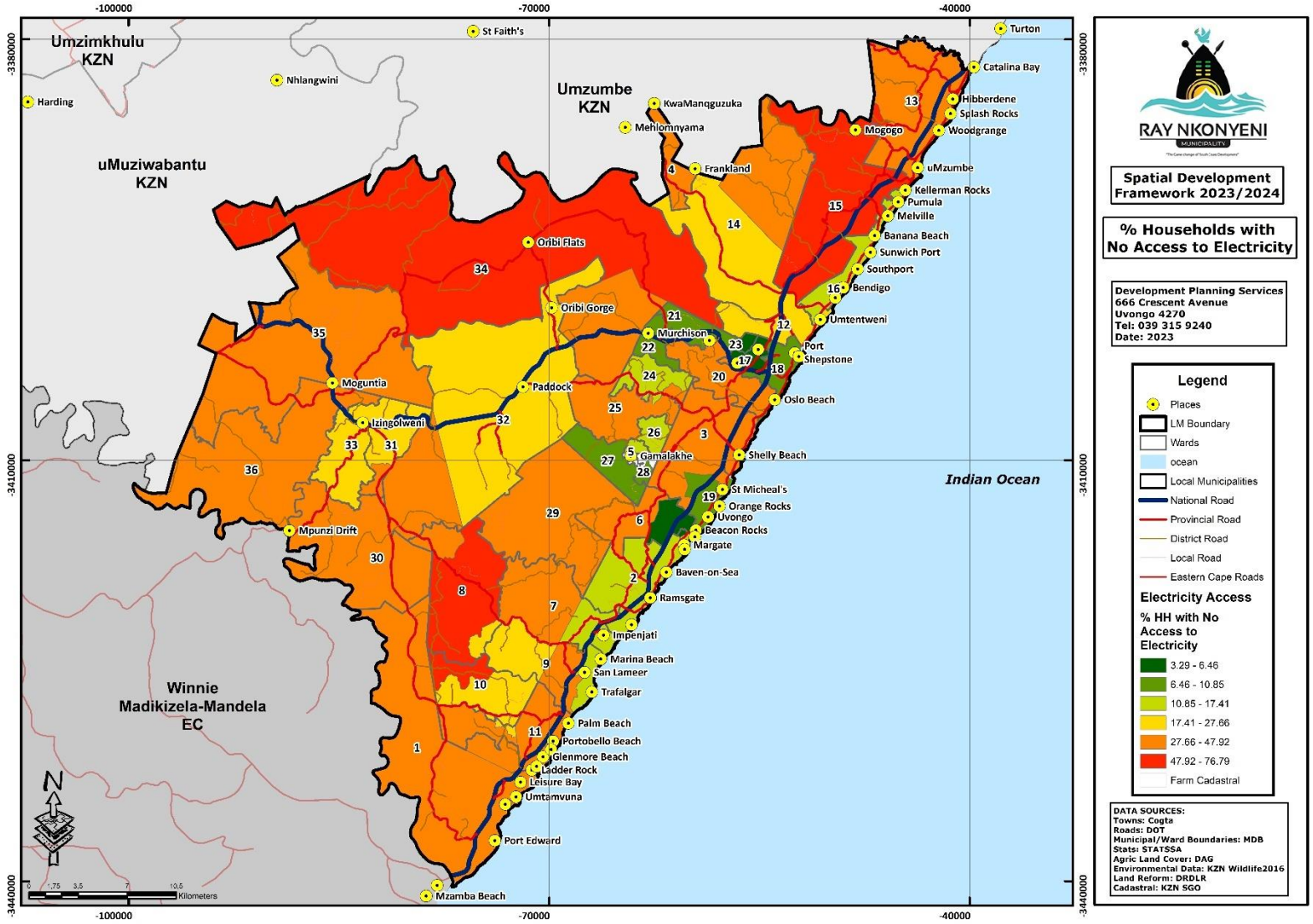
Map 10: % of Households with no access to Sanitation



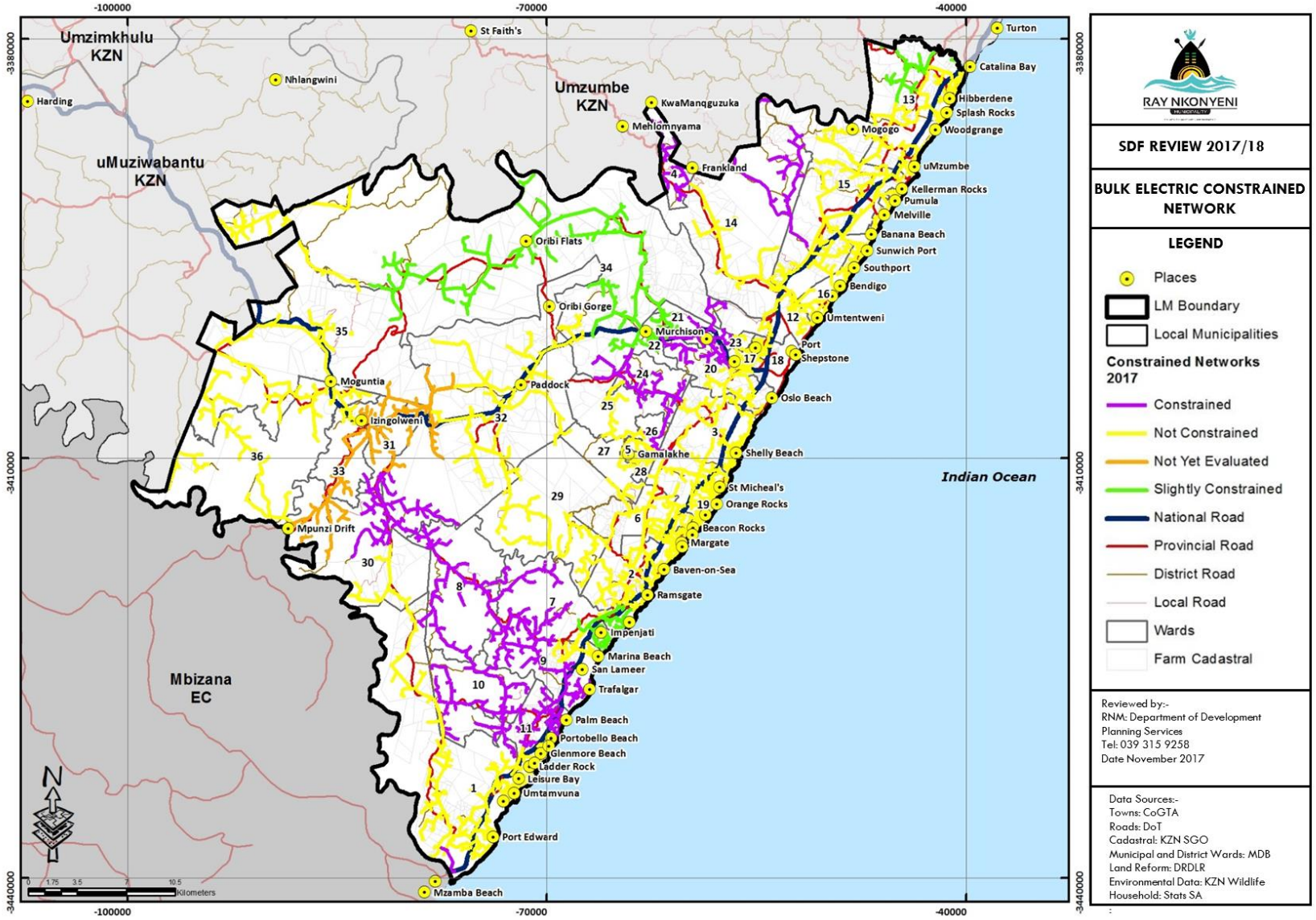
Map 11: Bulk Electric Infrastructure



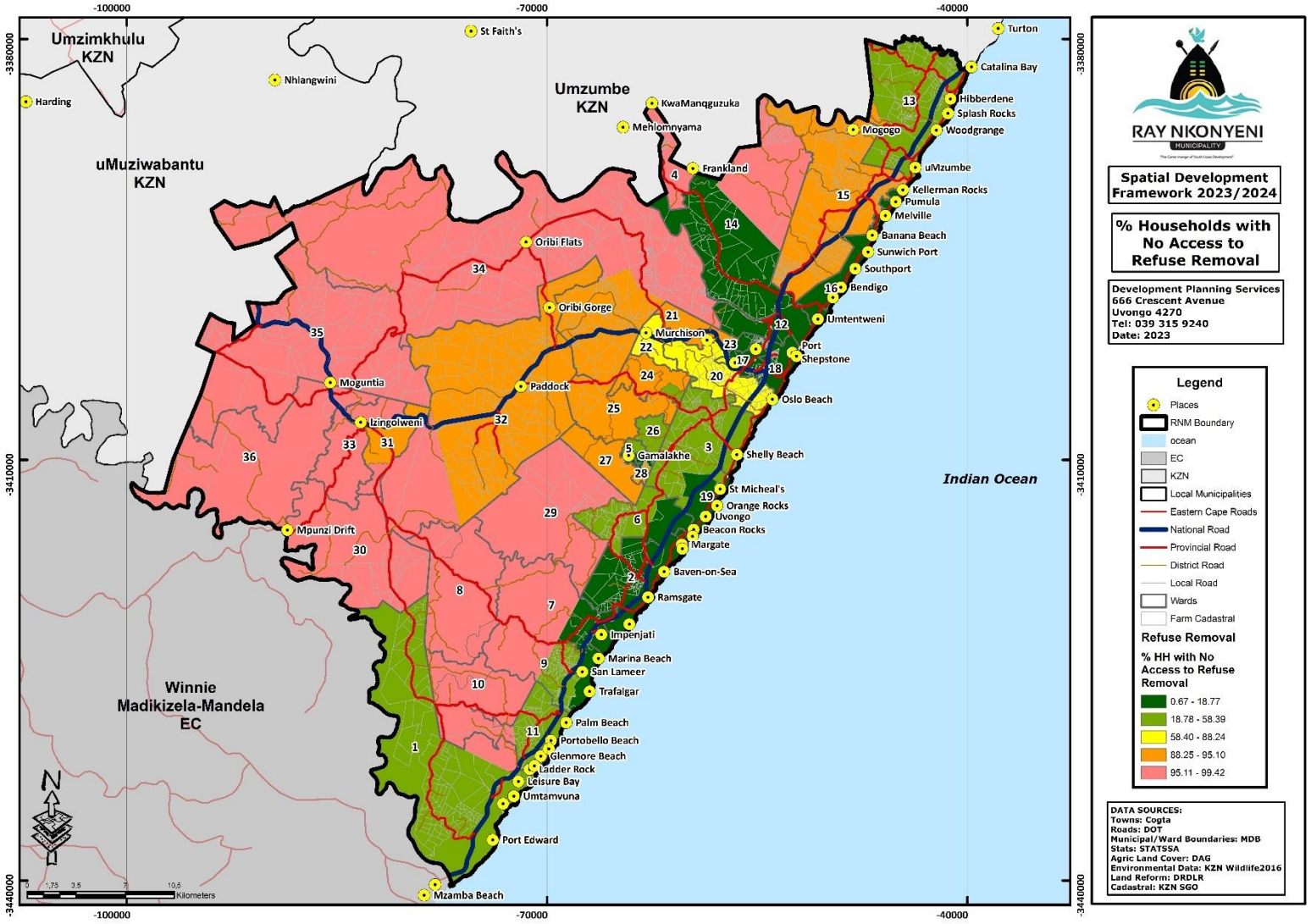
Map 12: % Households with no access to electricity



Map 13: Bulk Constrained Network



Map 14: % Households with no Access to Refuse Removal



7. PUBLIC FACILITIES

7.1. HEALTH

There are seven (7) mobile clinics, twenty (20) fixed clinics, one (1) Community Health Center (CHC) at Gamalakhe, two (2) government hospitals and two (2) private hospitals. According to the Planning Standards introduced by KZN Planning and Development Commission, 5 500 households needs to be provided with a clinic while 10 000 households needs to be provided with the CHC and a hospital is provided as per sub-region. This suggests that the area is provided with more clinics than what the standards warrant (13 clinics), a backlog of seven (7) CHC is then noted and Hospitals are well provided. The IDP noted that although the area has enough clinics, the influx of people from the Eastern Cape and other municipalities creates an impression that there are backlogs. It should be noted also that on daily basis there is a high number of people visiting clinics that are in urban areas for convenience purposes, but this results in more work for the nurses. Entabeni clinic functions as a maternal etic unit (specializes in normal deliveries). The District has made many attempts at improving the health status of its population. The most number of clinics are found in Ray Nkonyeni Municipality, which also consists of three 24 hour clinics in Gcilima and Ntabeni. The utilisation rate in Ray Nkonyeni is the highest in the district at three.

7.2. SCHOOLS

The educational facilities to be fairly spread amongst different parts of the municipal area. Ironically the well-developed coastal urban strip does not boost with lots of facilities as the rural hinterlands of the municipality. There are 85 primary schools and 42 Secondary Schools within Ray Nkonyeni. The KwaZulu-Natal Draft Norms and Standards suggests that primary schools should be accessible within 1,5km while secondary schools are within a 2km traveling distance. The population catchment threshold differs on the basis on the density requirements whereby the lowest density settlements can be provided with a Micro Primary School for every 60 households while the population catchment which warrants the small Secondary School is 200 households. What becomes evident from the application of this requirement is that some of the coastal settlements do not have access to schools within the required distance. The areas that are also not within ease of access to schools includes Oribi Flats and Paddock.

7.3. SAFETY AND SECURITY

There are nine police stations within Ray Nkonyeni Municipality. These are located in Port Shepstone, Port Edward, Ramsgate, Gamalakhe, Mellvile, Hibberdene, Ezingolweni, Paddock and Margate. The provincial planning standards suggests that a population 50 000 people needs to be provided with one Police Station at a radius of 10km. There are few areas that this radius does not reach and these include parts of ward 8, 9, 10 and 35.

7.4. CEMETERIES

The municipality has five cemeteries namely Oslo Beach Cemetery, Port Shepstone Cemetery, KwaNositha Cemetery and Margate Cemetery. There is also a private Cemetery at Izotsha. The majority of the rural population in use traditional burial practices whereby the deceased family members are buried on-site.

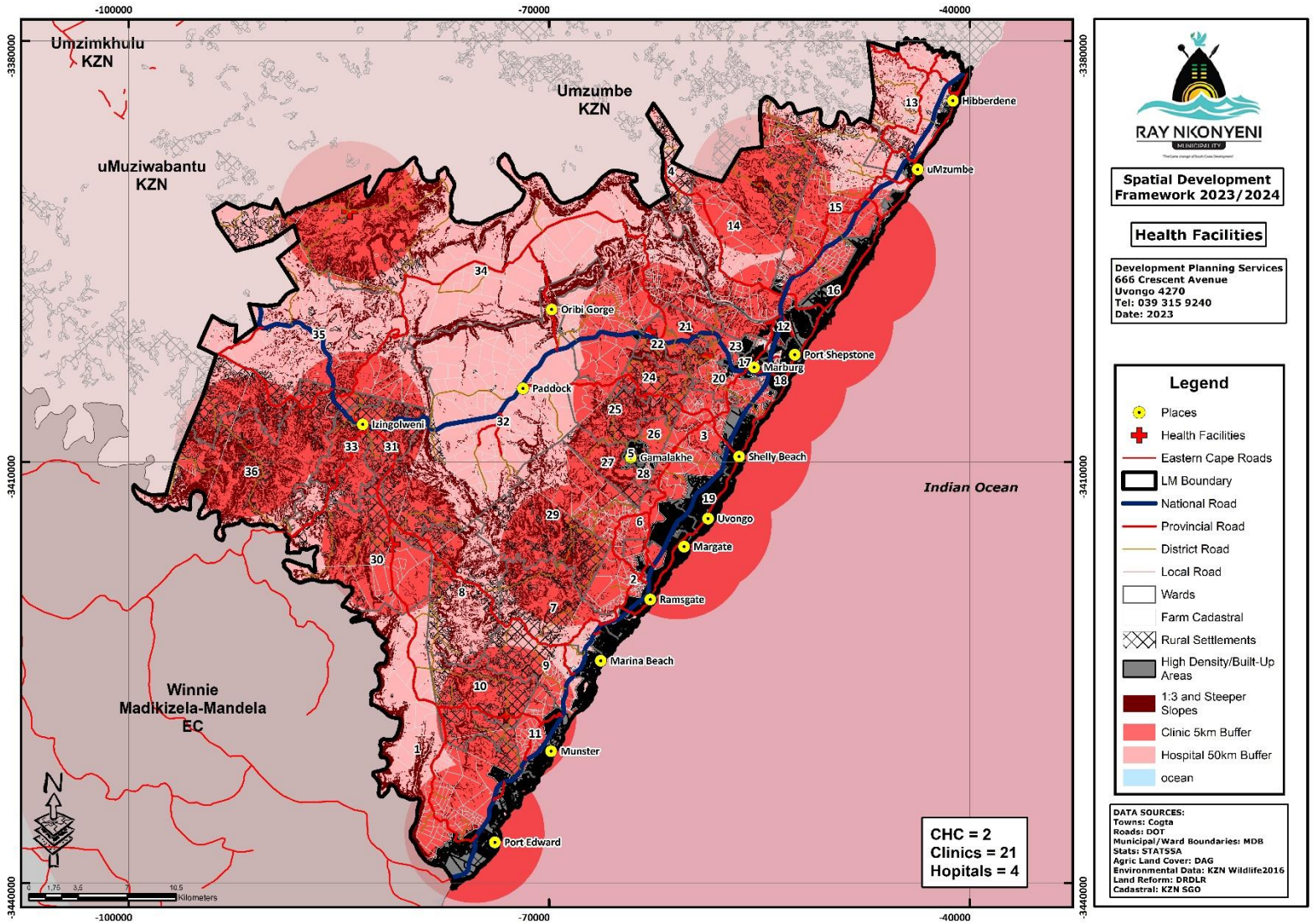
7.5. THUSONG CENTRE AND COMMUNITY HALLS

There are ten Thusong Centres within Ray Nkonyeni which are located in KwaNzimakwe (Thongazi), Nyandezulu, KwaMadlala, KwaXolo (Gcilima), Mpunzi, Ndunu, Ndimeni, Maguntia, Maryland and Mlozane. There are sixteen (16) community halls that are found within the traditional council areas such as KwaMavundla (2), KwaXolo (4), KwaLushaba (2), KwaNdwalane (1) and KwaNzimakwe (1), Woyisane, Mbeni, Cele, Nkulu and Ezingolweni. An application of the Kwazulu-Natal Draft Norms and Standards to community halls, suggests that one hall is required for 5 000 people within a 30 minute walking time or 1.5km walking distance. Considering the rural population, this suggests a need for reveal that approximately 41 community halls are required. As such, it would seem that there are backlogs of fifteen (15) facilities.

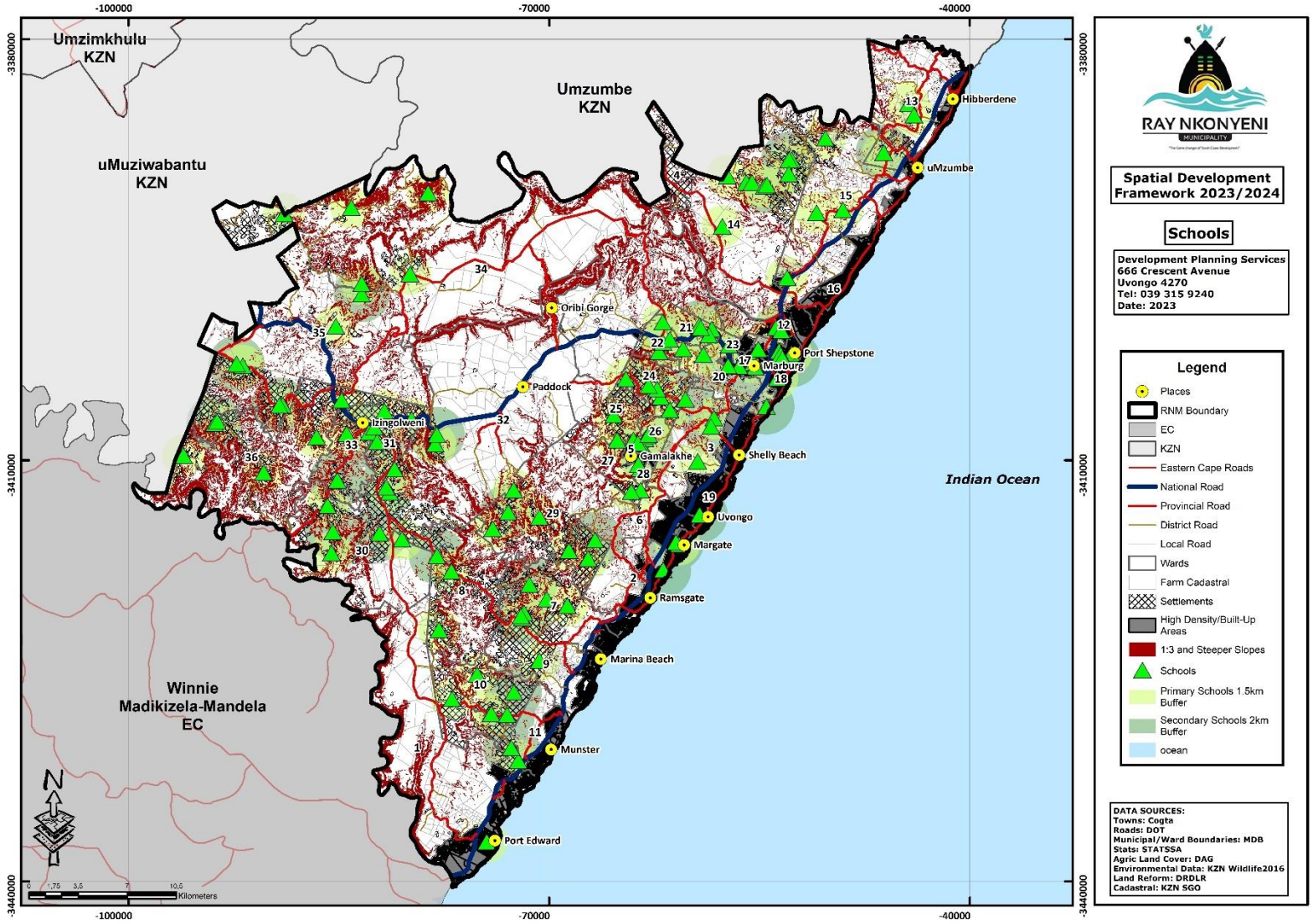
7.6. SPORTS AND RECREATION

There are approximately 35 sport fields, 4 sport complex and 17 parks within Ray Nkonyeni Municipal Area. The municipality administers most of these sport facilities. The application of planning standards indicates that at least one sport complex is required per 50 000 people and therefore the area can be considered to be well provided with these facilities. Recreational facilities form an important aspect within a community. It provides a place for physical activity, as well as a space for social functions where people can gather and interact.

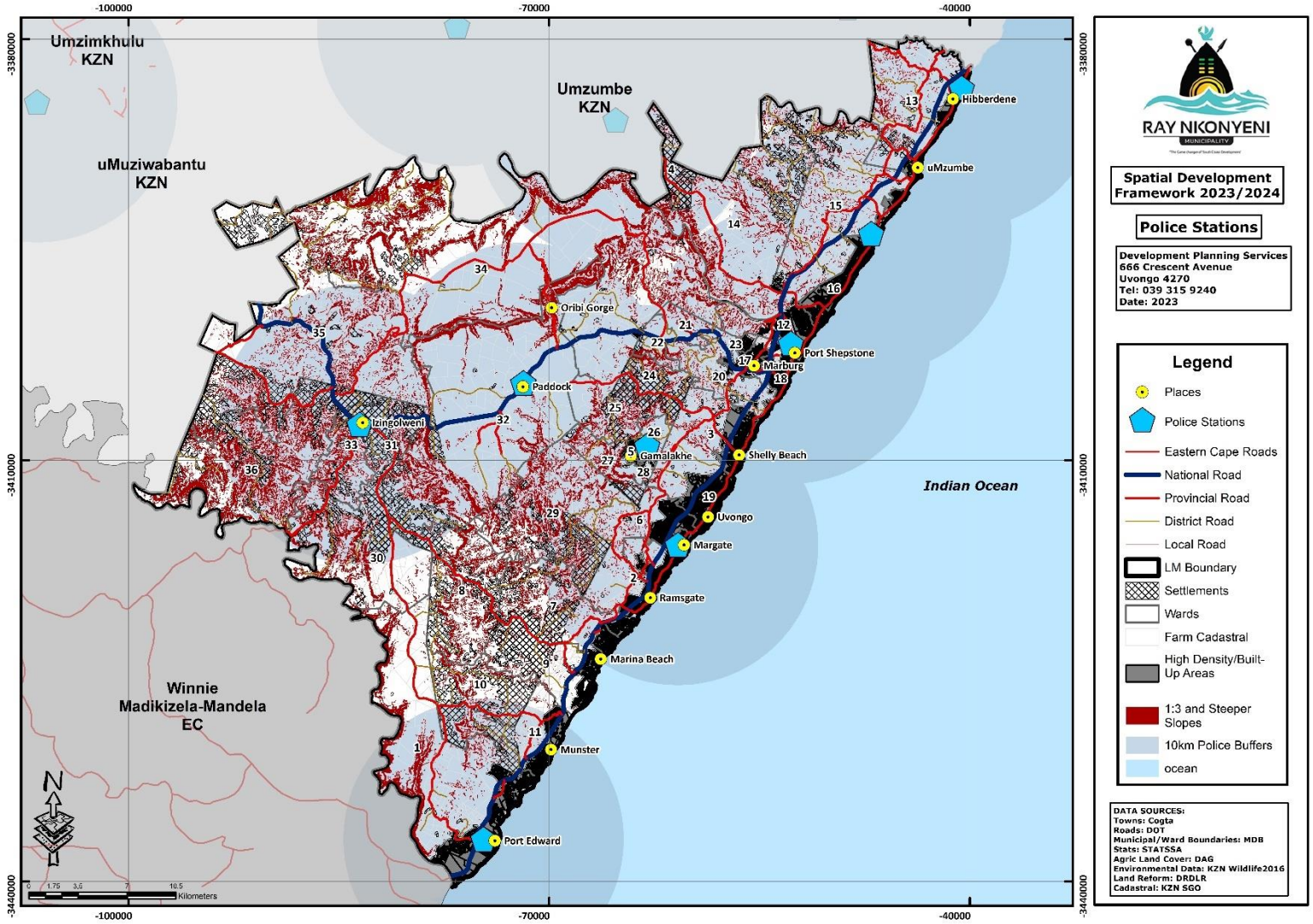
Map 15: Ray Nkonyeni Health Facilities



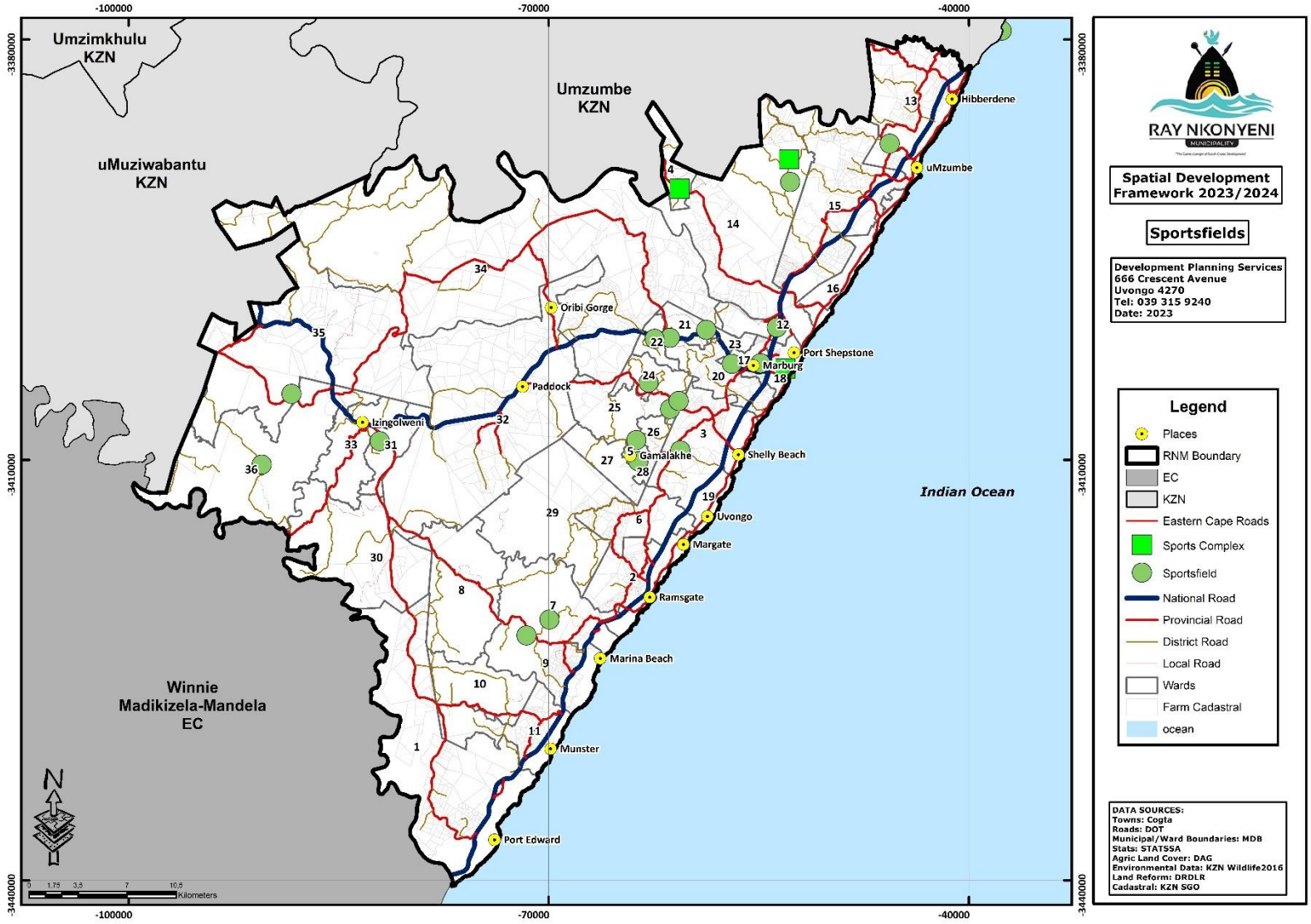
Map 16: Ray Nkonyeni Schools



Map 17: Ray Nkonyeni Police Stations



Map 18: Ray Nkonyeni Sports Fields



8. SPATIAL ANALYSIS

8.1. SETTLEMENT TYPOLOGIES

Ray Nkonyeni Local Municipality has a diversity of settlements given the fact that it entails urban and rural character while it is also within a very active tourism region. These broad characteristics implies that over the years the area has evolved with a need to provide formal urban settlements for different income groups within the area, while the rural population has also made means providing themselves with settlement in a traditional way and the private sector developers has responded to the demands for tourism/ holiday accommodation. The settlement typologies that have been created as a result are as follows:

8.1.1. COASTAL HOLIDAY SETTLEMENTS

Ray Nkonyeni boosts with a number of holiday homes that are located along the coastal strip. These presents built up areas which are developed in a 'state of the art' level. These include most of the coastal areas located along Marine Drive, Ocean Drive and Finnis Road such as Uvongo Beach, Manaba Beach, Ramsgate Beach, Oslo Beach and Shelly Beach. The location of these settlement areas has capitalized on the most aesthetic prime coastal land which is boosting tourism within the area. These settlements are characterised with a high density which is evidenced from the medium to high rise buildings with large window overlooking the Indian Ocean. There are also a number of commercial and entertainment activities that are found within and between these settlements.

8.1.2. COASTAL URBAN SETTLEMENTS

There are a number of urban settlements that are located along the coast which are not tourists related. These include the suburban areas of Port Shepstone, Marburg, Margate, Port Edward, Sunwhich Port, Hibberdene etc. The coastal urban settlements are mostly located along N2 and R61. These are developed into towns due to the high level of visibility and accessibility.

8.1.3. FORMAL INLAND SETTLEMENTS

The other urban areas that are located within the inland and these are Gamalakhe Township and Merlewood. The inland urban settlements tend to be mainly residential areas with limited commercial activities within these.

8.1.4. PERI-URBAN SETTLEMENTS

The most notable peri-urban settlements are Ezingolweni, Murchison, Fairview and Louisiana are peri-urban settlements that exist within the area. Fairview and Lousiana are located between the urban areas and traditional council areas. Fairview is located within close proximity to Hibberdene. Louisiana is located adjacent to N2 within close proximity to Sea Park. It is a rather small settlement that mainly involves a group of houses and homesteads that have been built around the farming areas.

8.1.5. RURAL SETTLEMENTS

The majority of traditional settlements that are located within Ingonyama Trust land are nucleated and densely populated. These settlements include the following:

- KwaXolo i.e. Gcilima, Enkulu and Duzane;
- KwaNdwalane/ Nsimbini i.e. Murchison Flats, Boboyi, Madakane and Nyandezulu;
- Vukuzithathe i.e. Izingolweni; and
- KwaMavundla i.e. Thafeni and Nsangwini.

This pattern is mainly motivated by the location of these settlements within the main roads. These include N2 to Ezinqoleni and other provincial routes. There are few discrete and isolated villages which are:

- KwaXolo i.e. Dumezulu, Thulawayeka, Mbecuka and Nkampini;
- KwaMadlala i.e. Sentombi, Cabhane and Mambili;
- Oribi Flats, Paddock, Bhosiki etc; and

- KwaLushaba i.e. Mgolobi.

These settlements are deeply rural with unique features such that each homestead has more than one dwelling, cattle kraal or chicken coop, home burial and on-site disposal pit. These are the practices that have persisted for a long time within the rural environment but are prohibited within the urban areas.

8.1.6. INFORMAL SETTLEMENTS

There are four informal settlement areas which are Bhobhoyi (1100 households), Louisiana (1000 households), Masinenge (542 households) and Mkholombe (1600 households). These settlements are located in the inland areas of the municipal area with only Masinenege Informal Settlements located within the Coastal Town of Margate. Informal Settlement Upgrade projects are currently underway in the eradiation and upgrading of the informal settlements.

8.1.6.1. INFORMAL SETTLEMENT UPGRADE

The Municipality has an Informal Settlement Upgrade in which two projects namely Louisiana and Masinenge are undertaken under this programme. Louisiana project has been completed and Masinenge is ongoing with construction of new houses. From these only 759 families not accommodated in the first phase (i.e. Louisiana, 141 families made up of 81 families remaining in informal settlements and 60 families in temporary housing and 618 families in Masinenge) require both the identification and allocation of potential sites for housing and relocation assistance.

Project Name	Programme Type	Ward	Cluster	No. of Units	Total Budget
Louisiana	Informal Settlement Upgrade	15	7	564	R57 911 667.26
Masinenge	Informal Settlement Upgrade	3	4	882	R155 388 701.10
Mkholombe	Informal Settlement Upgrade	20	6	1000	R 3 326 590.00
TOTAL				2 446	R216 626 958.26

(Source: RNM Human Settlement Sector Plan. 2017-2021)

However, the Municipality has been very progressive in the eradication of informal settlement. The Municipal strategy predominantly aims at providing new Greenfields housing developments in close proximity to the current informal settlements. This can be seen from the strategy in Louisiana and Masinenge and is planned in Mkholombe where Greenfield developments are neighbouring the old or existing settlements. The primary concern now would be to accommodate the approximately 759 families that have spilled over from the current informal settlement projects and the 1617 families currently residing in Mkholombe totaling 2376.

The Municipal plan is to accommodate these 2 376 families into the two new greenfield developments. i.e., Mkholombe (Planned approximately 1000 sites) and Bhobhoyi Phase 2 (Planned approximately 1098). However, this calculation indicates that there will still be a shortage of 376 families at the close of this process and therefore it is suggested that either further land be identified to create a new greenfield development or that the Mkholombe site be developed in-situ to provide the required housing opportunities.

8.2. SETTLEMENT DENSITY

8.2.1. HIGH DENSITY URBAN SETTLEMENTS

The urban settlements have the highest density. The areas that are leading include the main notable towns such as Port Shepstone, Margate, Port Edward, Hibberdene, Gamalakhe, Ezingolweni and coastal towns. This is due to the existence of flats and other high rise buildings. Each household occupy less than 1 ha within these areas.

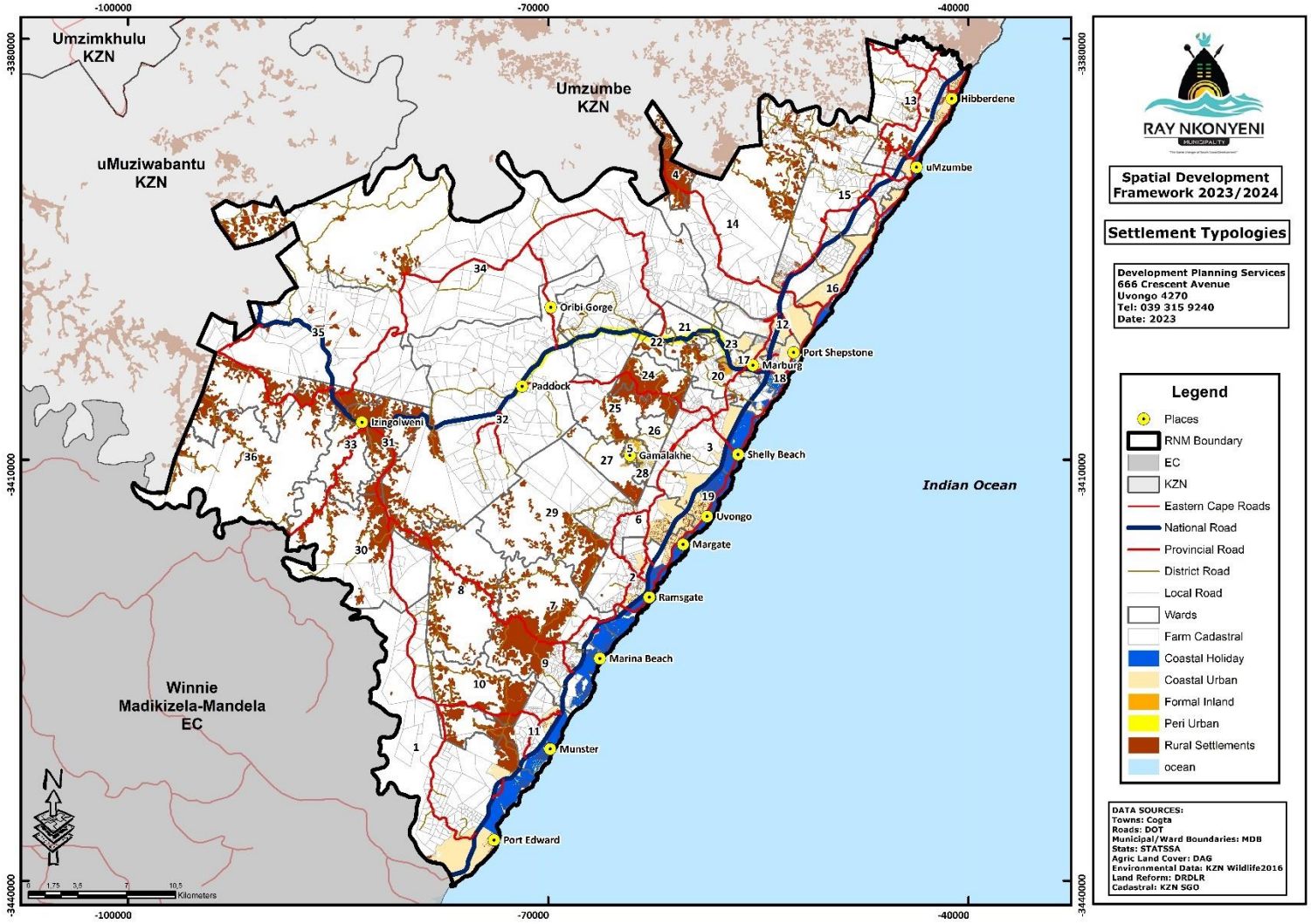
8.2.2. DENSELY POPULATED RURAL SETTLEMENTS

The densely populated rural settlements are found along the main roads. These are KwaXolo (i.e. Gcilima, Enkulu and Duzane), KwaNdwalane/ Nsimbini (i.e. Murchison Flats, Boboyi, Madakane and Nyandezulu) and KwaMavundla (i.e. Thafeni and Nsangwini). Each homestead occupy between 0.6 – 1.0 ha within these settlements.

8.2.3. LOW DENSITY RURAL SETTLEMENTS

The low density settlements are mainly outlying peri pheral settlements which include KwaXolo (i.e. Dumezulu, Thulawayeka, Mbecuka and Nkampini), KwaMadlala (i.e. Sentombi, Cabhane and Mambili), Oribi Flats, Paddock, Bhosiki and KwaLushaba (i.e. Mgolobi). Each homestead occupy between 5 – 10 ha within these settlements.

Map 19: Ray Nkonyeni Settlement Typologies



8.3. BROAD LAND USE PATTERN

8.3.1. COASTAL TOURISM TOWNS AND SURROUNDING SUBURBS

There are a number of coastal tourism towns that are located along Marine Drive, Ocean Drive and Finnis Road. These towns are also surrounded by associated formal suburbs. These towns have a number of commercial and entertainment activities within it which were introduced in order to embolden this tourism environment.

8.3.2. URBAN TOWNS AND SURROUNDING SUBURBS

The main urban centres within the area are Port Shepstone, Hibberdene, Margate and Port Edward. These serves as the main towns for the municipal area with the highest agglomeration of commercial activities. These towns are surrounded by the associated formal suburbs including Gamalakhe.

8.3.3. RURAL TOWN AND SURROUNDING PERI-URBAN SETTLEMENTS

Ezinqolweni is the main rural town that is found within the municipal area. It is surrounded by the densely populated rural settlements which have grown around it over the years.

8.3.4. RURAL VILLAGES AND SETTLEMENTS

There majority of the inland area is occupied by rural villages and settlements. These are spread within different parts of the administrative boundaries of traditional authorities. These villages and settlements have a number of commercial and social activities within it. The kind of commercial activities are limited to small local convenient shops, taverns as well as scale manufacturing activities (block making) and personnel services such as salons and small scale agricultural activities (ploughing field and food gardens).

8.3.5. COMMERCIAL AGRICULTURE

Ray Nkonyeni Municipality has an abundant amount of agricultural land which is geographically located between the urban and rural areas in the form of commercial agricultural farms. The agricultural pattern within the area is primarily due to the undulating topography, which prescribes the available land parcels out of the valley lines and along other major structuring elements. The agricultural industry is a prominent feature within the KwaZulu-Natal south coast, and therefore becomes a predominant land use within the area. The predominance is due to the rich natural resources and climatic conditions, which allow for the farming of produces such as sugar, bananas, pawpaw's, coffee, tea and exotic nuts along the coast, maize, legumes, cattle, vast pine, wattle and eucalyptus plantations inland.

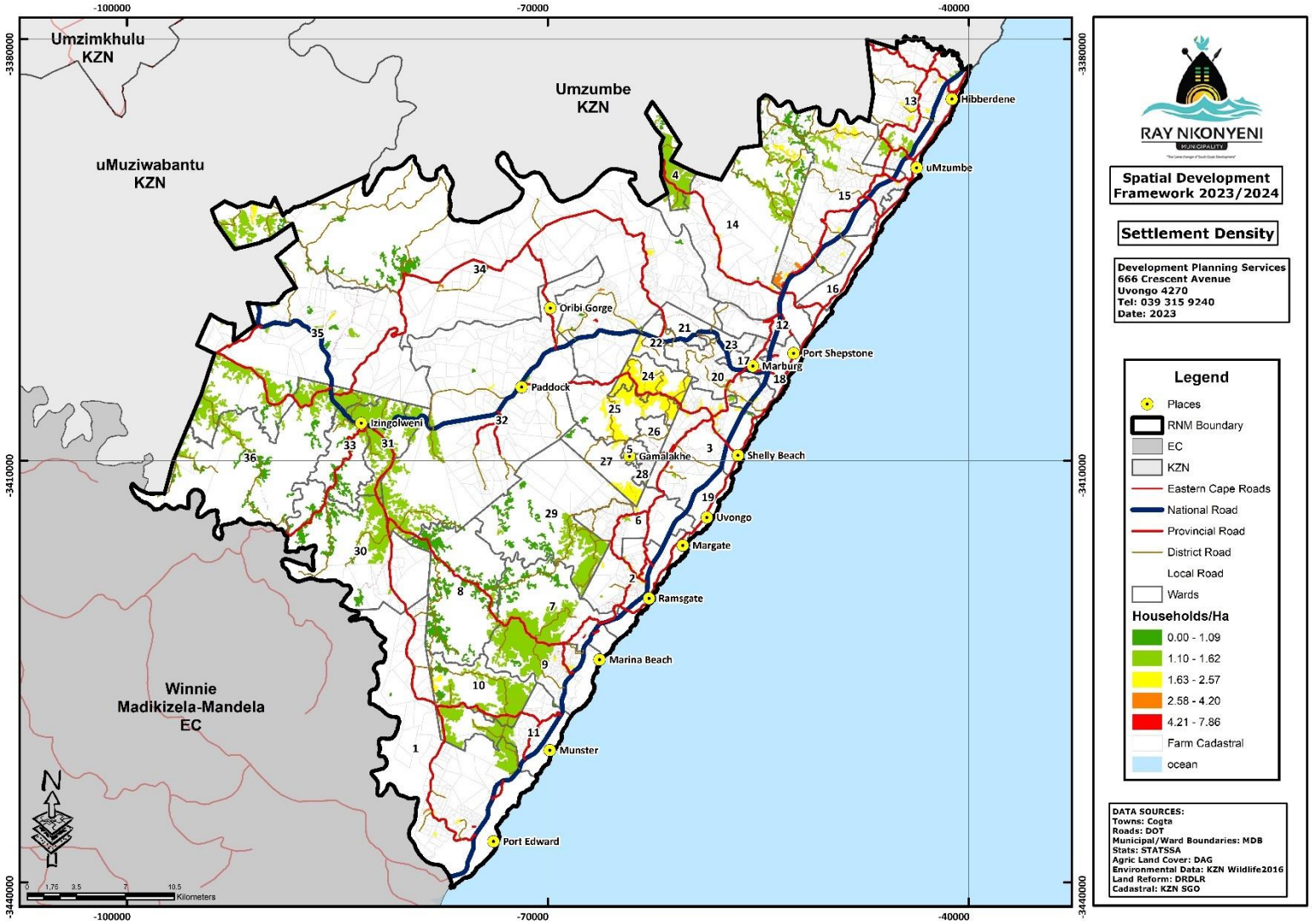
8.3.6. ENVIRONMENTAL AREAS

There are six declared formal conservation areas which are Umtamvuna, Mbubazi, Mpenjati, Skyline, Oribi Gorge and Umzimkhulu river valley Nature Reserves. There are also a number of unprotected environmental areas within the area which are undeveloped /untransformed and consist of grassland, dense bush and forests. High biodiversity areas represent a substantial fraction of the area. High biodiversity areas occur in discrete pockets within the municipal landscape, with larger portions located in the southern part of the municipality. The intrinsic value of these areas lies in its ecological and tourism development potential.

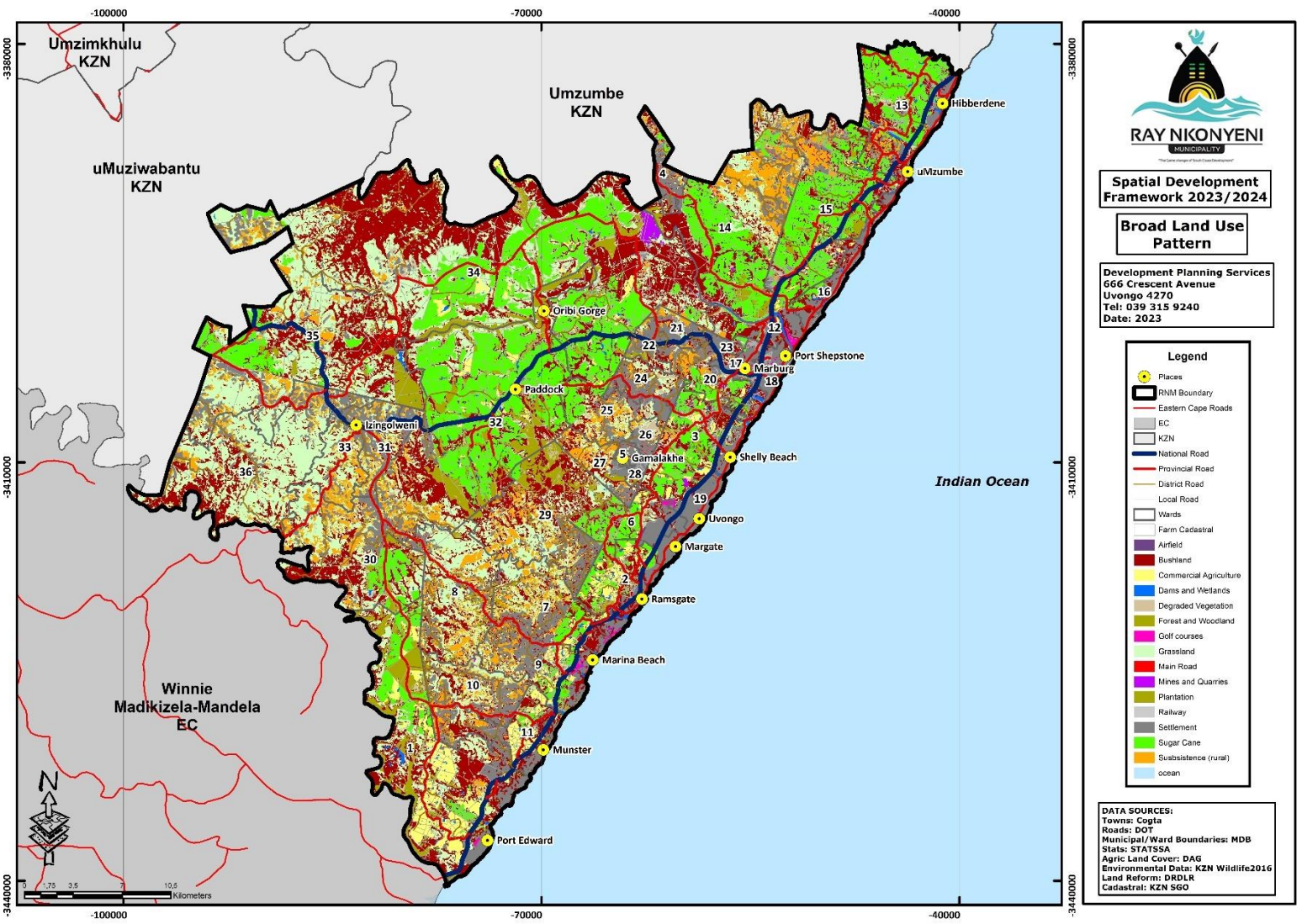
8.3.7. INDUSTRIAL HUBS

Izotsha Industrial Development Corridor which is a theatre of manufacturing and storage/ warehouse activities within the municipal area. The coverage of this area stretches to include properties located along the Izotsha Road, N2 and R102. Other industrial activities are found in towns such as Marburg and Port Shepstone which also extensively contribute in the economic growth of the municipality. The municipality has identified land along Izontsha Corridor and Hibberdene and Margate for future industrial development. Some of the projects within the industrial hubs include Technology Hub located in Izotsha Corridor on REM of ERF 494 Shelly Beach and the site is 60 hectares. The project houses residential, mixed use residential, commercial and light industry.

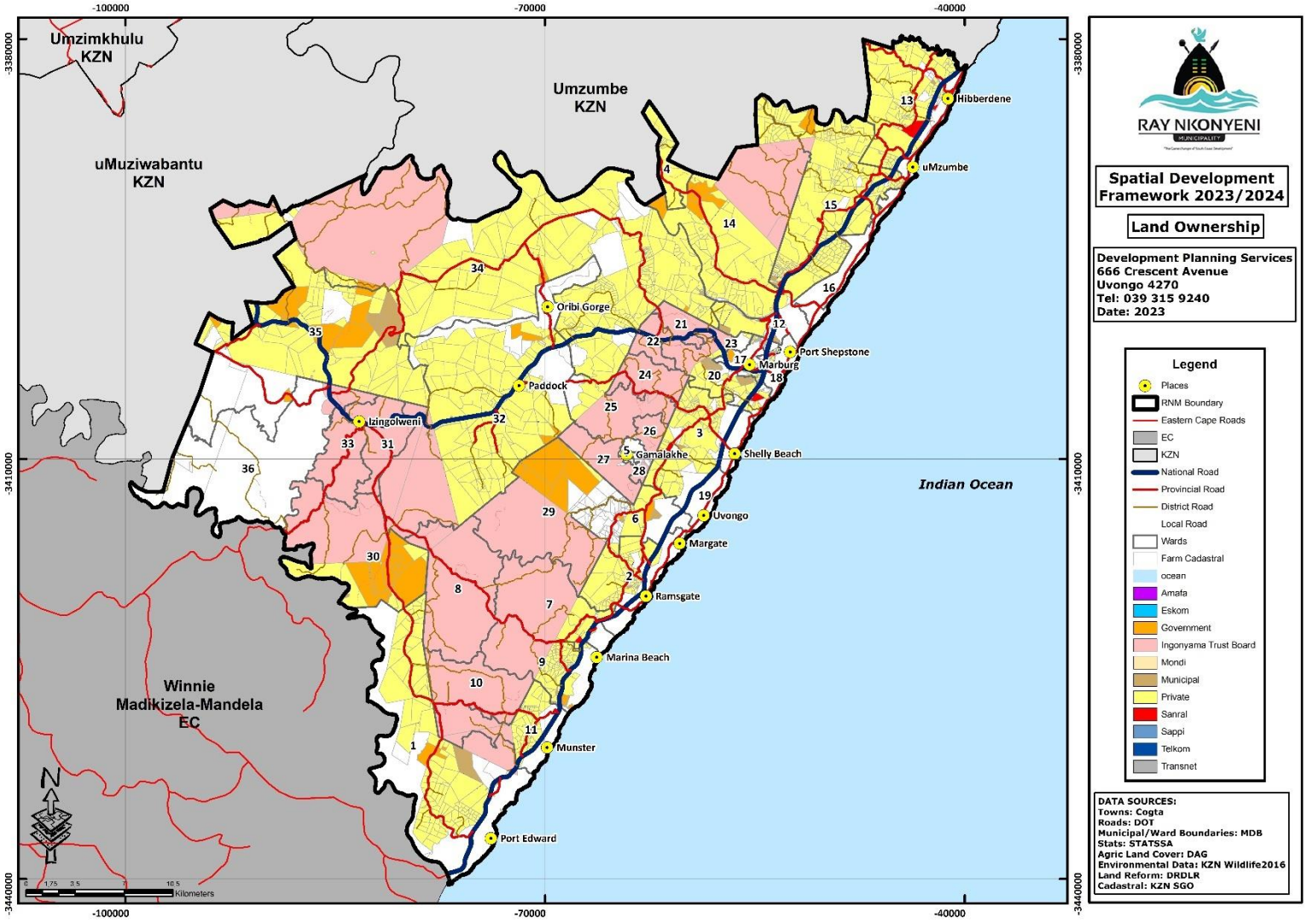
Map 20: Ray Nkonyeni Settlement Density



Map 21: Ray Nkonyeni Broad Land Use Patterns



Map 22: Ray Nkonyeni Land Ownership



8.4. LAND LEGAL ISSUES

8.4.1. LAND OWNERSHIP

Land ownership within Ray Nkonyeni is diverse but the dominant owner within the inland is Ingonyama Trust, most of the land is privately owned within the coastal urban areas and the farms are either privately or owned by corporate. The remaining intermediate pockets are under the ownership of the state, association, trust or church owned.

8.4.2. LAND REFORM

There are a number of land claims that were lodged within Ray Nkonyeni. However few of these claims were transferred into projects. There are also a number of gazetted restitution claims within the area. According to the IDP, there are two programmes that are currently running namely, the Land Restitution Programme and Land Re-distribution Programme.

8.5. LAND USE MANAGEMENT

SPLUMA requires all municipalities across the country to develop and adopt "Wall-to-Wall Schemes" throughout their area of jurisdiction. This must take place within 5 years from the commencement of the Act. In addition, SPLUMA requires that the wall-to-wall scheme be reviewed every after 5 years in order to achieve consistency within the Municipal SDF. A large portion of Ray Nkonyeni Municipality is covered by the Scheme which was refined and adopted in December 2015. However, this scheme need to be extended to cover the entire municipal area particularly the pressure points such as Ezinqoleni. It must contribute towards sustainable development, and improve governance (as it relates to land use management) within Ray Nkonyeni. As such, alignment and integration with the other tools (land audit, valuation roll, etc.) should be maintained. The introduction of the scheme in rural areas should:

- Provide for the participation of municipal officials in all land allocation processes as undertaken by traditional councils.
- Involve the participation of local communities in Ray Nkonyeni, particularly traditional councils and other structure that are responsible for spatial planning and land allocation;
- Include the development of maps, systems and procedures for effective decision making to guide traditional councils in the execution of this function.
- Incorporate the KwaZulu-Natal Rural Land Use Norms and Standards as soon as these are gazette.

8.6. SWOT ANALYSIS

STRENGTHS	WEAKNESSES
• Adopted local area plans for the promotion of effective placemaking. • Appropriate interventions to protect the environmental sensitive areas have been set aside through land use schemes and zones. • Freshwater Ecosystem Priority Areas influence policy and legislation affecting freshwater ecosystem management and conservation. • Rehabilitation programmes for clearing invasive aliens have been established. • Improved provision for community facilities and social amenities. • Recognized priority investment area owing to the status of being a secondary city.	• No flood line assessments and field verification of wetland and vegetable resources have been undertaken. • Low skills base due to youth moving to other towns in hope of greater opportunities for employment. • Lack of bulk infrastructure e.g., water and electricity • Difficulty to attract investors in rural areas • Limited employment opportunities • Lack of funding to provide equitable services

OPPORTUNITIES	THREATS
• Opportunities for employment exist in newly constructed nodes and economic corridors. • Pronouncements from national government to grow rural economies. • Prescriptive approach to coastal and environmental management	• Natural disasters • Biodiversity loss • Inconsistent provision in infrastructure • Unpredictable economic conditions • Slow development of hinterland.

8.7. TRANSPORT NETWORK

An extensive road network exists in Ray Nkonyeni, providing a large number of households with access to road transport. While the national and provincial roads are in a generally good condition, the quality of district and local roads is poor. This is mainly because these roads are gravel they require regular maintenance and upgrading. During the rainy season, these roads are particularly bad and hamper access to settlements.

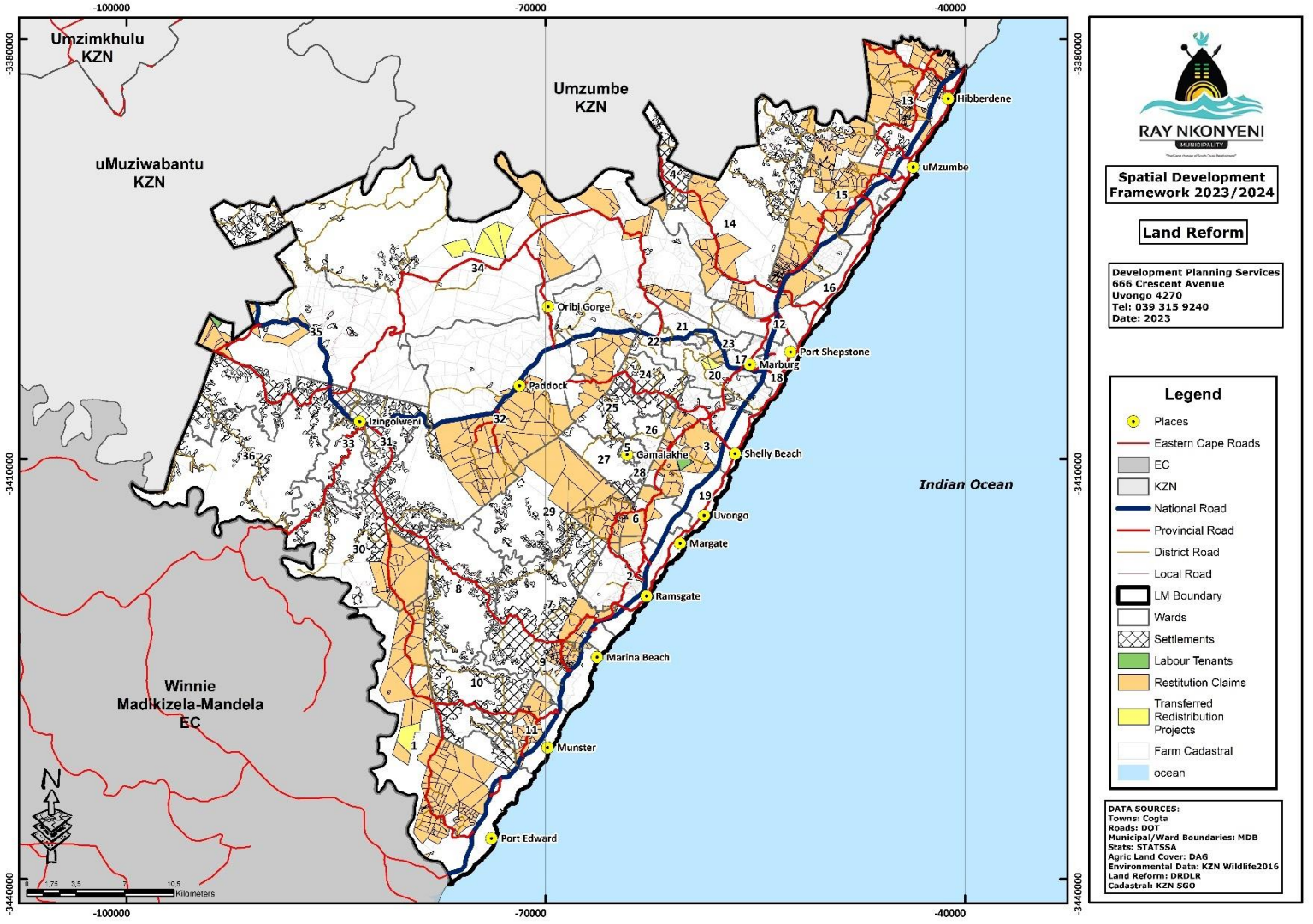
8.7.1. REGIONAL ROAD NETWORK

The N2 is the primary north-south regional linkage route. It links Port Shepstone in the South with Durban in the North. The N2 also links Port Shepstone with Kokstad as an east-west linkage. The section of the N2 which runs in the north-south direction up to Port Shepstone is of freeway standard, and comprises of 4 lanes, 2 lanes in each direction for most parts. The N2 is regarded as a generator for growth, particularly between Port Shepstone and Harding. This is the main high level limited access mobility road and is component part of the Provincial “Corridor” system. Interchanges link this road to the Regional major arterials that give access to both formal urban settlements and most of the rural settlement clusters that occur mostly within Traditional Authority areas.

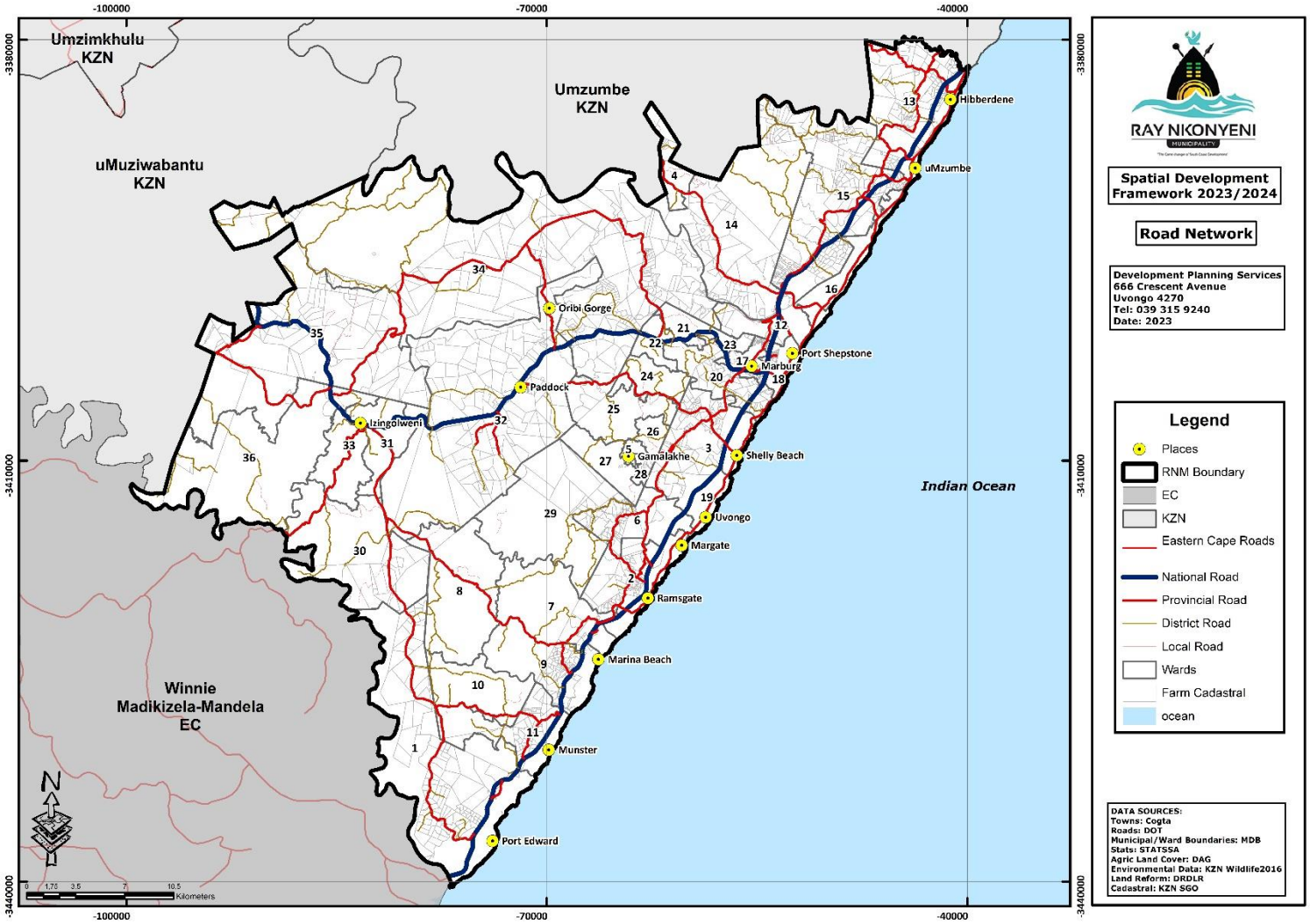
8.7.2. PRIMARY ROAD NETWORK IN RAY NKONYENI

Some of the main provincial roads within the study area include the R102, R61, R612 and the R56. R102/R61: The R102/R61 is termed the ‘beach road’ and it runs in the north-south direction along the coast, linking the various coastal towns. The provincial roads are predominantly in the east-west direction and provide high levels of accessibility linking into the minor arterials. This network of provincial roads functions as primary transport corridors. The regional road network can be classed into either surfaced (blacktop) or un-surfaced (gravel), which can be further classified into a north-south link or an east-west link. There are also District Roads. The district roads provide major internal linkage, linking schools, clinics etc. A problem that faces the municipality is the alignment of KZNDOT implementation projects with that of the municipality’s implementation projects.

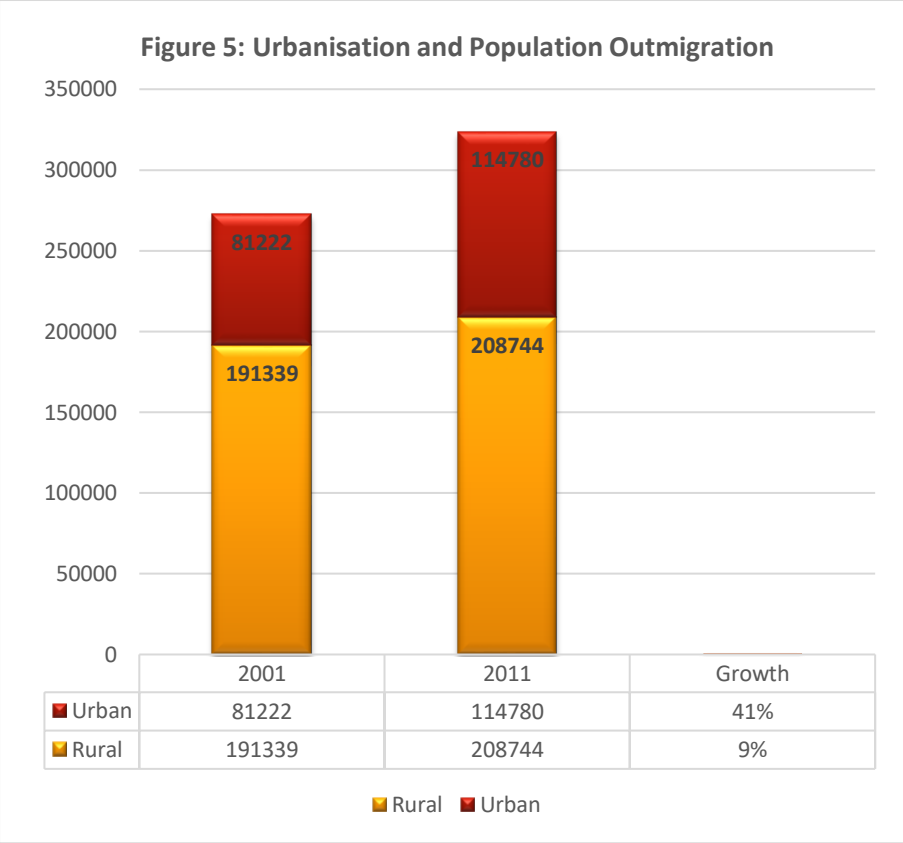
Map 23: Ray Nkonyeni Land Reform



Map 24: Ray Nkonyeni Road Network



8.8. URBANISATION AND POPULATION OUT-MIGRATION



Statistics SA: Census 2001 and 2011

The urbanization process and the rural population out-migration do not seem to be taking place within Ray Nkonyeni. Urbanization is the increasing number of people that migrate from rural to urban areas and mainly results in the physical growth of the urban areas. The urban population is increasing much faster than the rural population; however this cannot be purely concluded as the process of urbanization since rural population is also notably increasing within Ray Nkonyeni Municipal Area. Comprehensive analyses of population statistics at ward level by place from 2001 – 2011 suggest the following:

- The urban population increased by an overall 41%;
- The rural population increased by an overall 9%; and
- This suggests that there is an external movement of people who relocate to Ray Nkonyeni from other areas.

The following can be noted with regards to rural population:

- KwaNdwalane (-14%), KwaNzimakwe (-15%), Mthimude (-28%) and Manyuswa (-23%) are areas that experienced a decline in population;
- Most of the population grew outside of the traditional authority areas. These include the farming areas and peri-urban settlements with a population that grew by 45%;
- KwaMavundla recorded the highest growth rate than any other tribal areas. The population grew by approximately 27%; and
- The population of KwaXolo tribal council does not seem to be increasing.

The urban areas that have declined in terms of population are Gamalakhe Township and Ezinqoleni where each of these declined by -6%. The other urban areas have increased in terms of population growth with Sea Park that has recorded a highest growth of approximately 83%. This is followed by Ramsgate and South Broom which grew by 73%.

Table 4: Urbanisation and Population Out-migration

RURAL SETTLEMENTS	CENSUS 2011		CENSUS 2001		% CHANGE
	WARDS	POPULATION	WARDS	POPULATION	
KwaMavundla	25, 27 & 28	27404	12	20066	37%
KwaXolo	5, 7, 8, 9 & 29	48139	6	48024	0%
KwaLushaba	4	8534	7	8106	5%
KwaMadlala	14	8026	8	7896	2%
KwaNdwalane	21, 22, 23 & 24	31874	16	36335	-12%
KwaNzimakwe	10 & 11	19434	17	22279	-13%
Mthimude	5	10528	2	14661	-28%
Qinisela Manyuswa	1	7387	4	9622	-23%
Commercial Farms	12, 15 & 20	47418	1, 2, 5, 11, 14, 18, 23, 25, 28, 29, 30, 31, 32 & 33	24350	95%
TOTAL		208744		191339	**9%**
URBAN SETTLEMENTS	CENSUS 2011		CENSUS 2001		% CHANGE
	WARDS	POPULATION	WARDS	POPULATION	
Hibberdene and Pumlaas	13	5713	4, 13 & 21	1749	227%
Port Shepstone, Marburg & Izotsha	18, 17 & 20	23788	20, 9 & 35	17222	38%
Shelly Beach	3	8531	26	2713	214%
Uvongo	19	5804	34	3879	50%
Sea Park	16	7519	24	1249	502%
Margate	6	9115	10	8654	5%
Ramsgate & South Broom	2	8838	22 & 27	2352	276%
Ezingolweni	2, 3 & 6	25192	5	26757	-6%
Port Edward and Munster	1	7459	15 & 19	3077	142%
Gamalakhe	26	12821	3	13570	-6%
TOTAL		114780		81222	**41%**

Statistics SA: Census 2001 and 2011

8.9. LANDSCAPE CHARACTER AND BUILT FORM

The landscape character and built form for Ray Nkonyeni Municipal area can be segregated into four categories which are as follows:

- Coastal Strip – Ray Nkonyeni area is also referred to as the 'South Coast' due to its popular scenic beaches. This part is characterized by outstanding landscape character and built form. It is developed with medium to high density buildings that boosts with modern and ambitious architectural styles. The municipality has a responsibility to enhance and maintain this landscape and built form i.e. this part can be considered to be jewel of the Ray Nkonyeni.
- Urban (Inland) – this includes formal suburbs and townships within close proximity to main routes. These areas are characterized by formal low-rise and uniform structures.
- Farmlands (Inland) – the inland are also occupied by farms which deal with sugar cane or Banana production. The farms present a rather natural landscape which is less clouded by built form.
- Rural (Inland) – the rural areas do not boost with aggressive architectural styles nor built form. However, there are signature buildings that exist within different parts of it and these include social facilities such as clinics, community halls and Thusong Centres.

Figure 10: Land Scape Character of Ray Nkonyeni

8.10. DISASTER MANAGEMENT

8.10.1. BACKGROUND

The aim of the Sector Plan is to ensure that when a disaster related incident occurs, response will be rapid, appropriate and effective. The primary focus is to minimize the impact likely to be incurred due to flooding caused by heavy rainfall, strong winds, veld & house fire, lightning, flooding and motor vehicle accidents etc. This will be done by clearly identifying areas that are prone to above mentioned hazards by identifying relevant role players and clearly define their roles and responsibilities.

8.10.2. MUNICIPAL INSTITUTIONAL CAPACITY

In line with Section 43 on the Disaster Management Act 57 of 2002, Ray Nkonyeni established the Disaster Management section within its administration and it's fully functional. The Municipal Disaster Centre is based at Oslo Fire station, 23 Allesund Road, Port Shepstone. The Head of the Disaster Management and Fire services Centre is Head of Public Safety Department. The Centre has a telephone system and is situated adjacent to the 24hour Control room that have computers, fax lines, additional phones including two-way radio system. The Fire Chief manages the Centre with two staff members that deal with potential disaster related matters. Forty (40) Firefighters, eight (8) Controllers and 8 CCTV Operators are part of the disaster center staff establishment. Ray Nkonyeni Municipality has the following fire stations in order to increase capacity and response in term of disasters and firefighting:

- Oslo Beach fire station
- Izingolweni fire station
- Seaslopes fire station

Table 5: Status of RNM Institutional Capacity

STATUS OF RNM INSTITUTIONAL CAPACITY
VEHICLES • Fire engines dedicated to Airport (X2) • Water tanker 9000lt (X1) • Fire Engine 3000lt (X1) • Truck – 500lt dedicated to Disaster functions (X1) • Truck – dedicated to hazmat incidents (X1) • Utility van (X1) • Light vehicle dedicated to Fire Safety (X1) • Medium pump –2000lt (Izingolweni) (X1) • Skid units with 500lt and hydraulic equipment (X6)
PERSONNEL • Fire fighters (X40) • Fire fighters assigned to Fire Safety and Disaster management (X2) • Management positions (X7)
COMPETENCIES Margate Airport current status: • Fire Engines (X2) and dedicated fire personnel (X8) • The airport is now operating on a CAT 4 level and is expected to progress to CAT 6 operations. • The operating licence for the airport primarily depends on fire services staff, vehicles and equipment being a compliance requirement in terms of Civil Aviation Authority (CAA) Regulations. • The Fire Chief is responsible for Disaster Management and Fire Services Office.
RELIEF STOCK

- Blankets (X195)
- Plastic Sheeting (X33)
- Emergency B Box (X35)
- Mattresses (X250)

8.10.3. DISASTER RISK ASSESSMENT

- Identifying potential hazards and/or threats assessing the conditions of vulnerability that increase the chance of loss for elements-at-risk (that is, environmental, human, infrastructural, agricultural, economic and other elements that are exposed to a hazard, and are at risk of loss);

- Assessing impact and coping capacity

- Determining the level of risk for different situation and conditions setting priorities for action after prioritizing the hazards according to their risk factor; and continuously monitoring capabilities, risk maps and risk scenarios.

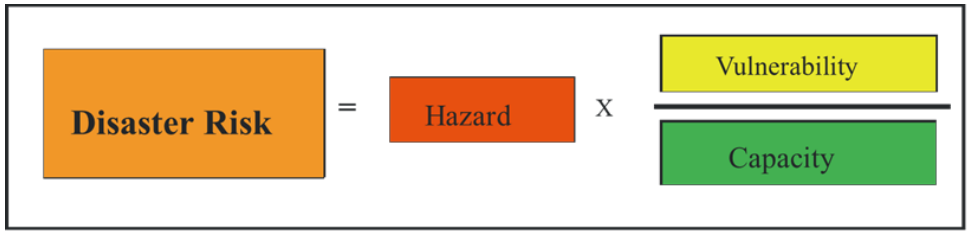
There are many different methods for carrying out risk assessments. The disaster risk assessment for the Ray Nkonyeni Municipality was based on the following methodology.

Using the definition of a "Disaster", it can be subdivided into three distinct components:

- Hazard
- Vulnerability; and
- Capacity

To be able to determine priority disaster risks one need to calculate the disaster risk using the following formula:

Equation 1: Disaster Risk Formula



8.10.4. NATURAL HAZARDS

Using the detail disaster hazard, vulnerability and risk assessments of Ray Nkonyeni it was possible to compile appropriate GIS profile maps. These GIS-profile maps summarise the disaster hazard, vulnerability and risk analysis. Hence, these profile maps indicate the risk profile of the Ray Nkonyeni area of jurisdiction. Most of the disasters are anticipated along the coastal area. There are eight eminent disasters within the area which can be listed follows:

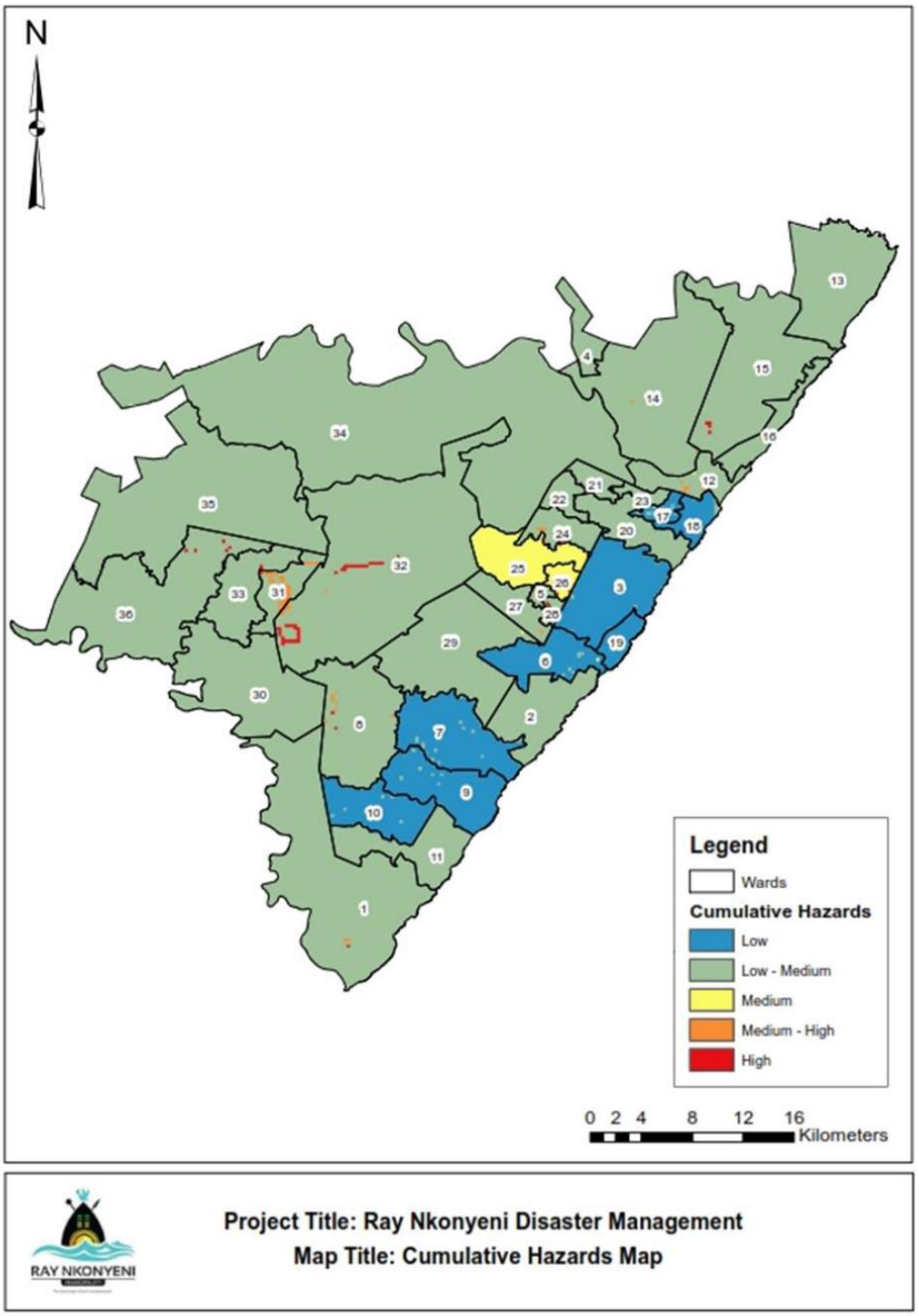
- Aircraft accident
- Hazardous installation
- Fire
- Transport routes
- Flooding
- Flooding and transport route
- Extreme weather
- Storm surge

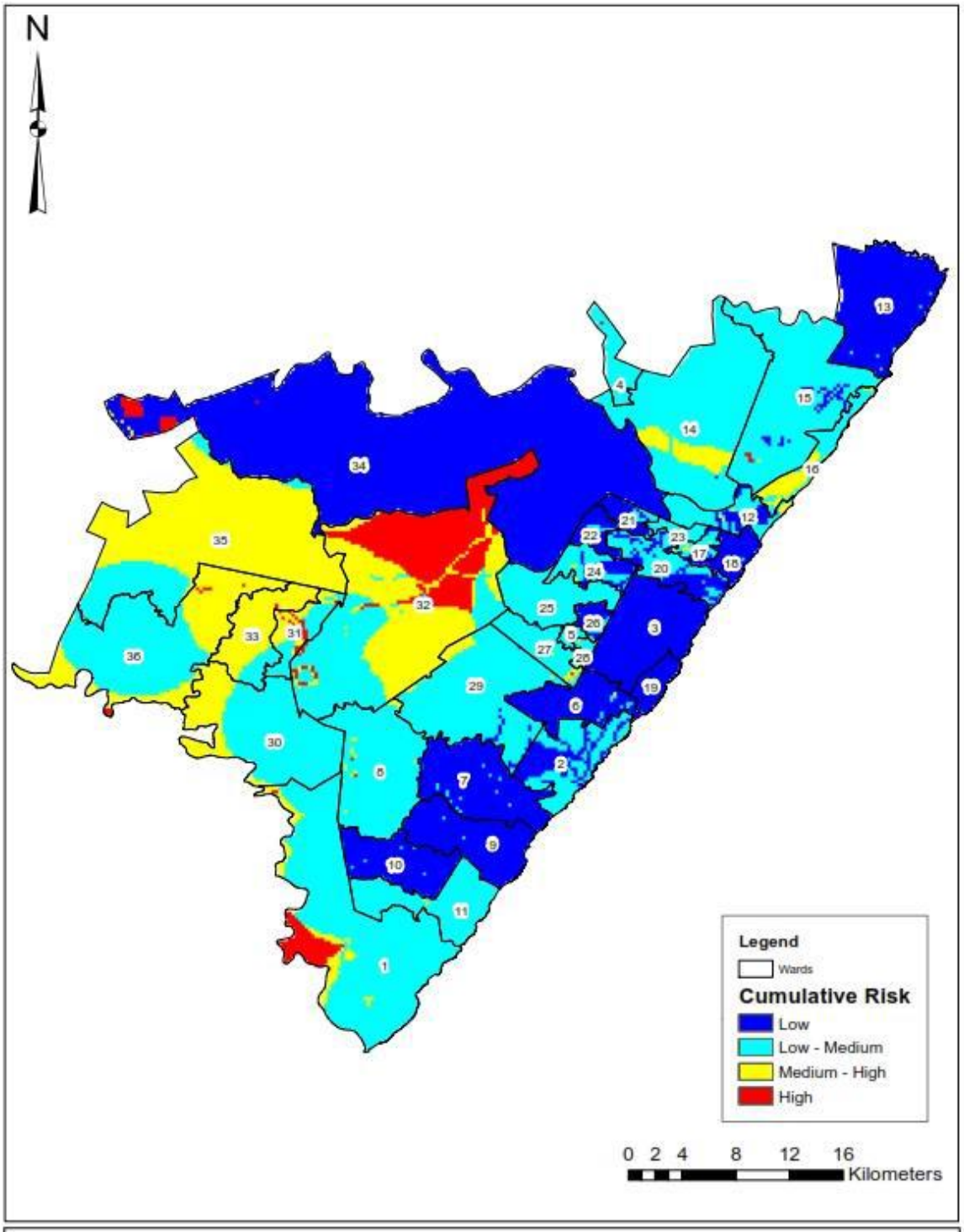
This may be due to the possibility of flooding as many major rivers diverge within this part of the municipal area to join Indian Ocean. The vulnerability of these coastal areas to natural disasters, such as floods and droughts, is greater than inland areas due to their location at the end-point of the system. The impacts of upstream activities are therefore magnified in

coastal areas. Further to this, the coastal areas are also vulnerable to natural disasters, such as storm surges, as they are located at the interface between land and sea. The vulnerability of these areas to natural disasters, such as the 2008 floods, is projected to increase with sea level rise and the increase in the frequency and intensity of storm events.

Table 6: Hazard, Risk, Vulnerability Profile of RNM

HAZARDS OR HAZARDOUS EVENTS	VULNERABILITY	LIKELIHOOD	IMPACT
Strong winds	Medium	Likely	Low
Lightning	Low	Rare	Low
Environmental degradation along coastline	Low	Rare	Low
Structural fires	High	Likely	Moderate
Veld fires	Medium	Likely	Moderate
Motor vehicle accidents	Medium	Likely	Moderate
Drought	Low	Rare	Moderate
Rabies	Medium	Likely	Moderate
Illegal electricity connections	Medium	Likely	Moderate
Flooding	High	Likely	High
Mudslides	Medium	Rare	High
Crime	High	Likely	High
Unemployment	High	Likely	High
Water outages	High	Likely	High
Sewage leaks	High	Likely	High


N
Legend
Wards
Cumulative Hazards
Low
Low - Medium
Medium
Medium - High
High
0 2 4 8 12 16
Kilometers
Project Title: Ray Nkonyeni Disaster Management
Map Title: Cumulative Hazards Map
RAY NKONYENI



RAY NKONYENI

Project Title: Ray Nkonyeni Disaster Management
Map Title: Cumulative Risk

Table 7: Disaster Management Programmes

NAME OF THE PROJECT	BUDGET	TARGETED AREAS	YEAR
School fire awareness campaigns	R10 000	Ray Nkonyeni	July 2019-June 2020
Settlements and Taxi ranks public education on fire safety	R15 000	Ray Nkonyeni	July 2019 – June 2020
Traditional Leaders and Traditional Councils community fire safety education	R15 000	Ray Nkonyeni	July 2019 – June 2020
Fire risks prevention and reduction	R10 000	Ray Nkonyeni	July 2019 – June 2020
Awareness campaigns to educate communities on ways to reduce the impacts of drought	R10 000	Ray Nkonyeni	July 2019 – June 2020
Monitor low levels bridges	R 6000	Ray Nkonyeni	July 2019 – June 2020
Floods awareness	R 8000	Ray Nkonyeni	July 2019 – June 20202

Table 8: Disaster Management Projects

RISK MITIGATION /REDUCT	NAME OF THE PROJECT	ESTIMATED BUDGET	RESPONSIBLE AGENT	DATE
Rehabilitation of Roads	**RAY NKONYENI TECHNICAL SERVICES**			
	Mavundla Tribal Court	R 1 573 499.27	RNM Municipality	2018 - 2019
	Ngwabe Road ward 23	R 289, 281.01	RNM Municipality	2018 - 2019
	Jesus Road	R 289, 281.01	RNM Municipality	2018 - 2019
	Natingale Road Albersiville	R16 297,14	RNM Municipality	2018 - 2019
	ABC road ward 23	R724 839.44	RNM Municipality	2018 - 2019

Table 9: Disaster Programmes / Projects by Stakeholders

NAME OF PROJECT	BUDGET	TARGET AREAS	YEAR
Department of Education / Public Works			
Rehabilitation of schools	R 8 000 000	Ray Nkonyeni	2018 - 2019
Human Settlement			
Construction of 40m2 house plan and repair of houses that were affected by Storms	R 23 466 956	Ray Nkonyeni	2018-2019

Table 10: Specific Climate Change Adaption Programmes

NAME OF PROJECT	BUGDET	TARGET AREA	YEAR
Invasive Alien plants control plan (Ray Nkonyeni Municipality – address fire risk)	R200, 000	Ray Nkonyeni	2017-18

8.10.5. FUNDING MOBILIZATION STRATEGY

RNM allocated R250 000 in the 2019/2020 operational budget for emergency relief in a form of blanket and mattresses.

Table 11: Budget Breakdown for Disaster Management

UNITS	BUDGET	PURPOSE
DISASTER MAN.	R 250 000	Buying of disaster relief items
FIRE SERVICES	R21 million	Used for firefighting operations

8.11. ENVIRONMENTAL ANALYSIS

8.11.1. RIVERS, HYDROLOGICAL WATER FEATURES AND ECOSYSTEM

The Municipality is richly blessed with numerous naturally occurring water bodies which range from riverine systems, wetlands, wet marshes and most importantly the ocean. Most rivers run in an easterly direction from high altitudes and finally channelling into the warm Indian Ocean. The most important rivers in the context of the Municipality are:

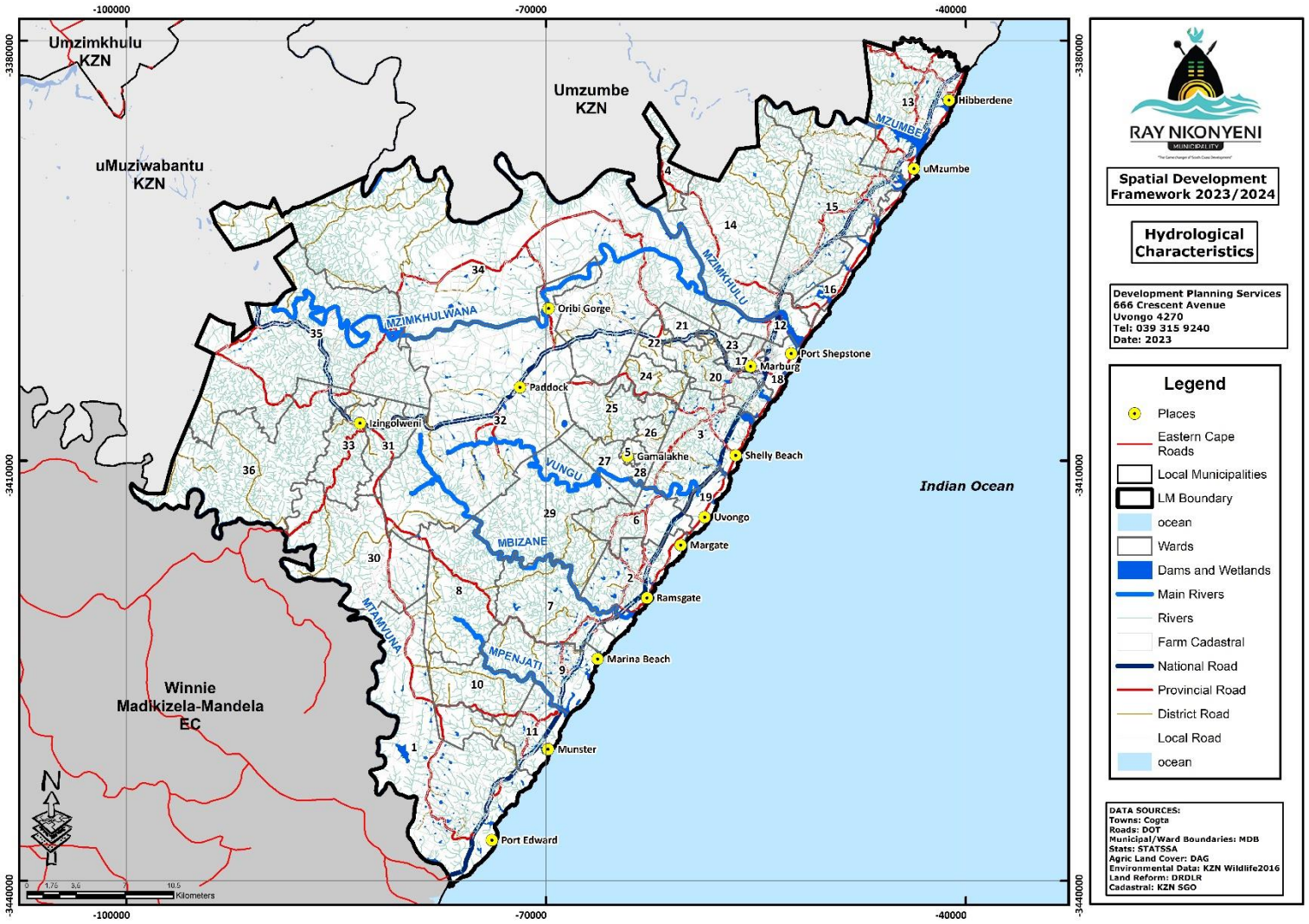
- Mzimkhulu River;
- Mtamvuna River;
- Mbizana River;
- Vungu River;
- Mzumbe River; and
- Mzikhulwane River.
-

The banks of these rivers contain high value biodiversity such as natural vegetation and ecosystems. The Municipality is also characterised by a number of wetlands areas which are connected to the major catchments areas such as the rivers and the ocean. As can be seen on the Table below the Mzimkhulu and Mtamvuna are the two major perennial rivers found in Ray Nkonyeni. According to the Ugu Biodiversity Sector Plan (2014) the sub-quaternary catchments for the Mzimkhulu, Mtamvuna and portions of the Mtwalume catchment have been identified as National Freshwater Ecosystem Priority Areas (NFEPA) which are a priority for meeting national aquatic conservation targets. Furthermore, it is also important to note that these two major perennial rivers are identified as being in a good condition (A/B class) despite the current levels of modification in the district (Ugu Biodiversity Sector Plan). In the context of Ray Nkonyeni, the Uvungu River is identified as being moderately affected by modification (C-class).

Table 12: Water Resources and Freshwater Ecosystem

WATER RESOURCES AND FRESHWATER ECOSYSTEM PRIORITIES			
Feature	**Description**	**Desired State**	**Length (km)**
Mtamvuna River	The Mtamvuna has formed prominent steep-sided river valleys that extend a considerable distance inland to drain the western inland regions of the District. This river is also free flowing (lacking significant impoundments) which is significant given the levels of impoundment in most South African rivers.	This river is currently in a good condition and should remain so. It should receive top priority for retaining its free-flowing character (i.e. no impoundments). This means that land-use practices or activities that will lead to deterioration in the current condition of a river FEPA are not acceptable.	144.1
Mbizana River	This river has a continuous flow in parts of its stream bed all year round during years of normal rainfall.	Moderately modified, a loss and change of natural habitat and biota have occurred but the basic ecosystem functions are still predominantly unchanged. This means that land-use practices or activities that will lead to deterioration in the current condition of a river FEPA are not acceptable	32.1
Vungu River	This river has a continuous flow in parts of its stream bed all year round during years of normal rainfall.	Moderately modified, a loss and change of natural habitat and biota have occurred but the basic ecosystem functions are still predominantly unchanged. This means that land-use practices or activities that will lead to deterioration in the current condition of a river FEPA are not acceptable	32.6
Mzikhulwana River	This river has a continuous flow in parts of its stream bed all year round during years of normal rainfall.	Largely natural with few modifications, a small change in natural habitats and biota may have taken place but the ecosystem functions are still predominantly unchanged. This means that land-use practices or activities that will lead to deterioration in the current condition of a river FEPA are not acceptable	141.9
UMzimkhulu River	UMzimkhulu River has exactly the same characteristics as the Mtavuma River both the rivers have formed prominent steep-sided river valleys that extend a considerable distance inland to drain the western inland regions of the District. These two rivers are also free flowing (lacking significant impoundments) which is significant given the levels of impoundment in most South African rivers.	This river is currently in a good condition and should remain so. It should receive top priority for retaining its free-flowing character (i.e. no impoundments). This means that land-use practices or activities that will lead to deterioration in the current condition of a river FEPA are not acceptable.	130.5

Mpenjanti River	Mpenjanti River emerges within the inland of Ray Nkonyeni and it runs up to the Indian Ocean to form an estuary. There are extensive sugar fields and orchards located on the middle to lower coastal parts of the municipality. It is part of Mpenjanti Nature Reserve and Estuary.	The storage regulation in this water resource zone is low and the only dams in the area include a number of small farm dams in tributaries and a few Instream dams. Land use activities in the water resources zones generally include cultivation (mostly sugar cane with some orchards). Rural settlements are usually located more inland with semi-urban and urban areas towards the coast.	15.4
Mzumbe River	This river has a continuous flow in parts of its stream bed all year round during years of normal rainfall.	Largely natural with few modifications, a small change in natural habitats and biota may have taken place but the ecosystem functions are still predominantly unchanged. This means that land-use practices or activities that will lead to deterioration in the current condition of a river FEPA are not acceptable	75.4
Wetlands	There are numerous relatively small wetland areas scattered throughout the Hibiscus Coast LM, as with rivers the development buffer around wetlands is dependent on the local situation such as the type of activity an d may extend beyond the statutory 20m note that for particular activities within 32metres of the edge of a wetland, environmental authorisation is required from the relevant environmental authorities (NEMA EIA regulations 2010)	All wetlands should be protected from development impacts. Wetlands that are in a good condition should remain so. Wetlands that are not in a good condition should be rehabilitated to their best attainable ecological condition. This means that land-use practices or activities that will lead to deterioration in the current condition of a wetland are not acceptable, and land-use practices or activities that will make rehabilitation of a wetland difficult or impossible are not acceptable.	



Map 25: Hydrological Characteristics

8.11.2. BIODIVERSITY CONSERVATION

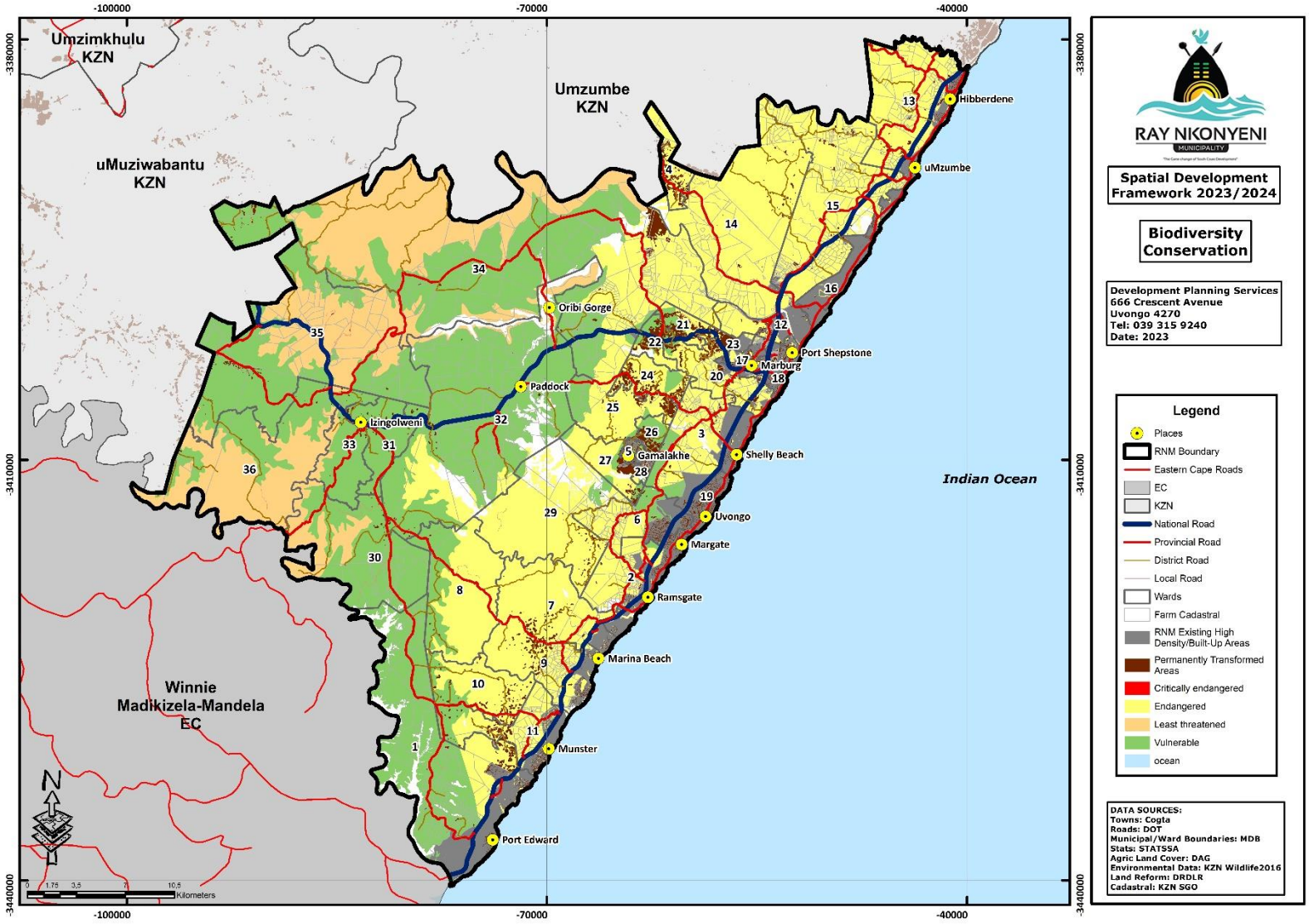
Ray Nkonyeni LM contains several sensitive vegetation types or areas of conservation significance. These areas have been identified as being of conservation value as they are necessary to maintain a representative sample of biodiversity and to sustain the functioning of that particular ecosystem. Note that the conservation significance of these areas is not necessarily related to their condition, but the need to conserve these sites in order to meet provincial and national conservation targets. From a national perspective, the municipality contains several Critically Endangered (CE) ecosystems, namely Interior South Coast Grasslands, Margate Pondoland-Ugu Sourveld, and Southern Coastal Grasslands, and Endangered (E) ecosystem types, namely Oribi-Port Edward Pondoland-Ugu Sourveld vegetation types.

The implications for development are that certain activities within these areas require environmental authorisation from the relevant environmental authorities and may be subject to an offset requirement (Ezemvelo KZN Wildlife (2009), Norms and Standards for Biodiversity Offsets: KwaZulu-Natal Province). From a provincial perspective, the municipality contains large natural areas which are classified as irreplaceable in terms of their conservation value. As with the above, certain activities within these areas may require environmental authorisation and an offset. There are six declared formal conservation areas which are Umtamvuna, Mbubazi, Mpenjati, Skyline, Oribi Gorge and Umzimkhulu river valley Nature Reserves. In 2009, Ezemvelo KZN Wildlife developed a marine conservation plan which identifies the best sites for marine protected areas based species, habitats and threat data. As shown below, there are several sites of conservation significance on the coast of the municipality, particularly between Pumula and Uvongo, near Hibberdene, and approximately 10 kilometres off the coast of Shelly Beach (i.e. Protea Banks). The implications for development are that certain activities are prohibited or restricted within these marine areas of high conservation value. Further to this, there should be careful management of on-shore activities which can potentially impact negatively on the biodiversity of these areas.

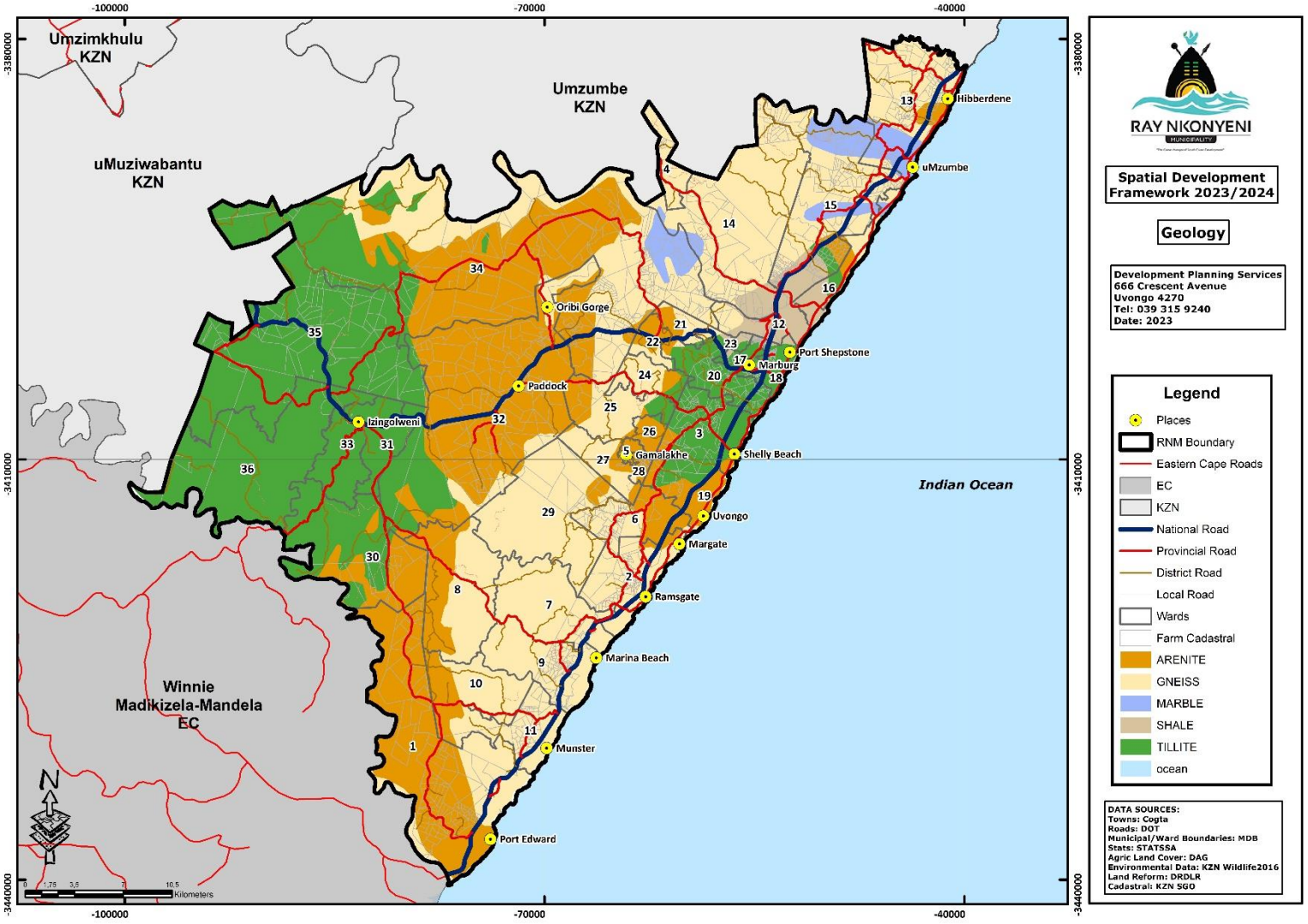
8.11.3. GEOLOGY

The soil geology of the area indicates that Ray Nkonyeni is covered by seven geological formations. The predominant is Margate gneiss, followed by Msikaba Arenites, Gneiss, Tillete, Shale, Marble and Natal Group Arenite. Margate gneiss originates from a high grade metamorphic rock which implies that it has been subjected to higher temperatures and pressures. It is formed by the metamorphosis of granite, or sedimentary rock. Gneiss displays distinct foliation, representing alternating layers composed of different minerals.Gneiss does not preferentially break along planes of foliation because less than 50% of the minerals formed during the metamorphism are aligned in thin layers. Because of the coarseness of the foliation, the layers are often sub-parallel, i.e. they do not have a constant thickness, and discontinuous. Gneiss is typically associated with major mountain building episodes. During these episodes, sedimentary or felsic igneous rocks are subjected to great pressures and temperatures generated by great depth of burial, proximity to igneous intrusions and the tectonic forces generated during such episodes. Shale originates from Beaufort Geology Group of the Karoo Super Group, which comprises shale.This type of geology has high potential of eroding, low potential for underground water supplies but suitable for foundations. The area's soils is moderately hydromorphic, shallow to partially shallow, sandy grey with Kroonstad (contains particles of clay subsoil) and Cartref (shallow with particles of stony soil). It is suitable for grazing, agriculture and urban development. Marble is a non-foliated metamorphic rock composed of recrystallized carbonate minerals, most commonly calcite or dolomite. Geologists use the term "marble" to refer to metamorphosed limestone; however, stonemasons use the term more broadly to encompass un-metamorphosed limestone. Marble is commonly used for sculpture and as a building material. Natal Group Arenite is a sedimentary geological formations found in Karoo Basin region of Southern Africa. It is carbon-rich sedimentary deposit; owing to the high vegetation content of the original sediment i.e. in some instances this type of geological formation contains mineral occurrences for coal mining. In terms of construction mudstone is characterized with few serious geotechnical problems compared with other soil formations but it is significant to the construction industry because it is frequently encountered in civil engineering activities involving foundations, excavations and earthworks. Its nature is such that its properties may vary between a soil and a rock depending on its detailed lithology and its state of weathering. As a result of this, in some cases, weaker material may be found below stronger rather than the more normal weathering progression where the weakest material occurs at the surface and becomes fresher and stronger with depth.

Map 26: Ray Nkonyeni Biodiversity Conservation



Map 27: Ray Nkonyeni Geology



8.11.4. CLIMATE CHANGE

The effects of climate change in South Africa are not limited to increased water scarcity in some parts of the country and drastic qualitative changes in the water supply, but extend to losses in biodiversity and rangelands, which impacts in the farming and agricultural sector, as well as possible increases in infectious and respiratory diseases. Climate change will have a significant impact on food availability, food accessibility and food systems stability. Climate change affects the large proportion of South Africa's population who have a low resilience to extreme climate events due to poverty, inadequate housing infrastructure and location.

Climate change affects the decision making processes of the vulnerable poor people in South African communities, such as; where they choose to live and which areas are sustainable for their livelihoods. In some households people survive on subsistence farming as they may not have the opportunities to access formal employment channels neither are they close to any public facilities which could enable them to access employment opportunities. Therefore in such cases subsistence farming becomes a way of life and survival.

However because of climate change, this form of livelihood is mostly threatened leaving subsistence farmers vulnerable to drought or forced to relocate from one area to another, where there is rainfall or access to water in order to survive. In some cases the inability to access potable water forces people to relocate into other areas where water is available. These patterns then directly affect settlement patterns, in terms of where most informal settlements tend to conglomerate within a Municipal area. Furthermore they determine which parts of municipal areas have the most sporadic development of informal settlements despite efforts by planners and local authorities to curb housing backlog and demand. Climate change may also influence the switch from subsistence farming as a form of livelihood to people moving closer to areas in which they can access public facilities or areas of mobility such that they have access to economic opportunities in the market.

Cities are also required to deal with the rising threats of climate change and dwindling resources. These constraints mean that cities that do not plan adequately will face higher costs to residents, a decline in welfare, and reduced economic competitiveness. Preparations for these circumstances typically require decades of forward-thinking development guidance.

The effects of climate change has been experienced in the municipal area both inland and coastal areas over the past few years. The 2008 floods destroying many houses mainly at Murchison/ Bhobhoyi area which happened together with the tidal surge destroying a lot of public infrastructure and private property along our beaches. The response on the inland has been to rebuild most of the destroyed houses and on the coast restoring public infrastructure with latest (soft) engineering requirements. Ever since 2008 almost every year the municipalities more than one flash floods affecting some of its communities. Damage private property and public infrastructure is experienced. Climate change is recognized as the major environmental problem facing the globe. Escalating greenhouse gas emissions contribute towards climate change and will ultimately impact on human health, food security, natural resources, sea level rise, land loss and coastal infrastructure. Climate change embraces far more than temperature change and may include changes in rainfall patterns, sea level rise, and the spread of infectious disease such as malaria, increase alien vegetation invasion and loss of biodiversity.

Climate change is likely to cause a number of challenges for Ray Nkonyeni Municipality, linked to global impacts such as increased temperatures, extreme weather events (e.g. flooding and drought), sea level rise and climate variability. As such, climate change runs the risk of undoing all of the development gains of the last one and a half decades; climate change adaptation in all sectors will have to become one of the Municipality's top development priorities.

Temperatures in the Ray Nkonyeni are likely to increase by 1.5^{o}C and 2.5^{o}C by 2065 and by 3.0^{o}C and 5.0^{o}C by 2100. Projected annual rainfall changes are likely to include an increase in aggregated rainfall by 2065 with an increase of up to 500 mm by 2100. This increase is likely to be manifested as an increase in extreme rainfall events and stream flow intensity across the municipal area with prolonged dry spells between rainfall events. Sea level rise along Municipality's coastline is already occurring at 2.7 cm per decade and may accelerate into the future. (Source: http://www.epa.gov/ climatechange/science/future.html - 20 March 2015)

Climate change impacts for the Ray Nkonyeni may include:

- An increase in the frequency and intensity of floods and droughts;

- A decrease in water availability due to changed rainfall patterns and increased evaporation; this will affect subsistence dry land farmers the most.
- An increase in erosional capacity of river courses, resulting in the loss of more top soil, thus decreasing the agricultural value of land and increasing siltation in dams.
- Infrastructural damage as a result of extreme weather events causing flooding, affecting human wellbeing and safety as well as insurance costs;
- An increase in erosion of coastal areas due to sea-level rise;
- Higher energy consumption due to increased residential cooling load;
- An increase in economic losses due to property damage and decreased tourism revenue;
- An increase in heat-related vector-borne (e.g. malaria) and water-borne (e.g. cholera) illnesses;
- An increase in heat stress, leading to dehydration, particularly for those that reside in the urban areas, as well as children and the elderly;
- Changes in the geographical distribution of plants and animals with extinction of species that are unable to move and an increase in the prevalence of alien invasive species. This will negatively affect the biodiversity of the Municipal Area and the associated goods and services;

enhancing the city's ability to cope with climate change impacts. The likely climate change impacts have been assessed and plans, programmes and projects have been developed to assist the Municipality in dealing with these impacts.

The mitigation and adaptation work streams of the MCPP are located in the Energy Office and the Environmental Planning and Climate Protection Department respectively. The issue of energy challenges and demand to reduce use of traditional electricity thereby reducing our emissions as the country is also on the agenda for the municipality. In this regard Eskom has offered second round of distributing energy efficiency globes. The municipality is also exploring ways to switch to energy saving alternatives in its traffic and streetlights as well as all public infrastructures in the municipal area. The use of solar for heating water and lighting is being considered. A total of seven projects have been submitted as applications to the Green Fund's window that opened towards the end of 2012 and the results are awaited.

- Further loss of critically endangered grassland habitats as they are outcompeted by woody species able to utilize the higher concentrations of CO^2 in the atmosphere.
- A reduction in yield of staple food crops, such as maize;
- Changes in the optimal planting and harvesting dates for crops as well as land suitable for crop production;
- Heat stress increasing livestock and poultry mortality rates;
- An increase in respiratory problems in the city due to a decrease in air quality (e.g. changes in the concentration and distribution of near-surface ozone) and increased dampness; and
- Deterioration of foods leading to increased incidents of food-borne diseases.

The areas particularly vulnerable to sea-level rise are coastal wetland and dune ecosystems. Shoreline Management Plans are required to determine what adaptation interventions if any are required now or in the future. To respond to these changes the Ray Nkonyeni has to develop a similar approach that was initiated by the Ethekwini Municipality, by initiating the Municipal Climate Protection Programme (MCPP) in 2004. This was a phased programme, which has focused on climate change adaptation and

Ugu has developed a Climate Change response which states that SDF's provide key entry points for addressing pressing climate change related issues and climate change responsive spatial development planning will be critical to the long terms sustainability of the Ugu DM. Apart from support climate resilient development, failure to take climate change impacts into account could deem municipalities liable for damage and losses resulting from negligent planning decisions. The municipal SDF should consider climate change impacts on the following areas:

- Sensitive, vulnerable, highly dynamic and stressed ecosystems in the municipal area
- Vulnerable neighbourhoods;
- Desertification;
- Soil loss;
- Ecologically sensitive areas;
- Drought vulnerable areas;
- Flood risk areas or low-lying areas;

- Estuaries;
- Infrastructure and facilities in close proximity to the ocean;
- Impact of deforestation and the land use changes that may result from climate change and migration;

Response Options are identified as follows:

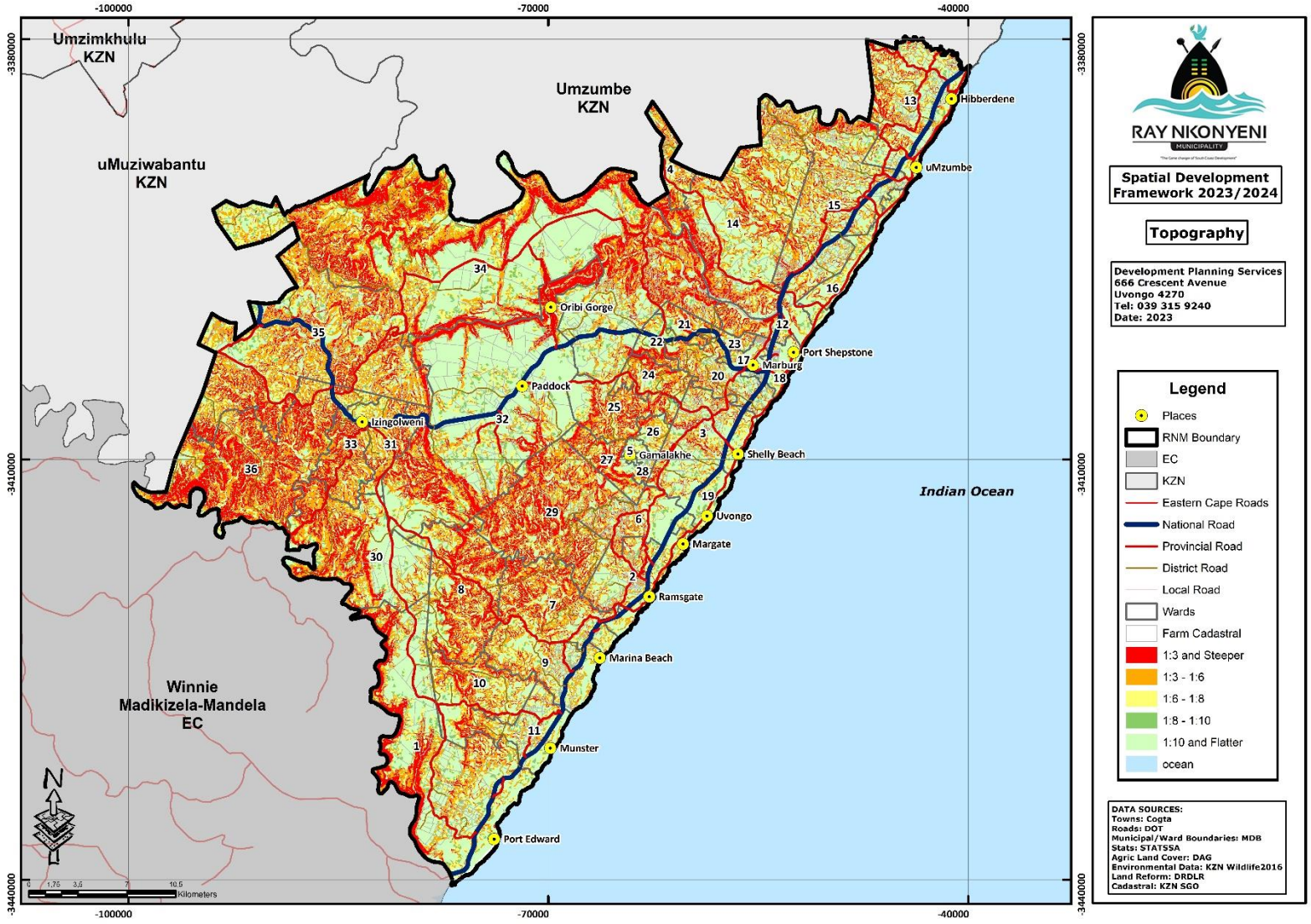
- Map vulnerable areas (flood lines, etc.) and implement development bans in highly vulnerable zones;
- Implement land use planning and zoning to avoid building and development infrastructure in hazard prone areas;
- Relocate existing development away from areas of high risks;
- Strengthen building code requirements according to increased risks of flooding, heat waves,
- intense storms on building and infrastructure development projects;
- Maintain and upgrade drainage systems;
- Consider permeable pavements, green roofs and rain tanks to increase on-site retention of storm water;
- Building regulation to ensure efficiency in all new buildings – monitor and enforce and encourage best practice development;
- Densification of land use through zoning regulations to support high density living and work and mixed use;
- Development preference given to developments on priority nodes;
- Ensure thorough planning reduces incidence of unplanned population and economic growth and ensure contingency for unplanned settlements/growth; and
- "Smart growth" planning—a strategy that highlights high-density, mixed-use, transit-oriented development— also has other goals, such as maintaining open space, farmlands, and other natural areas and directing city resources toward existing communities rather than diverting them to new development in outlying areas.

8.11.5. SLOPE ANALYSIS

The slope is generally flat along the coast and within the immediate adjoining farming areas. However as one move towards the inland of the municipality, the terrain changes and become undulating with some parts that are very steep and undevelopable. The majority of the rural areas with the very steep terrain include KwaXolo, KwaNzimakwe and Nsimbini. This is due to the mountainous conditions of these areas and the existence of major river catchments. In urban areas, a number of river systems contribute to the rolling aspect. Conditions identified inland from Ramsgate, Southbroom and Marina Beach the slope conditions are primarily greater than 1:3, which makes settlement in Dumezulu, Thelawayeka, Mbecuka and Ingwemabala regions more challenging.

Higher density settlements are located, and to a degree forced onto the lower lying, gentle slopes and plateaus. Slope conditions of less than 1:5 are more favourable for development, as costs are lower due to more manageable topographical conditions. The settlement patterns, growth and development within the Municipality are determined by the topographical conditions. The steeper slopes within the region will make commercial and industrial development more challenging. Therefore making the flatter areas within the Municipality more attractive, however residential development is more flexible as it requires less floor areas and therefore could be built on steeper slopes. The following cross-section through Hibberdene, Port Shepstone and Port Edward are indicated on the adjacent map, and clearly illustrate the topographical conditions found within the Municipality.

Map 28: Ray Nkonyeni Topography



8.10.6. ESTUARY MANAGEMENT PLAN

Estuaries are recognised as particularly sensitive and dynamic ecosystems, and therefore require above-average care in the planning and control of activities related to their use and management. For this reason, the National Environmental Management: Integrated Coastal Management Act (No. 24 of 2008, as amended by Act 36 of 2014) (ICMA), via the prescriptions of the National Estuarine Management Protocol (the Protocol), require Estuary Management Plans to be prepared for all estuaries in order to create informed platforms for efficient and coordinated estuarine management.

The Protocol identifies the Ray Nkonyeni Municipality (RNM) as the Responsible Management Authority (RMA) responsible for developing and co-ordinating implementation of the EMPs within their municipal area. This document serves as the collective EMP for seven selected estuaries, namely the:-

- ✓ Mhlangamkulu,
- ✓ uMthente,
- ✓ Mzimkulu,
- ✓ Mbango,
- ✓ Mhlangeni,
- ✓ Bilanhlolo and
- ✓ uMuntongazi.

The purpose of the EMP is to provide the overarching Vision for the future desired state of the RNM estuaries, and thereby guide the management of the human activities in and around these systems by setting out priority management objectives and related actions/activities.

The EMP applies to the Estuarine Functional Zone (EFZ) of each individual estuary, that is, the area below the 5m topographical contour, which encapsulates the flood plain, a range of estuarine habitats, and variable estuarine processes and functions, such as backflooding.

In managing the seven (7) identified estuaries to be managed. The plan identifies the following tabulated objectives which are properly aligned to indicators:-

Table 13: Objectives and Indicators

	Sector / Category	Key Objective	Indicators	Priority
1	Estuarine Health and Functioning	The ecological health and natural functioning of the RNM estuaries is improved and safeguarded	• Ecological health of estuaries is improved • Estuarine habitat is regained and restored	High
2	Conservation	The biodiversity of the RNM estuaries is conserved	• Formal and informal estuarine conservation areas are designated/declared	Medium
3	Land-use and Infrastructure Planning and Development	All developments and proposed changes in land-use, including infrastructure and agriculture, which impacts or could impact on the RNM Estuaries, are assessed and controlled	• All development and land use changes surrounding and within the EFZ comply with environmental legislation and environmental best practice / risk aversion approach	High
4	Institutional and Management Structures	Effective management and co-operative governance of the RNM estuaries by the RMA is achieved	• Municipal estuarine management co-ordinator appointed • Estuary advisory committee established • Ongoing meetings of estuary advisory committee • Estuarine bylaws are drafted	High
5	Socio-economic considerations	Socio-economic benefits are enhanced and regulated to ensure sustainable resource use	• Increase in employment opportunities and figures	Medium

			• Resources utilised within legal limits	
6	Education, awareness, monitoring and research	The scientific aspects, value and importance of the RNM estuaries is well understood and made known to members of society	• Increase in number of research projects • Signage erected • Awareness programme developed and successfully implemented on an on-going basis	**Medium**

(Source: Esturay Management Plan, 2017)

8.10.6.1. ESTUARY MANAGEMENT PRIORITIES

A full range of management actions has been identified for each estuary to facilitate the achievement of the management objectives. Management priorities per estuary are summarised in the table below. The sectors pertaining to Education, Awareness, Monitoring and Research; and Institutional and Management Structures are generic across all estuaries; while the remaining sectors are more, or less, important in some systems (e.g. conservation priorities vary between the estuaries). In each plan, priority actions (indicated as high in **red**, medium in **yellow**) are summarised for ease of reference.

Table 14: Management Priorities

Management Objective (Priority)		MK	MT	MZ	MB	MH	BI	TG
ESTUARINE HEALTH & FUNCTION								
1	Secure adequate quantity and quality of freshwater input to improve and maintain ecosystem health and functioning	X	X	X	X	X	X	X
2	Minimise pollution by identifying and addressing activities that lead to poor environmental quality	X / X	X / X	X	X	X	X	X / X
3	Control the spread and densification of both aquatic and terrestrial invasive alien plant species	X	X	X	X	X	X	X
4	Rehabilitate degraded and transformed areas	X	X	X	X		X	X
5	Promote sustainable agriculture	X	X	X		X		
6	Ensure effective mouth management		X	X	X	X	X	
CONSERVATION								
1	Ensure the conservation of estuarine habitats	X / X	X / X	X / X	X / X	X	X / X	X
2	Establish conservation /protected areas	X		X / X	X	X	X	X
3	Ensure sustainable resource use through an effective level of compliance management	X	X / X	X	X	X	X / X	X
4	Preserve and manage the heritage/cultural resources	X		X				
LAND USE & INFRASTRUCTURE PLANNING & DEVELOPMENT								

1	Ensure the effective adoption and implementation of EMP	X	X	X	X	X	X	X
2	Minimise potential impacts of climate change	X / X	X / X	X	X / X	X / X	X	X
3	Facilitate and manage the sustainable utilisation and development of the areas adjacent and within the Estuarine Functional Zone	X / X	X / X	X / X	X	X / X	X	X / X
INSTITUTIONAL & MANAGEMENT STRUCTURES								
1	Ensure effective co-ordination of estuarine management responsibilities	X / X	X / X	X / X	X / X	X / X	X / X	X / X
2	Define co-operative governance arrangements for estuaries in the RNM	X / X	X / X	X / X	X / X	X / X	X / X	X / X
3	Secure financing for estuarine management initiatives	X	X	X	X	X	X	X
SOCIO ECONOMIC CONSIDERATIONS								
1	Provide safe, clean, equitable and controlled access		X / X	X				X
2	Regulate recreational use in and around the estuaries	X	X	X / X	X	X	X	X
3	Maximise economic benefits			X	X	X	X	X
EDUCATION, AWARENESS, MONITORING & RESEARCH								
1	Promote high levels of public awareness and appreciation of the value of RNM estuaries	X / X	X / X	X / X	X / X	X / X	X / X	X / X
2	Enhance our knowledge and understanding through scientific research and monitoring	X / X	X / X	X / X	X / X	X / X	X / X	X / X
3	Monitor the condition and use of RNM estuaries	X	X	X	X	X	X	X
4	Establish a system for reporting environmental non-compliance & other incidents of concern relating to RNM estuaries	X / X	X / X	X / X	X / X	X / X	X / X	X / X

(Source: Estuary Management Plan, 2017)

These management objectives are grouped according to the above key objectives, sectors or categories of issues. Ecological and socio-economic consequences of no action, expected availability of resources, cost and expected duration of activity are included and provide assistance in the selection of management priorities for the 5-year cycle of this collective EMP.

1. ESTUARY HEALTH AND FUNCTION

Key Objective 1: The ecological health, natural functioning and biodiversity of the RNM estuaries is improved and safeguarded.

Management Objective 1.1: Secure adequate quantity and quality of freshwater input to improve and maintain ecosystem health and functioning.

Proposed activity	Ecological impact/socio-economic consequences of no action	Expected availability of human resources	Estimated cost	Expected duration
Lobby DWS Minister to sign off the recommended freshwater reserve required	Further degradation of the estuary, continued unsustainable abstraction and loss of functioning	Resources available in Municipality, DWS as well as NGOs	Part of mandate	Until signed off
Once signed off, follow up on implementation of water resource classification process	Further degradation of the estuary, continued unsustainable abstraction and loss of functioning	Resources available in Municipality, DWS as well as NGOs	Part of mandate	Once classified
Investigate and police illegal water abstractions	Further degradation of the estuary and continued unsustainable abstractions	DWS has limited resources	R100 000 for investigation and Compliance part of mandate	3 month study

Management Objective 1.2: Minimise pollution by identifying and addressing activities that lead to poor water quality.

Proposed activity	Ecological impact/socio-economic consequences of no action	Expected availability of human resources	Estimated cost	Expected duration
Identify sources and types of pollution in order to take steps to remedy or mitigate	Continued pollution of system and resultant negative impacts on biodiversity, tourism and human health	Limited resources available	R250 000	6-month study
Undertake necessary repairs, upgrades and expansions for sewage infrastructure as a matter of priority	Continued pollution of system and resultant negative impacts on biodiversity, tourism and human health	Limited financial resources allocated to maintenance & scarce skills to implement	>R10 m	ongoing
Improve treatment of wastewater	Continued eutrophication, poor water quality and resultant negative impacts on biodiversity, tourism and human health	Limited financial resources allocated to maintenance & scarce skills to implement	>R10 m	ongoing
Include estuary in Municipal Waste water management plan	Continued eutrophication, poor water quality and resultant negative impacts on biodiversity, tourism and human health	Ugu/ RNM have limited resources	Part of mandate	Cyclical review

Develop and implement basic water quality monitoring programme	Unknown levels of pollution of systems, lack of knowledge of estuarine functioning	Specific responsibility of proposed estuarine co-ordinator	Part of mandate. Capital expenditure of R200 000	Once a month and after events/ incidents
Establish 'Adopt-a-river' programme to facilitate solid waste clean up	Accumulation of pollution and resultant negative impact on biodiversity, tourism and human health	Resources available in Municipality, DWS as well as I&APs	R50 000 per event	Bi-annual events
Develop an SOP (contingency plan) for response irt emergency events (e.g. pollution spills) including early warning system and procedures for incident reporting, ad hoc monitoring etc.	Un-coordinated, ad hoc and delayed responses to emergencies/events/incidents and resultant negative impacts on biodiversity, tourism and human health	Resources available in Municipality	R40 000	3-month study
Investigate use of SUDS for stormwater run-off	Continued excess of contaminated stormwater run-off, erosion and sedimentation	Resources available in Municipality, buy-in required	R50 000	Once off training event
Monitor stormwater management systems	Flooding, pollution and damage to infrastructure and resultant negative impacts on biodiversity, tourism and human health	Limited human resources available	Part of mandate	ongoing

Management Objective 1.3: Control the spread and densification of both aquatic and terrestrial invasive alien plant species.

Proposed activity	Ecological impact/socio-economic consequences of no action	Expected availability of human resources	Estimated cost	Expected duration
Identify and prioritise infested areas	Continued spread and densification of IAPs	Specific responsibility of proposed estuarine co-ordinator	Part of mandate	Once a month (during monitoring)
Identify drivers of alien invasive species and investigate appropriate mitigation measures	Unsuccessful mitigation actions, continued spread and densification of IAPs	Limited resources, Appointment of service provider required	R150 000	3 month study

Develop and implement invasive species eradication/maintenance programme	Continued spread and densification of IAPs and resultant negative impacts on biodiversity, tourism and human health	Resources available in EPIP programmes (WftC, WfW)	>R10 m	ongoing
Lobby SANRAL to maintain railway reserve	Continued spread and densification of IAPs and resultant negative impacts on biodiversity, tourism and human health	Resources available in RNM, EDTEA, Ezemvelo KZN Wildlife, I&APs (conservancies)	Part of mandate	Ongoing negotiations until programme developed

Management Objective 1.4: Rehabilitate degraded and transformed areas.

Proposed activity	Ecological impact/socio-economic consequences of no action	Expected availability of human resources	Estimated cost	Expected duration
Identify detrimental activities, compile degradation profiles and identify priority areas for rehabilitation	Continued degradation of the estuarine habitat and biodiversity within the EFZ	Specific responsibility of proposed estuarine co-ordinator, supported by external service provider	Part of mandate. R400 000	6-month study
Develop and implement rehabilitation programme (with ongoing care of rehabilitated areas)	Continued degradation of the estuarine habitat and biodiversity within the EFZ	Resources available in EPIP programmes (WftC, WfW)	>R5 m	ongoing
Lobby for landowners and respective companies to rectify damages/degraded areas on their property	Continued degradation of the estuarine habitat and biodiversity within the EFZ	Resources available in RNM, EDTEA, Ezemvelo KZN Wildlife, I&APs (conservancies)	Part of mandate	Ongoing negotiations until programme developed

Management Objective 1.5: Promote sustainable agriculture

Proposed activity	Ecological impact/socio-economic consequences of no action	Expected availability of human resources	Estimated cost	Expected duration
Lobby famers to implement agricultural best practice (including withdrawal or set-back from the EFZ, reduction of the application of inorganic fertilisers)	Further degradation of the estuary, habitat loss, continued reduction of freshwater input, sedimentation and continued nutrient loading leading to eutrophication of the estuary	Limited resources available within EDTEA and KZN DARD	Part of mandate	ongoing

Management Objective 1.6: Ensure effective mouth management.

Proposed activity	Ecological impact/socio-economic consequences of no action	Expected availability of human resources	Estimated cost	Expected duration
Where artificial breaching is required, a Mouth Maintenance Management Plan must be developed per estuary and approved prior to any breaching activity	Carte blanch artificial breaching, interference with natural estuarine functioning, resultant negative impacts on biodiversity and tourism	Specific responsibility of proposed estuarine co-ordinator, supported by external service provider	R40 000 per plan	3-month study per plan
Design and construct more appropriate river crossings (i.e. causeway) to remove flood risk and pressure for mouth interference	Continued threat to human safety during closed mouth conditions, and resultant pressure to artificially breach the mouth	Limited resources, Appointment of service provider required	>R? million	1-year study (excluding construction)

2. CONSERVATION

Key Objective 2: The biodiversity of the RNM estuaries is conserved.

Management Objective 2.1: Ensure the conservation of estuarine habitats.

Proposed activity	Ecological impact/socio-economic consequences of no action	Expected availability of human resources	Estimated cost	Expected duration
Adopt and implement spatial zonation plan	Continued loss/degradation of EFZ and estuarine resources	Resources available in RNM, Specific responsibility of proposed estuarine co-ordinator	R50 000	Initial action, Ongoing
Develop and publish estuarine bylaws to support spatial zonation	Continued loss/degradation of EFZ and estuarine resources	Appointment of service provider required	R70 000	Once off
Instate educational signage to promote conservation **	Lack of knowledge and awareness of zonation of activities	Specific responsibility of proposed estuarine co-ordinator	R50 000	Initial action, and then as when required

Management Objective 2.2: Establish conservation/ protected areas (PA)

Proposed activity	Ecological impact/socio-economic consequences of no action	Expected availability of human resources	Estimated cost	Expected duration
Investigate protection opportunities	No conservation of EFZ and resultant negative impacts	Specific responsibility of proposed	Part of mandate	Ongoing until successful

and mechanisms with Ezemvelo KZN Wildlife (e.g. conservation reserve, MOU etc.)	on biodiversity and tourism	estuarine co-ordinator		
Engage with land owners and stakeholders (i.t.o. conservation status, stewardship agreements etc.)	No conservation of EFZ and resultant negative impacts on biodiversity and tourism	Specific responsibility of proposed estuarine co-ordinator	Part of mandate	Ongoing until successful
Implement conservation status (formal PA status, stewardship agreement, conservation reserve in SDF)	No conservation of EFZ and resultant negative impacts on biodiversity and tourism	Dependent on type of conservation status	Dependent on type of conservation status	Dependent on type of conservation status

<u>Management Objective 2.3</u>: Ensure sustainable resource use through an effective level of compliance management.

Proposed activity	Ecological impact/socio-economic consequences of no action	Expected availability of human resources	Estimated cost	Expected duration
Adopt and implement spatial zonation plan using buoys	Lack of knowledge and awareness of zonation of activities	Specific responsibility of proposed	Part of mandate, Capital	Initial action, and ongoing maintenance
(water) and beacons (land) where required.	Ongoing inappropriate activities, behaviour and potential accidents Disturbance to and over exploitation of living resource	estuarine co-ordinator	expenditure R40 000	
Enforce compliance with spatial zonation plan and associated by-laws governing human activities (e.g. habitat protection)	Lack of knowledge and awareness of zonation of activities Ongoing inappropriate activities, behaviour and potential accidents Disturbance to and over exploitation of living resource	DAFF has limited resources (i.r.t. MLRA), RNM has limited resources	Part of mandate	Ongoing
Investigate and implement measures to control the use of living resources (i.e. MLRA) (Patrols by conservancy members / ad hoc compliance and monitoring	No control of estuarine resources and resultant negative impacts on biodiversity and tourism	DAFF has limited resources	Part of mandate	Ongoing
Restrict mining to outside the EFZ (unless with	Degradation of the estuary, loss of habitat	EDTEA and DMR has	Part of mandate	Ongoing

scientific backing of adequate sand budget)	biodiversity, sedimentation and water pollution loading Reduced available building sand and stone resources	limited resources		

Management Objective 2.4: Preserve and manage heritage / cultural resources.

Proposed activity	Ecological impact/socio-economic consequences of no action	Expected availability of human resources	Estimated cost	Expected duration
Develop a spatially explicit database of heritage/cultural resources	Lack of knowledge and awareness of heritage/cultural resources and resultant damage and abuse and loss	Specific responsibility of proposed estuarine co-ordinator, supported by external service provider (SAHRA)	R30 000	3-month study
Investigate and implement measures to protect areas of heritage/cultural importance	Damage/abuse and loss of heritage/ cultural resources	Specific responsibility of proposed estuarine co-ordinator, supported by SAHRA	R100 000 for initial action	Initial action, Ongoing maintenance

3. LAND-USE AND INFRASTRUCTURE DEVELOPMENT PLANNING

Key Objective 3: All developments and proposed changes in land-use, including infrastructure and agriculture, which impacts or could impact on the RNM Estuaries, are assessed and regulated.

Management Objective 3.1: Ensure the effective implementation of the EMP.

Proposed activity	Ecological impact/socio-economic consequences of no action	Expected availability of human resources	Estimated cost	Expected duration
Ensure the incorporation of the EMP into IDP and SDF	Wasted expenditure and uncoordinated estuarine management Continued degradation of EFZ and negative impacts on biodiversity, tourism and human health	Specific responsibility of proposed estuarine co-ordinator, supported by RNM Manager Town Planning	Part of mandate	Cyclical review
Ensure that estuary zonation and land use controls are reflected in SDF and LUMS (during review cycle)	Continued degradation of EFZ, including habitat loss/destruction Wasted expenditure	Specific responsibility of proposed estuarine co-ordinator, supported by RNM Manager Town Planning	Part of mandate	Cyclical review

Management Objective 3.2: Minimise the potential impacts of climate change.

Proposed activity	Ecological impact/socio-economic consequences of no action	Expected availability of human resources	Estimated cost	Expected duration
Identify high risk areas and open engagement with property owners	Continued degradation of EFZ and negative impacts on biodiversity, tourism and human health Inappropriate development and potential damage to property and loss of human life	Resources within EDTEA and ORI currently supporting initial process, however limited resources within RNM to engage with property owners. Support from external service provider required	R400 000	Until CML designated
Determine and designate Coastal Management Line (CML)	Continued degradation of EFZ and negative impacts on biodiversity, tourism and human health Inappropriate development and potential damage to property and loss of human life	Resources within EDTEA and ORI currently supporting this process	Part of provincial mandate	Approximately 1 year
Incorporate CML into SDF / LUMS	Continued degradation of EFZ and negative impacts on biodiversity, tourism and human health Inappropriate development and potential damage to property and loss of human life	Resources available in Municipality	Part of mandate	Once CML designated and then in review cycle
Encourage environmentally friendly developments/developers and maintain sound/ innovative building techniques (eg. no new development below the EFZ, energy efficient and water wise)	Inappropriate development and potential damage to property and loss of human life Unsustainable development practice	Resources available in Municipality (Building control) and EDTEA	Part of mandate	ongoing

Management Objective 3.3: Facilitate and manage the sustainable utilisation and development of the areas adjacent and within the EFZ.

Proposed activity	Ecological impact/socio-economic consequences of no action	Expected availability of human resources	Estimated cost	Expected duration
Ensure that all proposed developments adhere to the full suite of relevant environmental legislation	Continued degradation of EFZ and negative impacts on biodiversity, tourism and human health. Inappropriate development and potential damage to property and loss of human life. Unsustainable development practice	Limited resources within RNM, EDTEA, DMR and DWS	Part of mandate	ongoing
Undertake compliance monitoring for new structures being built	Unsustainable development practice and potential environmental damage	Limited resources within RNM and EDTEA	Part of mandate	ongoing
Ensure that all jetties and slipways are authorised and licensed in terms of the Seashore Act and NEMA	Continued uncontrolled access to the EFZ. Potential inappropriate development practice. Potential damage to estuarine	Limited resources within EDTEA. Specific responsibility of proposed	Part of mandate	ongoing
	habitat. Lack of knowledge and understanding of local situations.	estuarine co-ordinator		

4. INSTITUTIONAL AND MANAGEMENT STRUCTURES

Key Objective 4: Effective management and co-operative governance of the RNM estuaries by the RMA is achieved.

Management Objective 4.1: Ensure effective co-ordination of estuarine management responsibilities.

Proposed activity	Ecological impact/socio-economic consequences of no action	Expected availability of human resources	Estimated cost	Expected duration
Establish an effective and sustainable organisational structure within RNM for co-ordinating management activities (Designate an estuarine management function assigned to an Estuarine Management Co-ordinator, EMC)	Uncoordinated and ineffective implementation of EMP. Potential damage to EFZ with resultant negative impacts on biodiversity, tourism, property and human health.	Limited resources in RNM	~R300 000 per annum	ongoing
Individual agencies to	Uninformed and ineffective co-	Support external	~R6 000 per	Ad hoc

identify and address training needs among staff involved in estuarine management (RNM, Ugu, DWS, DAFF (e.g. for monitoring, visitor regulation and assistance, etc)	ordination of management interventions	service provider required	candidate per course	
Monitor and report on the progress of EMP actions and achievements	Uncoordinated and ineffective implementation of EMP. Potential damage to EFZ with resultant negative impacts on biodiversity, tourism, property and human health.	Specific responsibility of proposed estuarine co-ordinator	Part of mandate	Quarterly (municipal) and annual (DEA) reporting
RNM to chair the EAF meetings	Uncoordinated and ineffective implementation of EMP. Potential damage to EFZ with resultant negative impacts on biodiversity, tourism, property and human health.	Specific responsibility of proposed estuarine co-ordinator	Part of mandate	Quarterly meetings
Develop and maintain RNM estuaries information repository and database	Uninformed and ineffective co-ordination of management interventions	Specific responsibility of proposed estuarine co-ordinator	Part of mandate	Ongoing
Establish and manage a voluntary community monitoring team and data	Uninformed and ineffective co-ordination of management interventions, Potential additional expenditure on external service providers, Lack of monitoring and data generation	Specific responsibility of proposed estuarine co-ordinator	Part of mandate	Ongoing
Develop appropriate bylaws pertaining to key estuarine issues (e.g. clearance of vegetation for views, conservation of estuarine habitat, interference with estuarine mouths, permissible/non permissible uses/activities i.r.t. to spatial zonation, e.g. boating)	Ineffective implementation and compliance with EMP. Potential damage to EFZ with resultant negative impacts on biodiversity, tourism, property and human health.	Specific responsibility of proposed estuarine co-ordinator, supported by external service provider	~R150 000 per bylaw	Ongoing
Individual agencies to	Uncoordinated and ineffective	Limited resources,	Part of mandate,	unknown

acquire necessary equipment (e.g. office equip, water quality meter, boat, vehicle)	implementation of EMP. Potential damage to EFZ with resultant negative impacts on biodiversity, tourism, property and human health.	respective lead agencies	Capital expenditure	

<u>Management Objective 4.2:</u> Define co-operative governance arrangements for estuaries in the RMA.

Proposed activity	Ecological impact/socio-economic consequences of no action	Expected availability of human resources	Estimated cost	Expected duration
RNM to obtain agreement from government departments and other participating agencies in respect of their roles and responsibilities in estuarine management	Uncoordinated and ineffective implementation of EMP. Potential damage to EFZ with resultant negative impacts on biodiversity, tourism, property and human health.	Specific responsibility of proposed estuarine co-ordinator	Part of mandate	Ongoing
Establish a recommended functional estuary advisory forum (EAF), chaired by the RMA, (representative members of government and stakeholders to be members of the RNM EAF)	Uncoordinated and ineffective implementation of EMP. Potential damage to EFZ with resultant negative impacts on biodiversity, tourism, property and human health.	Specific responsibility of proposed estuarine co-ordinator	Part of mandate	Once off
Convene quarterly meetings to address estuarine matters and discuss progress on management actions	Uncoordinated and ineffective implementation of EMP. Potential damage to EFZ with resultant negative impacts on biodiversity, tourism, property and human health.	Specific responsibility of proposed estuarine co-ordinator with support from manager: Stakeholder Relations / customer care	R20 000 per annum	Ongoing
Maintain a stakeholder database for the dissemination of information	Uninformed stakeholders	Specific responsibility of proposed estuarine co-ordinator	Part of mandate	Ongoing
RNM EAF contributes to 5 year review of EMPs	Uncoordinated and ineffective implementation of EMP. Potential damage to EFZ with resultant negative impacts on biodiversity, tourism, property and human health.	Specific responsibility of proposed estuarine co-ordinator	Part of mandate	5 yr. Cyclical review
RNM EAF to be represented at the Pongola -	Uncoordinated and ineffective implementation of	Specific responsibility of proposed	Part of mandate	Ongoing

Umzimkulu CMA forum to ensure that estuarine matters are tabled	EMP. Potential damage to EFZ with resultant negative impacts on biodiversity, tourism, property and human health.	estuarine co-ordinator		

Management Objective 4.3: Secure financing for estuarine management initiatives.

Proposed activity	Ecological impact/socio-economic consequences of no action	Expected availability of human resources	Estimated cost	Expected duration
Individual government agencies to make provision for the necessary resources in the short, medium and long-term expenditure frameworks to create and fill posts, and acquire necessary infrastructure and resources for effective management of RNM estuaries	Ineffective implementation of EMP, Potential damage to EFZ with resultant negative impacts on biodiversity, tourism, property and human health.	Limited resources, respective lead agencies	Part of mandate	unknown
Develop a long-term financial plan	Ineffective implementation of EMP, Potential damage to EFZ with resultant negative impacts on biodiversity, tourism, property and human health.	Specific responsibility of proposed estuarine co-ordinator and respective lead agencies	Part of mandate	Within cyclical requirements

5. SOCIO-ECONOMIC CONSIDERATIONS

Key Objective 5: Socio-economic benefits are enhanced and regulated to ensure sustainable resource use.

Management Objective 5.1: Provide safe, clean, equitable and controlled access

Proposed activity	Ecological impact/socio-economic consequences of no action	Expected availability of human resources	Estimated cost	Expected duration
Identify prime access points and appropriate type of access and facilities required	Uncontrolled and unsustainable access to EFZ, Damage to estuarine habitat and overexploitation of estuarine resources	Specific responsibility of proposed estuarine co-ordinator, supported by external service provider	R200 000	6 month study
Access needs for estuaries incorporated in municipal	Uncontrolled and unsustainable access to EFZ, Damage to estuarine habitat	Specific responsibility of proposed	Part of mandate	As part of cyclical review

coastal access roll out process	and overexploitation of estuarine resources	estuarine co-ordinator		
Provide and maintain controlled access	Uncontrolled and unsustainable access to EFZ, Damage to estuarine habitat and overexploitation of estuarine resources	Limited resources within RNM, private/public /partnerships required	~R1M	ongoing
Identify security hotspots and increase security presence particularly during peak seasons	Unsafe environment and proliferation of insalubrious behaviour. Increase in crime	Limited resources within RNM	Part of mandate	ongoing

(Source: Estuary Management Plan, 2017)

Management Objective 5.2: Regulate recreational use in and around the estuaries.

Proposed activity	Ecological impact/socio-economic consequences of no action	Expected availability of human resources	Estimated cost	Expected duration
Adopt, demarcate & enforce EFZ	Continued loss/degradation of EFZ and estuarine resources	Resources available in RNM, Specific responsibility of proposed estuarine co-ordinator	~R30 000	Initial action, Ongoing
Informative signage to be placed at strategic points	Unprotected / unsafe environment with resultant negative impacts on biodiversity, tourism, property and human health and safety.	Specific responsibility of proposed estuarine co-ordinator, with support from Environmental Management and Signage Control	~R30 000	Initial action, Ongoing
Investigate hiking trail(s), bird hides, boardwalks, viewing decks etc. to facilitate low impact recreational use, where appropriate	Limited appreciation of estuarine resources and attributes, reduced buy-in from community and visitors	Limited resources within RNM, private/public /partnerships required	To be determined based on proposed development	Ad hoc

(Source: Estuary Management Plan, 2017)

Management Objective 5.3: Maximise economic benefits.

Proposed activity	Ecological impact/socio-economic consequences of no action	Expected availability of human resources	Estimated cost	Expected duration
Investigate alternate livelihoods	Potential overexploitation of estuarine resources, limited appreciation of estuarine resources and	Specific responsibility of proposed estuarine co-ordinator, supported by external	R150 000	6 month study

	attributes, reduced buy-in from local communities	service provider		
Facilitate opportunities for commercial operators and local communities to develop around visitor facilities, provide services on the estuary and find employment opportunities through selling of crafts, as tour guides and staff at commercial enterprises	Potential overexploitation of estuarine resources, limited appreciation of estuarine resources and attributes, reduced buy-in from local communities	Limited resources in RNM (estuarine co-ordinator, LED, community services), private/public /partnerships required	To be determined based on proposed development	Ad hoc

(Source: Estuary Management Plan, 2017)

6. EDUCATION, AWARENESS, MONITORING AND RESEARCH

<u>Key Objective 6:</u> The value and importance of the RNM estuaries is well understood and made known to members of society.

<u>Management Objective 6.1:</u> Promote high levels of public awareness and appreciation of the value of the RNM estuaries.

Proposed activity	Ecological impact/socio-economic consequences of no action	Expected availability of human resources	Estimated cost	Expected duration
Develop an effective education and awareness programme for the residents and visitors to RNM	Potential overexploitation of estuarine resources, limited appreciation of estuarine resources and attributes, reduced buy-in from local communities and visitors	Specific responsibility of Manager: education and Waste Minimisation with support from proposed estuarine co-ordinator	Part of mandate	3 months
Source and/ or commission educational and informative material including signage, posters, pamphlets and webpage design	Potential overexploitation of estuarine resources, limited appreciation of estuarine resources and attributes, reduced buy-in from local communities and visitors	Specific responsibility of proposed estuarine co-ordinator, with support from environmental Management and Signage Control	~R100 000	Initial action, Ongoing
Encourage field excursions to the estuary by local schools, community groups, and other stakeholder groupings led by	Limited appreciation of estuarine resources and attributes, reduced buy-in	Specific responsibility of Manager: education and Waste Minimisation with support from proposed	Part of mandate	Ad hoc

local conservancy members / facilitate eco-school		estuarine co-ordinator		
Facilitate regular discussions between local farmers and DARD/DAFF on sustainable resource use and farming practices	Limited appreciation of estuarine resources and attributes, reduced buy-in. Continued degradation of EFZ due to poor agricultural practices	Specific responsibility of Manager: education and Waste Minimisation with support from proposed estuarine co-ordinator	Part of mandate	Quarterly meetings
Facilitate regular discussions between local fishers and DAFF on sustainable resource use	Limited appreciation of estuarine resources and attributes, reduced buy-in. Overexploitation of estuarine living resources	Specific responsibility of Manager: education and Waste Minimisation with support from proposed estuarine co-ordinator	Part of mandate	Quarterly meetings

(Source: Estuary Management Plan, 2017)

<u>Management Objective 6.2:</u> Enhance our knowledge and understanding through scientific research and monitoring.

Proposed activity	Ecological impact/socio-economic consequences of no action	Expected availability of human resources	Estimated cost	Expected duration
Identify information gaps and develop research ToR aimed at gathering/ consolidating data on biodiversity	Limited appreciation of estuarine resources and attributes with resultant negative impacts on biodiversity, tourism, property and human health and safety.	Specific responsibility of Manager: education and Waste Minimisation with support from proposed estuarine co-ordinator	Part of mandate	3-month project
Engage academic and research institutions, government departments and parastatals (e.g. DAFF, DEA, SANBI) to undertake and/or collaborate on priority research projects	Inability to undertake research and resultant lack of knowledge and understanding of systems	Specific responsibility of Manager: education and Waste Minimisation with support from proposed estuarine co-ordinator	Part of mandate	Ongoing
Solicit research funding support	Inability to undertake research and resultant lack of knowledge and understanding of systems	Specific responsibility of Manager: education and Waste Minimisation with support from proposed estuarine co-ordinator	Undetermined	Ad hoc

Monitor number of users on system to determine resources use and carrying capacity	Potential overexploitation of estuarine resources	Specific responsibility of proposed estuarine co-ordinator	Part of mandate	Ongoing

(Source: Estuary Management Plan, 2017)

Management Objective 6.3: Monitor the condition and use of RNM estuaries.

Proposed activity	Ecological impact/socio-economic consequences of no action	Expected availability of human resources	Estimated cost	Expected duration
Carry out basic monitoring programme as outlined in section Error! Reference source not found.	Increased data collection to inform decision making. Limited appreciation of estuarine resources and attributes with resultant negative impacts on biodiversity, tourism, property and human health and safety.	Specific responsibility of proposed estuarine co-ordinator, or by external service provider	To be determined based on nature of monitoring agreed on	Monthly
Undertake training of community monitors to participate in estuarine monitoring	Limited appreciation of estuarine resources and attributes with resultant negative impacts on biodiversity, tourism, property and human health and safety. Potential overexploitation of estuarine resources	Specific responsibility of proposed estuarine co-ordinator with support from third party educator	R20 000 per session (2 sessions per year)	6 monthly / annual training of community members
Encourage schools' participation in undertaking basic estuarine monitoring (link to Eco-school)	Limited appreciation of estuarine resources. Lack of buy-in from school groups	Specific responsibility of proposed estuarine co-ordinator with potential initial support from third party educator	Part of mandate	Ongoing
Establish Adopt-a-River programme with adjacent landowners and conservancies	Accumulation of pollution and resultant negative impact on biodiversity, tourism and human health	Resources available in Municipality, DWS as well as I&APs	R50 000 per event. Ongoing voluntary cost	Bi-annual events and ongoing

(Source: Estuary Management Plan, 2017)

Management Objective 6.4: Establish a system for reporting environmental non-compliance and other incidents of concern relating to RNM estuaries.

Proposed activity	Ecological impact/socio-economic consequences of no action	Expected availability of human resources	Estimated cost	Expected duration

Establish and maintain a hotline and an incident record for public reporting of non-compliant behaviour (e.g. illegal dumping, gill netting).	Lack of accountability for overexploitation, environmental degradation and severe pollution. Accumulation of waste to toxic levels with resultant negative impacts on biodiversity, tourism and human health	Specific responsibility of proposed estuarine co-ordinator	Parts of mandate	Ongoing
Liaise with enforcement officers to establish a rapid response network for all types of targeted contraventions	Detrimental environmental activities are timeously addressed	Limited resources in RNM as well as EDTEA DAFF, DMR and DWS	Part of mandate	Ongoing

(Source: Estuary Management Plan, 2017)

8.10.6.2. SPATIAL ZONATION

A spatial zonation plan has been developed for each of the Seven (7) estuary displaying the boundaries of the system, the development buffer zones (as prescribed by existing legislation), recommended areas for rehabilitation, and the proposed zonation for the management of activities, comprising a combination of the following, protected area zone, habitat protection zone, recreation zone, and management zone.

1. MHLANGAMKULU ESTUARY

Downstream boundary	Estuary mouth 30°41′17.39″S; 30°29′54.02″E
Upstream boundary	Estuary head 30°40'55.63"S; 30°29'20.04"E
Lateral boundaries	5 m contour AMSL along each bank

(Source: Estuary Management Plan, 2017)

Management for the Mhlangamkulu Estuary should be directed towards-

- ✓ Improving the **health and functioning** of the estuary, specifically in relation to water quality and controlling activities that contribute to poor water quality;
- ✓ **Managing development and associated activities** within the EFZ and on adjacent properties; and
- ✓ Providing **protection for coastal fauna and flora** including **cultural resources**.

The plan has highlighted the management priorities areas based on health and function, conservation, land use infrastructure and development planning and socio-economic considerations.

(Source: Estuary Management Plan, 2017

1.1. Current Zonation and Land Use

LAND USE	
Purpose (Zonation)	**Description**
Residential	Surrounded by numerous residential and holiday establishments
Transport	South coast Railway line and the R102 coastal road, numerous residential roads
Government	Electricity transmission station and pylons near mouth
Public (access, open space and amenity reserve)	Designated open space for public use, this includes parking areas, boardwalks and foot paths
Agriculture	Fallow land / unplanted farmland in the upper reaches
ACTIVITIES	
Boating • **Motorised** • **Non-motorised**	 • Motorised pontoon / river cruiser • Canoeing (presumed)
Fishing	Limited recreational angling from riverbanks and at mouth
Swimming	Assumed limited swimming associated with beach amenity

(Source: Estuary Management Plan, 2017)

1.2. Proposed Spatial Zoning

a) Development buffer zone

According to the RNM TPS, the estuary body falls under a River Reserve and portions of the estuary margin upstream of the R102 bridge fall within the Amenity Reserve and designated Active Open Space. The system is thus afforded some protection in respect to development pressure.

Any proposed development, or modifications to existing developments or land use zonation must comply with the EIA regulations, TPS controls, conditions of the anticipated CML and local building regulations, and any other legal requirements.

The information below illustrate the boundaries of Mhlangamkulu Estuary corresponding to the provisional CML (green, 5 m contour), current CPZ (green, 5 m contour), proposed CPZ (red, 10 m contour) development buffer zones as well as areas requiring rehabilitation.

Specific rehabilitation of the Mhlangamkulu estuarine margin is required where there has been active removal of marginal/riparian vegetation, erosion and/or infilling. Ground truthing of these areas is required to prescribe appropriate mitigation.

At a system-wide scale, rehabilitation includes removal of invasive alien vegetation (terrestrial and aquatic) and reduction of nutrients entering the system.

b) *Management Zone*

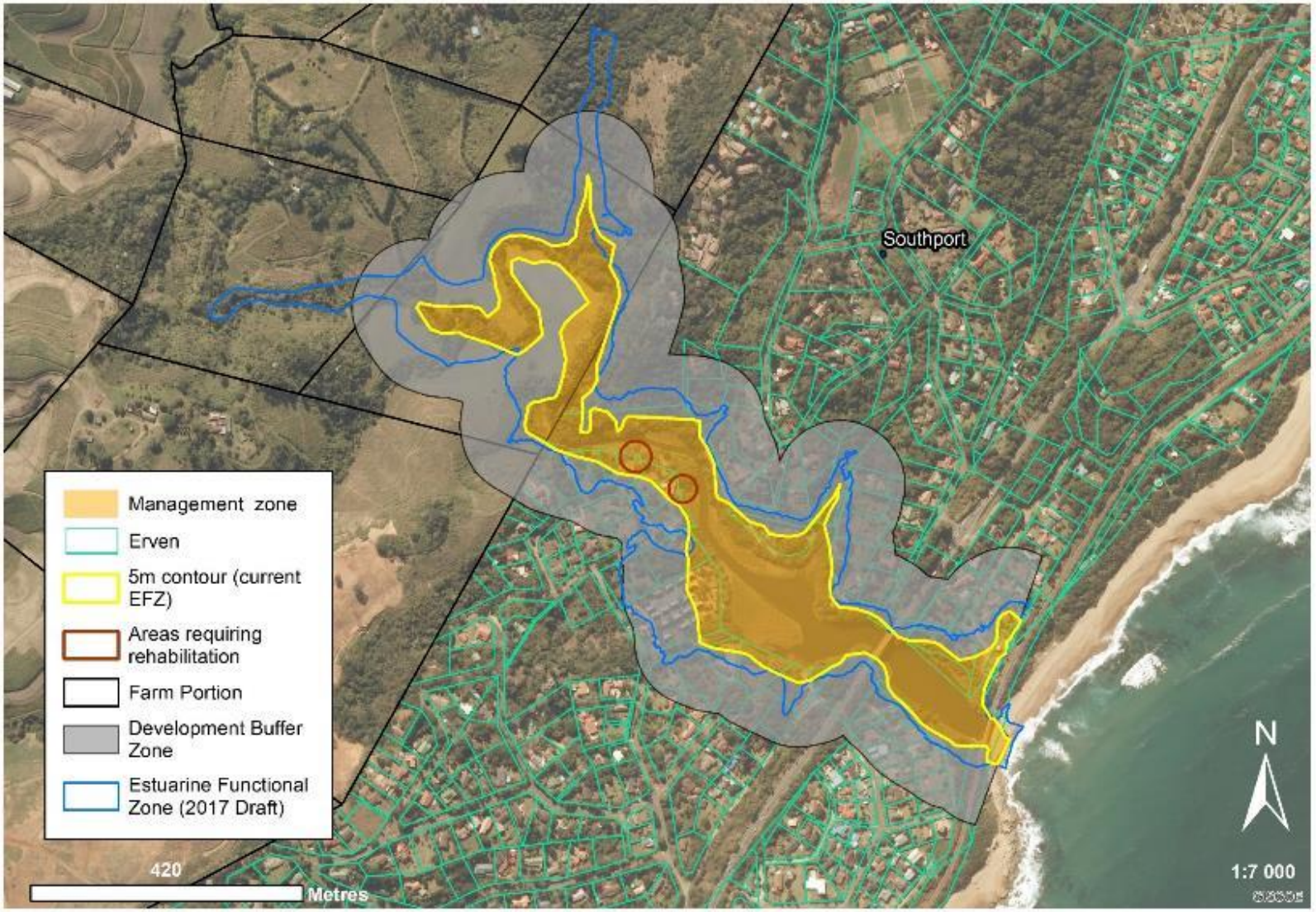
Given the small size of the Mhlangamkulu Estuary, the limited activities that take place within the EFZ and the absence of user conflict, a single zonation type is proposed for the system – see Figure 6 2. That is, a managed estuarine area, which provides for ongoing use of the entire estuarine area and its resources on condition that activities are not detrimental to the ecological integrity of the estuary and the provision of ecosystem good and services in the long term. In this instance, all general regulations relating to various activities will apply and motorised boating should not be permitted on this system.

The table below depicts the permissible activities around Mhlangamkulu Estuary.

ACTIVITIES	CONDITIONS OF USE	RELEVANT LEGISLATION	RESPONSIBLE AUTHORITY	ENFORCEMENT
Swimming	Compliance with water quality guidelines for recreational use	Health Act	Ugu	Ugu
Non-motorised boating (canoeing, paddling)	Compliance with water quality guidelines for recreational use	Health Act	Ugu	Ugu
Fishing & Bait Harvesting	Compliance with species bag limits and gear restrictions	MLRA Regulations	DAFF	DAFF compliance officers
Conservation Reserve (Overlay)	Recreational activities must maintain a distance of 5 m from estuarine habitats, i.e. no disturbance/trampling, paddling and canoeing and fishing and bait harvesting, within the marginal habitats (aquatic buffer). Compliance with TPS controls for Special Environmental Conservations (Amenity Reserve and River Reserve)	SPLUMA, Municipal TPS, Bylaws	RNM	RNM
Other • **Removal of solid waste, clearing of invasive alien vegetation and other approved rehabilitation activities** • **Research and monitoring** • **Rescue operations**				

(Source: Estuary Management Plan, 2017)

Figure 11: Proposed Zonation of Mhlangamkulu Estuary



(Source: Estuary Management Plan, 2017)

The geographical boundaries of the uMthente Estuary as per the EIA Regulations are as follows:-

Downstream boundary	Estuary mouth 30°42′34.53″S; 30°28′54.10″E
Upstream boundary	Estuary head 30°41'47.76"S; 30°27'48.99"E
Lateral boundaries	5 m contour AMSL along each bank

Management for the Umthente Estuary should be directed towards-

- Managing development and associated activities within the EFZ and on adjacent properties; and
- Improving the health and functioning of the estuary, specifically in relation to water quality and controlling activities that contribute to poor water quality.

(Source: Estuary Management Plan, 2017)

2.1. Current Zonation and Land Use

The table below lists the surrounding land use types as per the RNM Town Planning Scheme, and activities, occurring in and/or adjacent to the uMthente Estuary.

LAND USE	
Purpose (Zonation)	**Description**
Residential	Surrounded by numerous residential and holiday establishments and resorts, including the Mtentweni Caravan park on the southern bank Proposed residential development (estate)
Business/commercial	Land currently undeveloped but zoned for low impact mixed use development
Transport	South coast Railway and R102 coastal road, numerous residential roads
Public (access, open space and amenity reserve)	Designated open space for public use, this includes parking areas, boardwalks and foot paths
Agriculture	Sugar cane cultivation in the upper reaches
ACTIVITIES	
Non-motorised Boating	Canoeing from caravan park
Fishing	Limited recreational angling from river banks and at mouth
Swimming	Assumed limited swimming associated with beach environment

(Source: Estuary Management Plan, 2017)

2.2. Proposed Spatial Zoning

a) Development Buffer Zone

According to the RNM Town Planning Scheme, the estuary body falls under a municipal River Reserve and is thus afforded some protection in respect to development pressure. However, there is no amenity reserve on either bank and no provisions are evident in the proposed new development/estate area.

Any proposed development, or modifications to existing developments or land use zonation must comply with the EIA Regulations, TPS controls, conditions of the anticipated CML and local building regulations, and any other legal requirements.

The boundaries of uMthente Estuary are corresponding to the provisional CML (green, 5 m contour), current CPZ (green, 5 m contour), CPZ (red, 10 m contour) development buffer zones and proposed areas of rehabilitation.

Priority rehabilitation of the uMthente estuarine margin entails the relocation of the proposed wastewater treatment works to service the planned residential development, where construction has been initiated below the 10 m contour. Further to this, the discharge of treated wastewater to the uMthente Estuary should not be permitted. Retreat and rehabilitation of land cleared for agricultural planting below the 5 m contour is required in the upper reaches.

The decommissioned regional water supply pipeline and supporting piers which span the lower reaches of the estuary should be removed. Such structures accumulate debris and present hindrances to flow, particularly during flood events.

At a system-wide scale, rehabilitation includes removal of invasive alien vegetation (terrestrial and aquatic) and reduction of nutrients entering the system.

b) Management Zones

Given the small size of the uMthente Estuary, the limited activities that take place within the EFZ and the absence of user conflict, a single zonation type is proposed for the system. That is, a managed estuarine area, which provides for ongoing use of the entire estuarine area and its resources on condition that activities are not detrimental to the ecological integrity of the estuary and the provision of ecosystem good and services in the long term. In this instance, all general regulations relating to various activities will apply and only non-motorised boating is permitted on this system

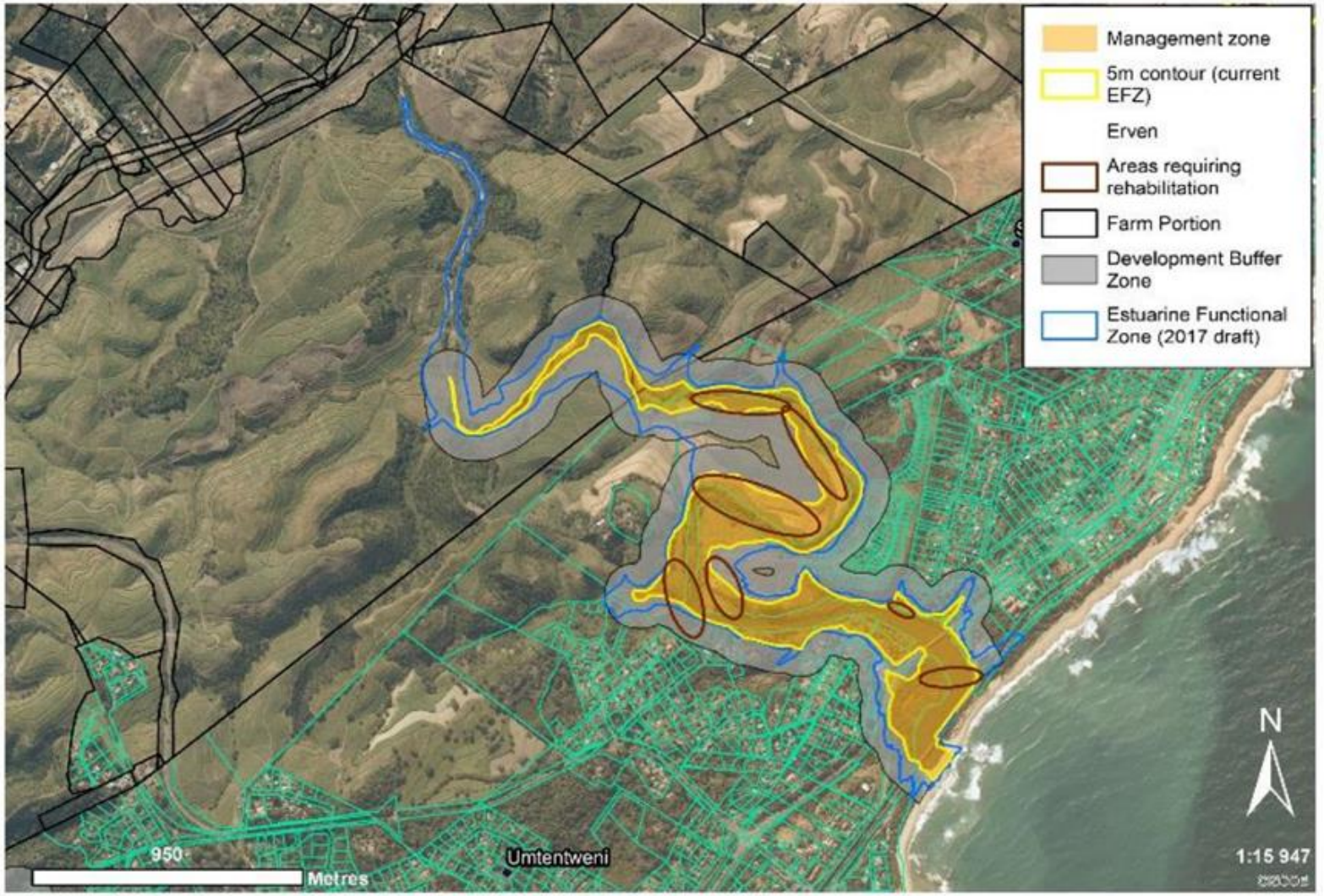
The lower reaches of the uMthente Estuary contains a wetland area and remnant coastal forest vegetation, which together with coastal forest within the rail reserve and fragmented forest along the estuarine/riparian edge, provide valuable natural coastal habitat. A Habitat Protection Zone in the form of a non-user Conservation Reserve (overlay) over private

property is proposed over the EFZ to protect the quality of the remaining natural environment, to minimise pollution and erosion, and ultimately reduce further degradation and transformation of this estuary. The conditions for the operation of the Caravan Park should be reviewed, and special conditions proposed and adopted (e.g. allowance for fishing from shoreline). The 5 m aquatic buffer for recreational activities (as described in Section 5.3) also applies. Artificial breaching is only allowed with an EDTEA approved Mouth Management / Maintenance Plan.

PERMISSIBLE ACTIVITIES	CONDITIONS OF USE	RELEVANT LEGISLATION	RESPONSIBLE AUTHORITY	ENFORCEMENT
Swimming	Compliance with water quality guidelines for recreational use	Health Act	Ugu	Ugu
Non-motorised boating (canoeing, paddling)	Compliance with water quality guidelines for recreational use	Health Act	Ugu	Ugu
Fishing & Bait Harvesting	Compliance with species bag limits and gear restrictions	MLRA Regulations	DAFF	DAFF compliance officers
Conservation Reserve (Overlay)	Recreational activities must maintain a distance of 5 m from estuarine habitats, i.e. no disturbance/trampling, paddling and canoeing and fishing and bait harvesting, within the marginal habitats. Compliance with TPS controls for Special Environmental Conservations (Amenity Reserve and River Reserve)	SPLUMA, Municipal TPS, Bylaws	RNM	RNM
Other • **Removal of solid waste, clearing of invasive alien vegetation and other approved rehabilitation activities** • **Research and monitoring** • **Rescue operations**				

(Source: Estuary Management Plan, 2017)

Figure 12: Proposed Zonation of Umthente Estuary



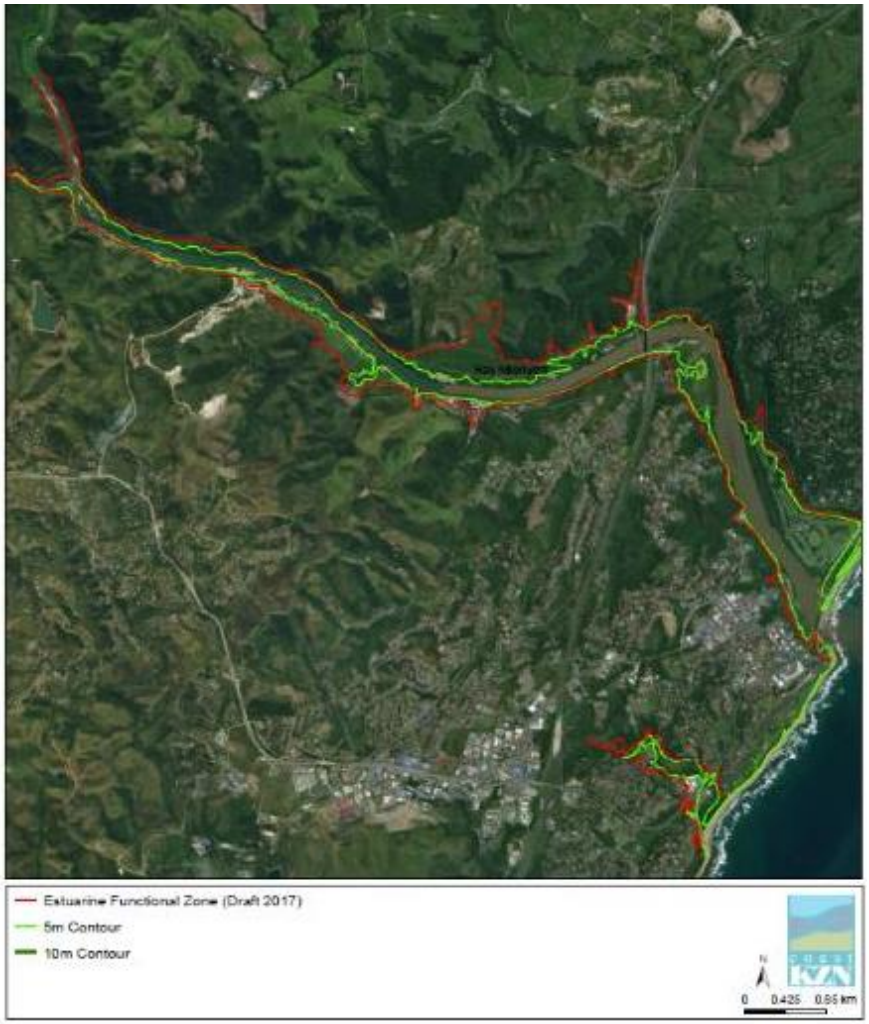
(Source: Estuary Management Plan, 2017)

The geographical boundaries of the Mzimkulu Estuary, as per the EIA Regulations, are as follows:-

Downstream boundary	Estuary mouth 30°44′23.39″S; 30°27′29.88″E
Upstream boundary	Estuary head 30°42'00.30"S; 30°22'52.36"E (9.5 km from the mouth to the extent of tidal influence)
Lateral boundaries	5 m contour AMSL along each bank

(Source: Estuary Management Plan, 2017)

- Through the information gathered and stakeholder engagement, it was evident that management needs to be directed towards:
- Improving the health and functioning of the estuary, specifically in relation to water quality and controlling activities that contribute to poor water quality (e.g. nutrient and sediment loading);
- Managing development and associated activities within the EFZ and on adjacent properties;
- Providing protection for coastal fauna and flora including cultural resources;
- Rehabilitating riverbanks affected by invasive alien vegetation, sandmining and historical activities; and
- Controlling the use/ extraction of estuarine resources (living and non-living).



(Source: Estuary Management Plan, 2017)

3.1. Current Zonation and Land Use

The table below lists the surrounding land use types as per the RNM Town Planning Scheme, and activities, occurring in and/or adjacent to the Mzimkhulu Estuary.

LAND USE	
Purpose (Zonation)	**Description**
Agricultural (field crops)	Small-scale agricultural activity east of N2 on southern bank Fallow / unplanted agricultural land
Business	Spillers Wharf restaurant, business and museum complex
Industrial	Total Gas Port Shepstone Depot, Mechanical workshop, Umzimkulu Sugar Mill
Public (access, open space and amenity reserve)	Designated open space for public use, this includes parking areas, boardwalks and foot paths Land zoned as Open Space but largely undeveloped
Recreation	PS Country Club Golf course at the mouth
Conservation Reserve	On the northern bank adjacent to the PS Country Club Golf course
Residential	Limited residential and resort establishments (e.g. Umzimkulu Marina)
Transport	Bridges: South coast Railway, R102 coastal road, N2 road, low level Archibald Bridge Historical and active railway lines and sidings associated with the Umzimkulu Sugar Mill Numerous local access roads
ACTIVITIES	
Boating	
• **Non-motorised**	• canoeing, surf ski etc
• **Motorised**	• ski boats, jetskiis
• **Boat launching**	• Spillers Wharf, illegal launching from PS Country Club • River launching to proceed to sea
Fishing	Shore based angling occurs predominantly along the southern bank of the estuary, and is most common at the mouth, and off private properties around the estuary Boat based angling also occurs off boats and canoes/skis in the estuary.

(Source: Estuary Management Plan, 2017)

3.2. Proposed Spatial Zonation

a) Development Buffer Zone

According to the RNM TPS, the estuary body falls under a municipal River Reserve. A large portion of the northern bank is zoned as Active Open Space (golf course) with a narrow Conservation Reserve abutting the River Reserve. The system is thus afforded some protection in respect to development pressure. There is no such reserve provided on the southern shoreline.

Any proposed development, or modifications to existing developments or land use zonation must comply with the EIA, TPS controls, conditions of the anticipated CML and local building regulations, and any other legal requirements.

The boundaries of Mzimkulu Estuary corresponding to the provisional CML (green, 5 m contour), current CPZ (green, 5 m contour), CPZ (red, 10 m contour) development buffer zones and areas requiring rehabilitation. The public boat launch site accessed from the Port Shepstone Country Club is no longer operational and any boating activity at this site is considered illegal.

The middle and upper reaches of the Mzimkulu Estuary must be considered a priority area for rehabilitation. This includes areas degraded by sandmining activities on the estuary banks and the retreat and rehabilitation of land cleared for agricultural planting below the 5 m contour. Rehabilitation will also entail removal of building materials and rubble from the riverbed beneath and surrounding the high-rise N2 road bridge and the low-level Archibald Bridge.

As per the EWR study (Forbes et al., 2011), rehabilitation should include the removal of derelict, redundant and old quays, jetties, wharfs and revetments and restoration of the banks to natural sediments. Ground truthing of such structures, erosion areas and

properties where vegetation clearance has taken place for ease of access or view of the estuary is required to prescribe appropriate mitigation.

At a system-wide scale, rehabilitation also includes the removal of invasive alien vegetation (terrestrial, especially dense stands of bamboo and eucalyptus, and aquatic), the reduction of sediments, nutrients and contaminants entering the system from agriculture and industrial processes, and the prohibition of the dumping of dredge spoil in inappropriate areas (Forbes et al., 2011).

b) Habitat Protection Zone

According to the National Biodiversity Plan, a portion of the Mzimkulu Estuary is to be designated a no-take zone, i.e. closed with no extraction of living resources (Turpie et al., 2012). To this end, a specific Habitat Protection Zone is proposed, upstream/westwards of the Mzimkulu Marina to provide sanctuary to estuarine and marine fish species residing in and utilising the system. This includes shore angling and boat-based fishing. This proposed zonation is scientifically motivated to encapsulate marine, brackish/estuarine and freshwater habitats during high and low flow periods (Forbes et al., 2011).

This no-take area will need to be policed and enforced by DAFF and overlaps with the Recreation Quiet Zone (see below). The proposed standard 5 m aquatic buffer for recreational activities described in Section 5.3 also applies for the entire system.

CONDITIONS OF USE	RELEVANT LEGISLATION	RESPONSIBLE AUTHORITY	ENFORCEMENT
No harvesting of fish or bait organisms	MLRA	DAFF	DAFF
No cutting/removal of indigenous vegetation	NEM:BA TPS controls Bylaws	DAFF, RNM	RNM EDTEA
No further transformation or additional development or extension with the EFZ	ICMA NEMA	RNM	RNM
No discharge of contaminated and/or unattenuated stormwater runoff	TPS controls NWA	RNM	RNM

(Source: Estuary Management Plan, 2017)

c) Recreation Zone

The primary recreational activities on the Mzimkulu Estuary include fishing and boating, while swimming activities are limited. Within the RNM, motorised boating is only permitted on the Mzimkulu and Mtamvuna estuaries and both systems are well known destinations for boat-based activities. An application is in process to designate / list Spillers Wharf as a public launch site (PLS).

Two recreation zones are proposed in terms of boating. The Quiet (no-wake) Zone extends upstream of Spillers Wharf and the Active Zone extends downstream of Spillers Wharf to the mouth. The conditions of use are provided in the table below.

ZONE/USE	CONDITIONS OF USE	RELEVANT LEGISLATION	RESPONSIBLE AUTHORITY	ENFORCEMENT
1) QUIET ZONE **Motorised boating**	• Motorised boating permitted • No-wake zone, reduced speed • Compliance with regulations	SAMSA, Small Vessel Safety Regulations Bylaws Health Act	SAMSA safety officer / RNM Ugu DM, RNM	SAMSA safety officer / RNM Ugu DM, RNM

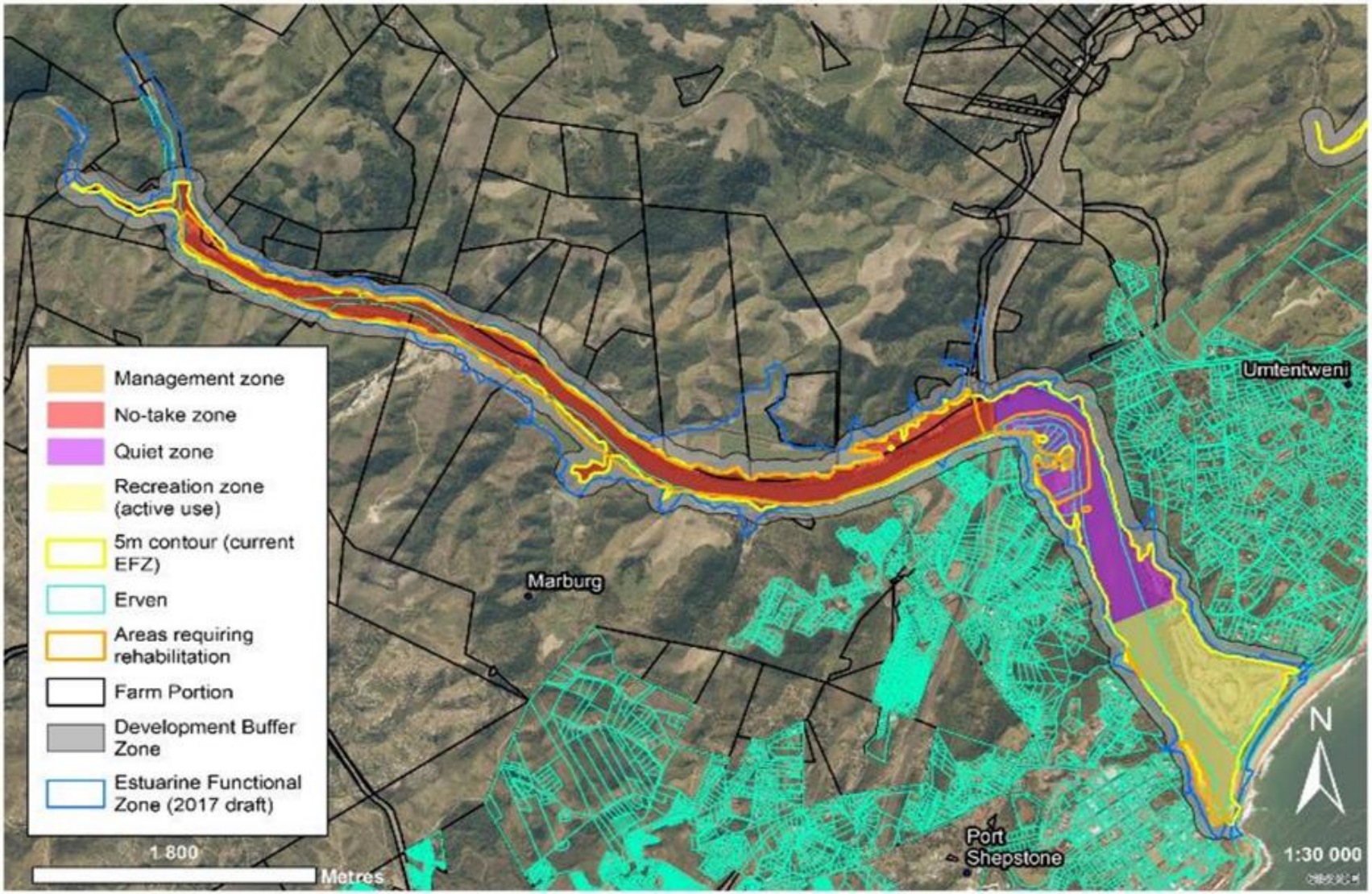
	for vessel handling and operation • Non-motorised vessels (canoes, paddle boats have right of way) • 5 m aquatic buffer from estuarine margins point of entry)			
Non-motorised boating	• Non – Motorised boating permitted (canoeing paddling) • 5 m aquatic buffer from estuarine margins (point of entry/jetties) • Compliance with water quality guidelines	Bylaws Health Act	SAMSA safety officer / RNM Ugu DM, RNM	SAMSA safety officer / RNM Ugu DM, RNM

	for recreational use			
2) ACTIVE ZONE Motorised boating	• Motorised boating permitted • Compliance with regulations for vessel handling and operation • Motorised vessels have right of way • Launching to sea permitted • 5 m aquatic buffer from estuarine margins (except point of entry) • Active use/sporting of jetskis within the estuary not permitted,	Small Vessel Safety Regulations	SAMSA	SAMSA safety officer / RNM

	estuary only to be used to gain access to the sea			
Non-motorised boating	• Non – Motorised boating permitted (canoeing paddling) • Motorised vessels have right of way, paddlers to keep out of main channel • 5 m aquatic buffer from estuarine margins (point of entry/jetties) • Compliance with water quality guidelines for	Bylaws Health Act	SAMSA safety officer / RNM Ugu DM, RNM	SAMSA safety officer / RNM Ugu DM, RNM
	recreational use			
Fishing	• Fishing permitted only downstream of Mzimkulu Marina (See above: Habitat Protection Zone) • Shore based, and boat-based fishing permitted • 5 m aquatic buffer from estuarine margins (except sandbar/point of entry/jetties) • Compliance with species bag limits and gear restrictions	MLRA Regulations Bylaws	DAFF / RNM	DAFF compliance officers / RNM

(Source: Estuary Management Plan, 2017)

Figure 13: Proposed Zonation of Mzimkulu Estuary



(Source: Estuary Management Plan, 2017)

4. UMBANGO ESTUARY

The geographical boundaries of the Mzimkulu Estuary, as per the EIA Regulations, are as follows:-

Downstream boundary	Estuary mouth 30°45′27.74″S; 30°26′51.60″E
Upstream boundary	Estuary head 30°45'01.10"S; 30°26'22.06"E
Lateral boundaries	5 m contour AMSL along each bank

Through the information gathered and stakeholder engagement, it was evident that management needs to be directed towards:

- Managing development and associated activities within the EFZ and on adjacent properties;
- Improving the health and functioning of the estuary, in terms of water quantity and quality and controlling activities that contribute to poor water quality; and
- Providing protection for coastal fauna and flora.

(Source: Estuary Management Plan, 2017)

4.1. Spatial Zonation

a) Current Zonation and Land Use

The table below lists the surrounding land use types as per SPLUMA and the RNM Town Planning Scheme (TPS), and activities occurring in and/or adjacent to the Mbango Estuary.

LAND USE	
Purpose (Zonation)	**Description**
Business	Vehicle showrooms and offices, vehicle service/repair centres, various retail outlets
Industrial	Public Garage
Public (access, open space and amenity reserve)	Designated open space for public use, this includes parking areas, boardwalks and foot paths Land zoned as Open Space and largely undeveloped
Recreation/ Community	Extensive Open space used for sporting events, and shows/fairs Beach front recreation on southern bank between South coast railway and R620 coastal road (abandoned land, Banana Express Railway station)
Residential	Residential and holiday establishments,
Institutional	Mbango Valley Association (retirement village) in upper reaches
Transport	Bridges: South coast Railway, R102 and R602 coastal road Numerous local access roads
ACTIVITIES	
Fishing	Limited fishing near mouth

(Source: Estuary Management Plan, 2017)

4.2. Proposed Spatial Zonation

a) Development Buffer Zone

Within the RNM TPS, the Mbango River is not zoned as a River Reserve. This must be amended as a matter of urgency to protect the integrity of the riverine/estuarine corridor and acknowledge the environmental value of this system in development planning.

The development buffer zones (see Section **Error! Reference source not found.**) apply. A ny proposed development, or modifications to existing developments or land use zonation must comply with the EIA regulations, TPS controls, conditions of the anticipated CML and local building regulations, and any other legal requirements.

The boundaries of Mbango Estuary are corresponding to the provisional CML (green, 5 m contour), current CPZ (green, 5 m contour) and CPZ (red, 10 m contour) development buffer zones. The dark blue line indicates the formal public access route to the mouth from a parking lot located to the south. An informal access route exists on the southern bank through the coastal vegetation (light blue line).

At a system-wide scale, rehabilitation of Mbango Estuary requires the urgent reduction of nutrients and organic waste entering the system from the Mbango WWTW, and the removal of dumped solid waste from the estuary channel (e.g. car tyres, sheets of plastic, cardboard etc.).

b) Habitat Protection Zone

Despite its highly modified state, the Mbango Estuary supports a unique diversity of fish species and dense coastal vegetation in relatively pristine condition along the rail reserve. It is therefore proposed that the EFZ seaward of the R620/Marine Drive bridge be considered a specific Habitat Protection Zone for conserving estuarine function and biodiversity that is somewhat unique to a heavily developed urbanised system. Bait harvesting, and fishing is not permitted within this area, i.e. this area is to be considered a no-take zone.

The Engen public garage and small business complex fall within this zone. This area should be closely monitored, and specific controls should apply (Table 9 6). Rehabilitation of this area is critical, and the municipality must encourage cleaner industry/operations in the immediate area.

The proposed standard 5m aquatic buffer for recreational activities also applies for the remainder of the system.

The table below illustrates the conditions of use for Habitat Protection Zone in Mbango Estuary: -

CONDITIONS OF USE	RELEVANT LEGISLATION	RESPONSIBLE AUTHORITY	ENFORCEMENT
Only low impact activities such as canoeing/paddling and walking	Bylaws	RNM	RNM
No harvesting of fish or bait organisms	MLRA	DAFF	DAFF
No cutting/removal of indigenous vegetation	NEM:BA TPS controls Bylaws	DAFF, RNM	RNM EDTEA
No further transformation or additional development or extension with the EFZ	ICMA NEMA	RNM	RNM
On-going maintenance of open space should be included in municipal budget and SANRAL's budget for maintenance of the railway reserve	TPS controls Bylaws	RNM SANRAL	EDTEA
Commercial activities must be compliant with a stringent EMPr that is developed considering the sensitive estuarine environment.	NEMA EIA Regulations NWA	EDTEA DWS	EDTEA
Stormwater runoff may not be allowed to enter the system and immediate measures must be implemented to prevent pollution during high water levels	NEMA EIA Regulations NWA	EDTEA DWS	RNM EDTEA
The turnover of businesses must seek to move towards cleaner industry and environmental best practices	NEMA TPS controls Bylaws	RNM	RNM EDTEA
The municipality must encourage cleaner industry/operations in the immediate area	NEMA TPS controls Bylaws	RNM	RNM EDTEA

(Source: Estuary Management Plan, 2017)

c) Recreation Zone

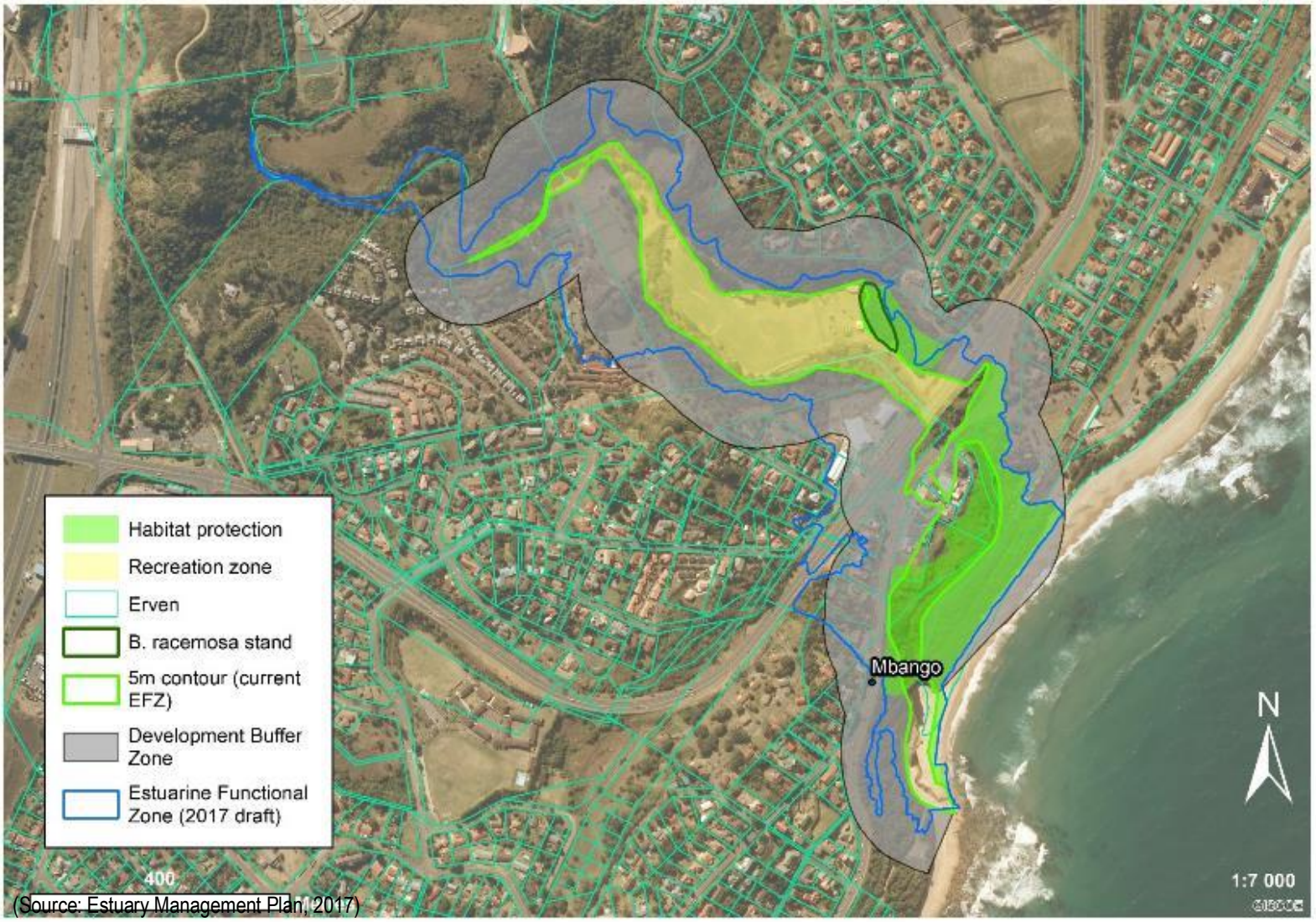
A large part of the EFZ in the middle reaches on the northern bank has been wholly transformed into sports grounds/ active recreational area. This area is also used for festivals or fares. Within this area, isolated patches and individuals of protected swamp forest tree species, Barringtonia racemosa, have been observed. While restoration of this area is not proposed, specific conditions of use must be implemented to reduce further negative impacts on the estuary.

There are no known recreational activities on the water body in this area. The table below illustrates the Conditions of Use for Recreational Use of Mbango Estuary.

CONDITIONS OF USE		RELEVANT LEGISLATION	RESPONSIBLE AUTHORITY	ENFORCEMENT
Individual trees including saplings should be flagged and marked for conservation **No cutting/ trimming /removal/ relocation of these species without prior approval from DAFF.**		NEM:BA NFA	EDTEA DAFF	RNM DAFF
No application of pesticides and fertilizers. No removal of indigenous vegetation. No surfacing hardening (e.g. carparks). No activities that result	CARA NWA	DAFF (Protected tree spp.) DWS RNM EDTEA	RNM EDTEA	

in compaction of the soil, such as driving in the flood plain, or introduction of sediment/stone (e.g. race tracks). No development within the EFZ. Additional ablutions to be provided for events above the 5 m contour			

Figure 14: Proposed Zonation of the Mbango Estuary



(Source: Estuary Management Plan, 2017)

MHLANGENI ESTUARY

The geographical boundaries of the Mhlangeni Estuary, as per the EIA Regulations are as follows and illustrated the table below: -

Downstream boundary	Estuary mouth 30°49′12.81″S; 30°24′20.11″E
Upstream boundary	30°48'11.49"S; 30°23'18.17"E
Lateral boundaries	5 m contour above MSL along each bank

Through the information gathered and stakeholder engagement, it was evident that management needs to be directed towards:

- ✓ **managing development and associated activities** (including mouth management?) within the EFZ and on adjacent properties;
- ✓ improving the **health and functioning** of the estuary, in terms of **water quality** and controlling activities that contribute to poor water quality;
- ✓ **controlling fishing and bait harvesting** activities; and
- ✓ addressing social issues relating to **public safety** (carrying capacity) and **economic opportunities**.

(Source: Estuary Management Plan, 2017)

5.1. Current Zonation and Uses

The table below lists the surrounding land use types as per the RNM TPS and activities occurring in and/or adjacent to the Mhlangeni Estuary

LAND USE	
Purpose (Zonation)	**Description**
Agricultural (field crops)	Banana and sugar cane plantations in upper reaches of estuary
Business	Various food, restaurant and other small scale retail outlets
Public (access, open space and amenity reserve)	Designated open space for public use, this includes parking areas, boardwalks and foot paths and portions of the estuary Land zoned as Open Space and largely undeveloped
Residential	Residential and holiday establishments, including hotels (at the mouth) and guest lodges
Transport	Bridges: R61 and R620 coastal road, Numerous local access roads
ACTIVITIES	
Fishing	Fishing near mouth and middle reach, and from private properties
Bait harvesting	Prawn pumping on extensive sand banks in lower-middle reaches
Boating	Non-motorised boating, including recreational canoeing and paddle boating mostly at mouth and middle reaches
Swimming	Associated with St Michaels beach area

(Source: Estuary Management Plan, 2017)

-Proposed Spatial Zonation

a) Development Buffer Zone

According to the RNM TPS, the estuary body falls under a municipal River Reserve and a large portion of the northern bank above the R102 road bridge is zoned as Active Open Space, while a small portion of the estuary margin seaward of the R102 on the southern bank is zoned as Amenity Reserve. The estuary is thus afforded some protection in respect to development pressure.

Any proposed development, or modifications to existing developments or land use zonation must comply with the EIA Regulations, TPS controls, conditions of the anticipated CML and local building regulations, and any other legal requirements.

The boundaries of Mhlangeni Estuary are corresponding to the provisional CML (green, 5 m contour), current CPZ (green, 5 m contour), CPZ (red, 10 m contour) development buffer zones and areas requiring rebailitation.

Retreat and rehabilitation of land cleared for agricultural planting below the 5 m is required in the upper reaches of the Mhlangeni Estuary. Ground truthing of properties where vegetation clearance has taken place for ease of access or view of the estuary is required to prescribe appropriate mitigation.

At a system-wide scale, rehabilitation includes removal of invasive alien vegetation (terrestrial and aquatic) and reduction of nutrients entering the system.

b) Habitat Protection Zone

Despite its moderately modified and heavily urbanised state, the Mhlangeni Estuary supports extensive Phragmites reed beds, swamp forest habitat and riparian coastal forests, which provide valuable natural coastal habitat. A Habitat Protection Zone in the form of a non-user Conservation Reserve (overlay) over private property is proposed over the EFZ westwards of the R620 to protect the quality of the remaining natural environment, to minimise pollution and erosion, and ultimately reduce further degradation and transformation of this estuary.

Non-extractive recreational use is permitted within the estuarine water body (i.e. Paddle-boating, swimming, etc) and thus the 5 m aquatic buffer for recreational activities applies (as described in Section 5.3). Bait harvesting, and fishing is not permitted within this area, i.e. this area is to be considered a no-take zone.

Below are the conditions of use for Mhlangeni Estuary

CONDITIONS OF USE	RELEVANT LEGISLATION	RESPONSIBLE AUTHORITY	ENFORCEMENT
Only low impact activities such as canoeing/paddling, swimming and walking (5 m buffer applies)	Bylaws	RNM	RNM
No harvesting of fish or bait organisms	MLRA	DAFF	DAFF
No cutting/removal of indigenous vegetation	NEM:BA TPS controls Bylaws	DAFF, RNM	RNM EDTEA
No further transformation or additional development or extension with the EFZ	ICMA NEMA	RNM	RNM
No discharge of contaminated and/or unattenuated stormwater runoff	TPS controls NWA	RNM	RNM

(Source: Estuary Management Plan, 2017)

c) Recreation Zone

It is proposed that the mouth region of the Mhlangeni Estuary, which forms part of the St Michael's Beach, be designated as a high-intensity recreational use zone. This area is to be strictly managed, particularly during peak holiday seasons when tourism and recreational activity are highest. The responsible authorities will be required to be present or active during these periods. For example, the RNM Aquatic Health and Safety department must appoint beach officials/managers to direct recreational activities as well as additional life guards to monitor this area specifically.

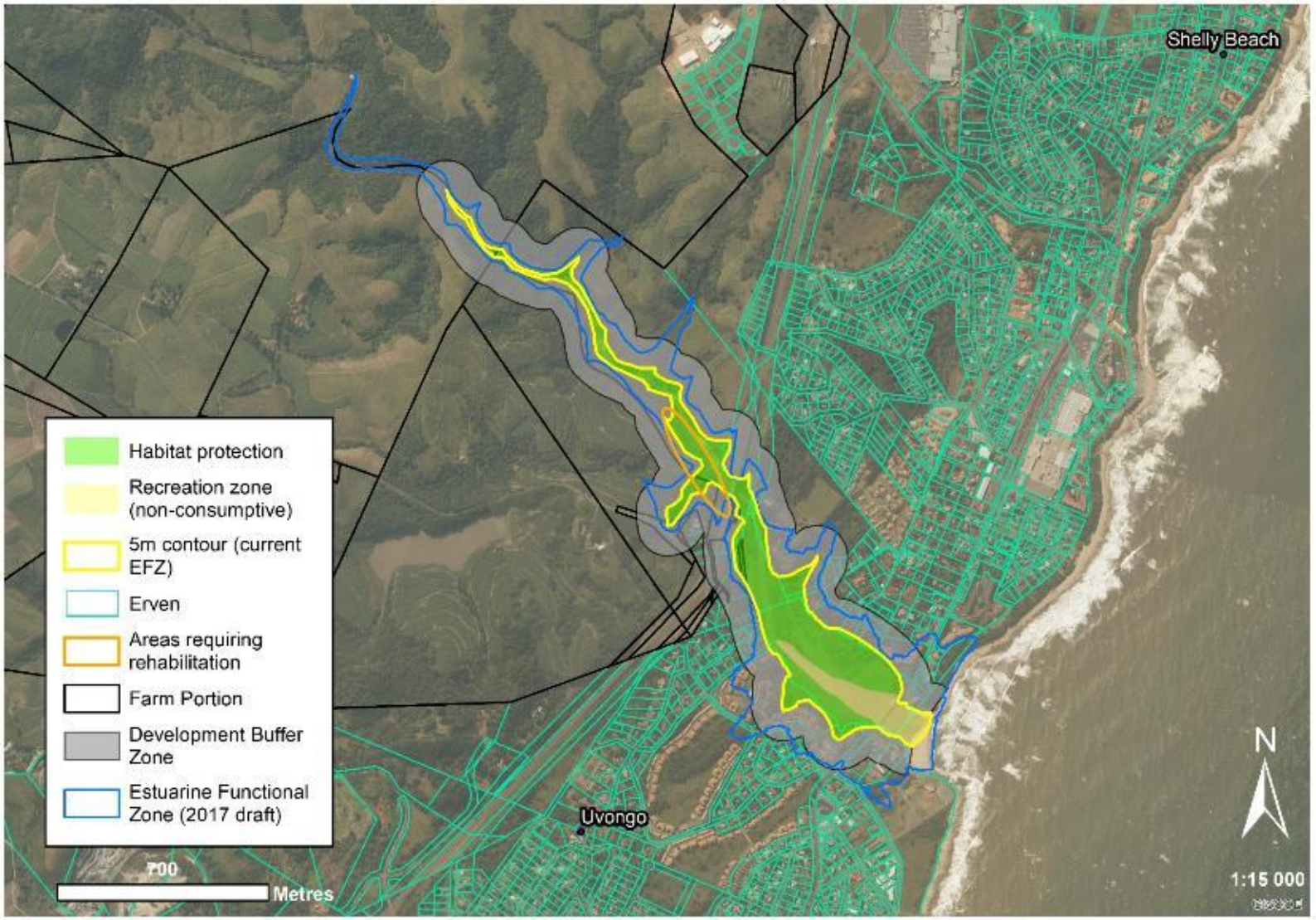
The table below depicts the Conditions of use for Recreational Zone of Mhlangeni Estuary.

PERMISSIBLE ACTIVITY	CONDITIONS OF USE	RELEVANT LEGISLATION	RESPONSIBLE AUTHORITY	ENFORCEMENT
Bait harvesting	• Bait harvesting only permitted seawards of the R620 bridge • No bait harvesting when estuary is open and drained, i.e. when sandbanks are exposed • Compliance with species bag limits and gear restrictions • 5 m aquatic buffer from estuarine margins (except sandbar/point of entry)	MLRA	DAFF	DAFF
Fishing	• Fishing only permitted seawards of the R620 bridge • Compliance with species bag limits and gear restrictions • 5 m aquatic buffer from estuarine margins (except sandbar/point of entry)	MLRA	DAFF	DAFF
Swimming	• Compliance with water quality guidelines for recreational use • 5 m aquatic buffer from estuarine margins (except sandbar/point of entry)	Health Act	Ugu	Ugu

Non-motorised Boating (canoeing, paddling)	• 5 m aquatic buffer from estuarine margins (except sandbar/point of entry) • Bathers take priority (bathers have right of way); • Boaters / canoeists must avoid bathers and must remain at least 5 m away from bathers; • Boaters / canoeists must avoid areas of high fishing activity and must be considerate of fishermen's lines	Bylaw	RNM	RNM
Other • **Removal of solid waste, clearing of invasive alien vegetation and other approved rehabilitation activities** • **Research and monitoring** • **Rescue operations**				

(Source: Estuary Management Plan, 2017)

Figure 15: Proposed Zonation of the Mhlangeni Estuary



(Source: Estuary Management Plan, 2017)

The geographical boundaries of the Mhlangeni Estuary, as per the EIA Regulations are as follows and illustrated in the table below:-

Downstream boundary	Estuary mouth 30° 53′ 24.68″S; 30° 20′ 56.14″E
Upstream boundary	30°53'02.16"S; 30°20'36.66"E
Lateral boundaries	5 m contour above MSL along each bank

Through the information gathered and stakeholder engagement, it was evident that management needs to be directed towards:

- managing development, associated activities and recreational use within the EFZ (including mouth management) and on adjacent properties;
- Reducing the risk of flooding without compromising estuarine health and function;
- improving the health and functioning of the estuary, specifically in relation to water quality and controlling activities that contribute to poor water quality; and
- Addressing coastal erosion and other impacts of climate change.

6.1. Current Zonation and Uses

The table below lists the land use types as per the RNM TPS and activities occurring in and/or adjacent to the Bilanhlolo Estuary.

LAND USE	
Purpose (Zonation)	**Description**
Business	Various restaurant and other small scale retail outlets
Public (access, open space and amenity reserve)	Designated open space for public use, this includes parking areas, boardwalks and foot paths and portions of the estuary Land zoned as Open Space and largely undeveloped
Residential	Predominantly holiday accommodation, including hotels, and residential establishments
Transport	Bridges: R620 coastal road, and Numerous local access roads
Government	Public facilities related to infrastructure and services, i.e. Sewage pump station
ACTIVITIES	
Fishing	Limited fishing near mouth and private properties
Boating	Non-motorised boating including recreational canoeing and paddle boating, mostly at the mouth and middle reaches
Swimming	Associated with Ramsgate beach area (Blue Flag beach)

(Source: Estuary Management Plan, 2017)

6.2. Proposed Spatial Zonation

a) Development Buffer Zone

According to the RNM TPS, the estuary body falls under a municipal River Reserve and the northern bank above the R102 road bridge is zoned as Amenity Reserve, as well as small portion below R102 where the beach facilities currently exist. The estuary is thus afforded some protection in respect to development pressure.

Any proposed development, or modifications to existing developments or land use zonation must comply with the EIA Regulations, TPS controls, conditions of the anticipated CML and local building regulations, and any other legal requirements.

Figure 11 2 below illustrates the boundaries of Bilanhlolo Estuary corresponding to the provisional CML (green, 5 m contour), current CPZ (green, 5 m contour) and CPZ (red, 10 m contour) development buffer zones. The dark blue lines indicate formal public access routes to the estuary/coast from the parking facilities on either side of the mouth

Urgent rehabilitation of the Bilanhlolo estuarine margin is required at the estuary mouth on the southern shoreline to prevent slippage of the established dune and to protect the whale viewing platform and information center, boardwalk and adjacent high-rise development.

At a system-wide scale, rehabilitation includes removal of invasive alien vegetation (terrestrial and aquatic) and reduction of nutrients entering the system.

b) Habitat Protection Zone

Despite its moderately modified and heavily urbanised state, the Bilanhlolo Estuary supports noteworthy Phragmites reed beds, swamp forest habitat and riparian coastal forest, which provide valuable natural coastal habitat. A Habitat Protection Zone in the form of a non-user Conservation Reserve (overlay) over private property is proposed over the EFZ westwards of the R620, but also includes the swamp forest on the northern bank, to protect the quality of the remaining natural environment, to minimise pollution and erosion, and ultimately reduce further degradation and transformation of this estuary.

Non-extractive recreational use is permitted within the estuarine water body (i.e. Paddle-boating, swimming, etc) and thus the 5m aquatic buffer for recreational activities applies. Bait harvesting, and fishing is not permitted within this area, i.e. this area is to be considered a no-take zone.

Below are condition of use for the Habitat Protection Zone for the Mbilanhlolo Estuary.

CONDITIONS OF USE	RELEVANT LEGISLATION	RESPONSIBLE AUTHORITY	ENFORCEMENT
Only low impact activities such as canoeing/paddling, swimming and walking (5 m buffer applies)	Bylaws	RNM	RNM
No harvesting of fish or bait organisms	MLRA	DAFF	DAFF
No cutting/removal of indigenous vegetation	NEM:BA TPS controls Bylaws	DAFF, RNM	RNM EDTEA
No further transformation or additional development or extension with the EFZ	ICMA NEMA	RNM	RNM
No discharge of contaminated and/or unattenuated stormwater runoff	TPS controls NWA	RNM	RNM

(Source: Estuary Management Plan, 2017)

c) Recreational Zone

It is proposed that the mouth region of the Bilanhlolo Estuary, which forms part of the Ramsgate Blue Flag Beach, be designated as a high-intensity recreational use zone. This area is to be strictly managed, particularly during peak holiday seasons when tourism and recreational activity are highest. The responsible authorities will be required to be present or active during these periods. For example, the RNM Aquatic Health and Safety department must appoint beach officials/managers to direct recreational activities as well as additional life guards to monitor this area specifically.

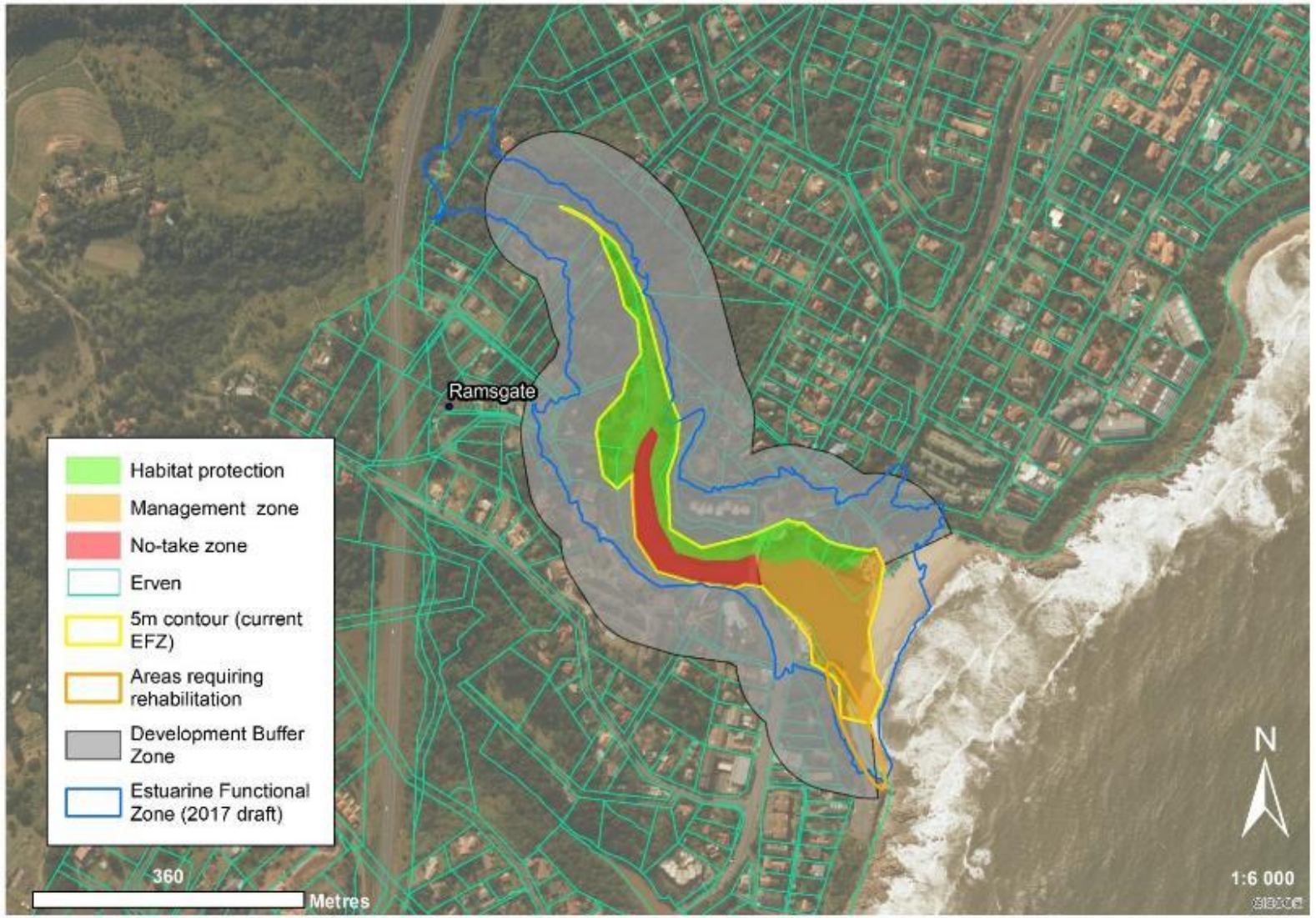
Below are Conditions of Use for the Recreational Zone of the Mbilanhlolo Estuary.

PERMISSIBLE ACTIVITY	CONDITIONS OF USE	RELEVANT LEGISLATION	RESPONSIBLE AUTHORITY	ENFORCEMENT
Bait harvesting	• Bait harvesting only permitted seawards of the R620 bridge • No bait harvesting when estuary is open and drained, i.e when sandbanks are exposed • Compliance with species bag limits and gear restrictions • 5 m aquatic buffer from estuarine margins (except sandbar/point of entry)	MLRA	DAFF	DAFF
Fishing	• Fishing only permitted seawards of the R620 bridge • Compliance with species bag limits and gear restrictions • 5 m aquatic buffer from estuarine margins (except sandbar/point of entry)	MLRA	DAFF	DAFF
Swimming	• Compliance with water quality guidelines for recreational use • 5 m aquatic buffer from estuarine margins (except sandbar/point of entry)	Health Act	Ugu	Ugu
Non-motorised Boating (canoeing, paddling)	• 5 m aquatic buffer from estuarine margins (except sandbar/point of entry) • Bathers take priority (bathers have right of way); • Boaters / canoeists must avoid bathers and must remain at least 5 m away from bathers;	Bylaw	RNM	RNM

	• Boaters / canoeists must avoid areas of high fishing activity and must be considerate of fishermen's lines			
Other • **Removal of solid waste, clearing of invasive alien vegetation and other approved rehabilitation activities** • **Research and monitoring** • **Rescue operations**				

(Source: Estuary Management Plan, 2017)

Figure 16: Proposed Zonation for the Bilanhlolo Estuary



(Source: Estuary Management Plan, 2017)

The geographical boundaries of the uMuntongazi Estuary, as per the EIA Regulations are as follows and illustrated below:-

Downstream boundary	Estuary mouth 31°00′41.17″S; 30°15′24.59″E
Upstream boundary	31° 00'33.84"S; 30°15'10.08"E
Lateral boundaries	5 m contour above MSL along each bank

Through the stakeholder engagement, it was evident that management needs to be directed towards:

- Improving water quality and controlling activities that contribute to poor water quality;
- Preserving the sense of place by controlling development activities on adjacent properties; and
- Providing protection for coastal fauna and flora.

(Source: Estuary Management Plan, 2017)

7.1. Current Zonation and Uses

The table below lists the surrounding land use types as per the RNM TPS and activities occurring in and/or adjacent to the uMuntongazi Estuary.

LANDUSE	
Purpose (Zonation)	**Description**
Public (access, open space and amenity reserve)	Designated open space for public use, this includes parking areas, boardwalks and foot paths and portion of the estuary on northern bank at the mouth Land zoned as Open Space and largely undeveloped
Residential	Residential and holiday establishments, including hotels (near the mouth) and guest lodges
Education	Eco-school present adjacent to the middle reaches of the estuary (southern bank)
Conservation	A private conservation area is present above the estuary (northern bank)
Transport	Beach access road to Glenmore boat launch site and for Sharks Board duties
ACTIVITIES	
Fishing	Limited fishing
Swimming	Assumed limited swimming associated with beach environment

(Source: Estuary Management Plan, 2017)

7.2. Proposed Zonation

a) Development Buffer Zone

The estuary body falls under a River Reserve in terms of the RNM TPS and is afforded some protection in respect to development pressure.

Any proposed development, or modifications to existing developments or land use zonation must comply with the EIA Regulations, TPS controls, conditions of the anticipated CML and local building regulations, and any other legal requirements. Specific regulations will apply to riparian property owners if the area is declared a protected area or conservation reserve.

Figure 12 2 below illustrates the boundaries of uMuntongazi Estuary corresponding to the provisional CML (green, 5 m contour), current CPZ (green, 5 m contour) and CPZ (red, 10 m contour) development buffer zones. The light blue lines indicate informal public access routes to the estuary/coast. The public boat launch site is no longer located within the estuary but on Glenmore Beach. The current access road should be properly designed, approved following a formal EIA process and reconstructed.

Rehabilitation of the uMuntongazi estuarine margin is required where there has been active removal of marginal/riparian vegetation, erosion and/or infilling. Ground truthing of these areas is required to prescribe appropriate mitigation. The pedestrian bridge at the mouth has become an icon of the uMuntongazi Estuary and Glenmore Beach. If damaged by dynamic coastal processes, a bridge of a more appropriate design should be constructed.

At a system-wide scale, rehabilitation includes removal of invasive alien vegetation (terrestrial and aquatic).

b) Protected Area

It is recommended that the uMuntongazi Estuary be considered for conservation because of its largely undisturbed condition and the intact habitat surrounding the system (MER, 2014). This will prevent further detrimental activities and development.

There is a private conservation area on the northern bank (extending from the estuary head region to the boundary of the Munster WWTW) that could potentially be extended to include the estuary water body and undeveloped land on the southern bank. Opportunities for extending and formalising the protected area will need to be investigated together with Ezemvelo KZN Wildlife. If protected area status is realised, the uMuntongazi Estuary will be

under the administration of Ezemvelo and there would need to be congruency between the Protected Area Management Plan and the uMuntongazi EMP.

As an interim measure towards establishing protected area status, a non-user Conservation Reserve (overlay) over the applicable private properties should be instated. No further transformation should be allowed, and the open space must be managed by the Municipality. The latter should include active patrols to detect and then activate the Working for the Coast programme to clear solid waste from the system. Increased and improved waste management in the catchment above the estuary is also required.

In terms of extractive estuary uses, a subsistence fishery application is pending for the uMuntongazi according to Ezemvelo (Mr P. Massyn, pers. comm.[1]). To ensure sustainable use, fishing activity will need to be policed to ensure compliance with the specific regulations, once developed and agreed to by the parties involved.

Low impact non-extractive activities are also permitted, and in this instance, all general regulations relating to various activities will apply. The 5m aquatic buffer for recreational activities.

Below are the conditions of use for the Umuntongazi Estuary.

PERMISSIBLE ACTIVITIES	CONDITIONS OF USE	RELEVANT LEGISLATION	RESPONSIBLE AUTHORITY	ENFORCEMENT
Swimming	Compliance with water quality guidelines for recreational use	Health Act	Ugu	Ugu
Non-motorised boating (canoeing, paddling)	Compliance with water quality guidelines for recreational use	Health Act	Ugu	Ugu
Fishing & Bait Harvesting	Compliance with species bag limits and gear restrictions	MLRA Regulations	DAFF	DAFF compliance officers
Subsistence Fishing	Compliance with pending agreements/ regulations	MLRA and specific regulations	DAFF	DAFF compliance officers
Other • **Removal of solid waste, clearing of invasive alien vegetation and other approved rehabilitation activities** • **Research and monitoring** • **Rescue operations**				

(Source: Estuary Management Plan, 2017)

Figure 17: Proposed Zonation for the Umuntongazi Estuary

(Source: Estuary Management Plan, 2017)

8.10.7. ALIEN INVASIVE PLAN

The Ray Nkonyeni Local Municipality developed an Alien Invasive Plan in 2017 to comply to the National Environmental Management: Biodiversity Act (Act No. 10 of 2004) [NEMBA] Section 76 (2), which require all organs of state to prepare an invasive species monitoring, control and eradication plan (Control Plan) for land under their control. The Control Plan forms part of the municipality's Integrated Development Plan and has to be reviewed every five years.

A total of 131 invasive alien species (IAS) have been identified on municipal properties. The IAS as well as properties have been prioritised for control. All areas in the municipality have also been prioritised according to a set criterion to encourage landowners/users to work towards similar priorities. The Control Plan has identified the following areas for stakeholders and the municipality to focus on for the next five years: Marina Beach, Palm Beach, Rathboneville, Southbroom, Travalgar, and 30 metre buffers along the Umtamvuna -, Umzimkhulu -, Ibilanhlolo and Mbango rivers. The following is also priority areas for the next 5 years: rivers where water weeds have been identified, walking trails managed by RNM and RNM offices.

Five items have been identified for successful planning and implementation of the Control Plan: Coordination; Resourcing; Preventing the introduction and extirpate emerging IAS where possible, Control of established IAS and Awareness. Actions, indicators and target dates have been set for each of these items and quarterly and annual reports should report on the progress and actions achieved.

Control methods for IAS listed have been identified which conforms to widely recognise best practices of IAS management. The Control Plan cannot be successful without the buy-in of the broader community including the Ingonyama Trust, conservancies, organs of state, landowers/users.

A number of organisations or departments implement invasive species projects within municipality and focus on various species. There is currently no co-ordinated effort within the municipality.

Table 15: Known Invasive Species Projects Implemented within the Municipality

Organisation/Department	Focus	Invasive species to control
DEA: NRM	Emerging weeds – for this project	Famine weed (Parthenium hysterophorus)
SANBI ISP	Emerging weeds	Mauritius hemp (Fucraea foetida) Pompom weed (Campuloclinium macrocephalum)
KZN EDTEA	Agricultural areas	All listed invasive species
Working for the Coast	Entire Coastal belt (high water mark till development)	All listed invasive species
Ezemvelo KZN Wildlife	Protected Areas	All listed invasive species
Conservancies	Each conservancy controls invasive species within the conservancy area.	All listed invasive species
Ray Nkonyeni Municipality	Clearing of private property where complaints have been received.	All listed invasive species

(Alien Invasive Plan, 2017)

The key vulnerabilities to invasion within the municipality include the wide network of roads spreading seeds to areas; high population density responsible for planting many of the invasive species and dumping of garden refuse which often includes invasive species. Other vulnerabilities include a large number of rivers and streams where seed is spread in the water. SANBI has identified areas of high biodiversity however many of these sites are highly invaded with invasive alien plants. It is important to conserve the areas which are relatively pristine and prevent further invasion.

8.10.7.1. CONTROL PLAN

The Control Plan covers 18,936.05 hectares of land owned by the municipality and 54,263.31 hectares owned by the Ingonyama Trust. A further 6,167.86 hectares are listed as "owner unknown" and another 29,212.67 hectares are unregistered and have not been included in

the Control Plan. It is important to note that this Control Plan has been developed with the best information available however these hectares might change when more information becomes available. It is the municipality's responsibility, as far as can be ascertained to control invasive species on Ingonyama Trust land. The RNM has been divided into three sections for controlling the invasive species.

8.10.7.2. LIST OF INVASIVE SPECIES

A total of 131 invasive alien plants listed in NEMBA were identified during the survey. The list should not be seen as a comprehensive list of all IAS in the municipality, but represents only invasive species identified on municipality property. If additional invasive species are identified it should be added to the list.

Each invasive species has been prioritised according to a set criteria, shown in the table below. The action required per species has also been listed in the table.

Four priority 1 species were identified, 48 priority 2 species, 76 priority 3 species and 3 priority 4 species were identified

Figure 18: Managed Areas

Table 16: Priority categories for Invasive Alien Species in the Ray Nkonyeni Municipality

Priority	Priority setting of IAS	Action required
1	Category 1a species & Category 1b species which have a very limited distribution, but which has the potential to expand its range exponentially.	Control as soon as possible to prevent spread.
2	Category 1b species which have become established and have a detrimental impact on the biodiversity of the area.	Control as per prioritized areas
3	Category 1b, 2 & 3 species with limited distribution and are known to spread slowly.	Control as per prioritized areas
4	IAS with effective biocontrol agents	Release correct biocontrol agents and monitor
5	Category 0 species that do not spread easily	These species should be removed when clearing teams are working in the area.

(Alien Invasive Plan, 2017)

8.10.7.3. PRIORITISATION AREAS

The criteria used to prioritise areas were as follow:-

1. Densities: Each area is prioritised according to the percentage of 0 - 5% density properties per total hectares of the area, e.g. if there is 20 ha at 0 - 5% density and the total hectares of the area is 100 ha: (20/100) x100 = 20%. The highest priority was then given to the cleanest area.

E.g. 20% area received 8 points out of a total of 10 points. 60% area received 4 points.

2. Current IAS projects: Areas with current IAS projects were given one additional point.

3. Additional criteria: Specific sites within the RNM were selected to be controlled as a priority for various reasons:

- Umtamvuna River – high biodiversity, relatively free of invasive species, high priority catchment for DEA.
- Umzimkhulu River - is a landmark feature for Port Shepstone town and certainly for RNM. Additional development is planned along the river and IAS should be controlled to biodiversity as well as aesthetic reasons.
- Ibilanhlolo River – high biodiversity, high tourism area, current projects on river by conservancy.
- Mbango Stream – this stream flows through Port Shepstone suburbs and RNM has received complaints from the community. It will be a good public relations exercise for RNM to control IAS along this stream, and to encourage landowners to also start clearing land adjacent to this stream.
- Injambili & Koshwana Rivers- prioritised for clearing of water lettuce. There has been biocontrol released and no water lettuce noticed recently however the rivers need to be monitored continuously.
- Walking trails – Ramsgate & Uvongo – *prioritised for tourism use.*
- RNM office gardens – To lead by example the offices of the RNM should be kept IAS free.

Ingonyama Trust Land: Only the rivers and streams on Ingonyama Trust land has been considered for clearing. A buffer of 30 metres on either side of all rivers and streams have been established to determine hectares per Ingonyama Trust land. Other areas within the Ingonyama Trust land has not been considered as it is unclear which areas have been set aside for building purposes. The Ingonyama Trust land has been placed low on the priority list. This decision has been made for the following reasons:

- The densities of invasive species are relatively high (average 40%);
- The municipality needs to establish for certain whether it is the municipality's responsibility to clear invasive alien species on land which belongs to the Ingonyama Trust; and

- Whether it will remain the municipality's responsibility to continue with follow up clearing once started.

The results of the priorities per area for invasive alien plant clearing within the municipality are illustrated in Tables below. Areas with similar results have been lumped together. Sanlameer has not been prioritized as it is managed privately and it needs to be established whether the 1.37 hectares identified as municipal property actually belong to the municipality.

AREAS	Total hectares of municipal properties	Priorities
MARINA BEACH	13.67	1
PALM BEACH	72.28	1
RATHBONEVILLE	3.59	1
SOUTHBROOM	150.18	2
TRAFALGAR	5.39	3
BANNERS REST	89.48	4
MARGATE	331.91	4
SUNWICH PORT	17.08	5
BROADVIEW ESTATE	7.87	6
LEISURE BAY	55.71	6
NEW BOLTON	7.02	6
MARBURG	136.85	7
PORT SHEPSTONE	236.88	7
RAMSGATE	99.60	7
SHELLY BEACH	245.39	7
SOUTHPORT	50.49	7
ST MICHAELS ON SEA	134.21	7
OSLO BEACH	46.37	8
ANERLEY	37.90	9
MELVILLE	31.93	9
HIBBERDENE	48.12	10
SEA PARK	8.32	11
GAMALAKHE A	217.11	12
UMTENTWENI	218.77	12
MERLEWOOD	80.38	13
PORT EDWARD	174.43	13
UMZUMBE	27.01	13
NZIMAKWE	109.10	14
LIONS GROVE	1.62	15
LUSHABA A	91.06	15
MADLALA	2,978.64	15

Table 17: Results of Priorities per area for invasive alien plant clearing

GLENMORE	**29.54**	16
BHOBHOYI	**23.59**	17
RURAL AREAS **(NB: to be further divided)**	**16,549.33**	18
ALBERSVILLE	**5.80**	18
PUMULA	**17.57**	18
CELE/VUKUZITHATHE	**18,259.47**	18
NYUSWA/ QINISELANI/ MANYUSWA	**7,012.11**	18
MAVUNDLA	**3,426.77**	19
NSIMBINI	**3,310.71**	19
XOLO	**18,627.06**	19
LUSHABA B	**207.69**	20

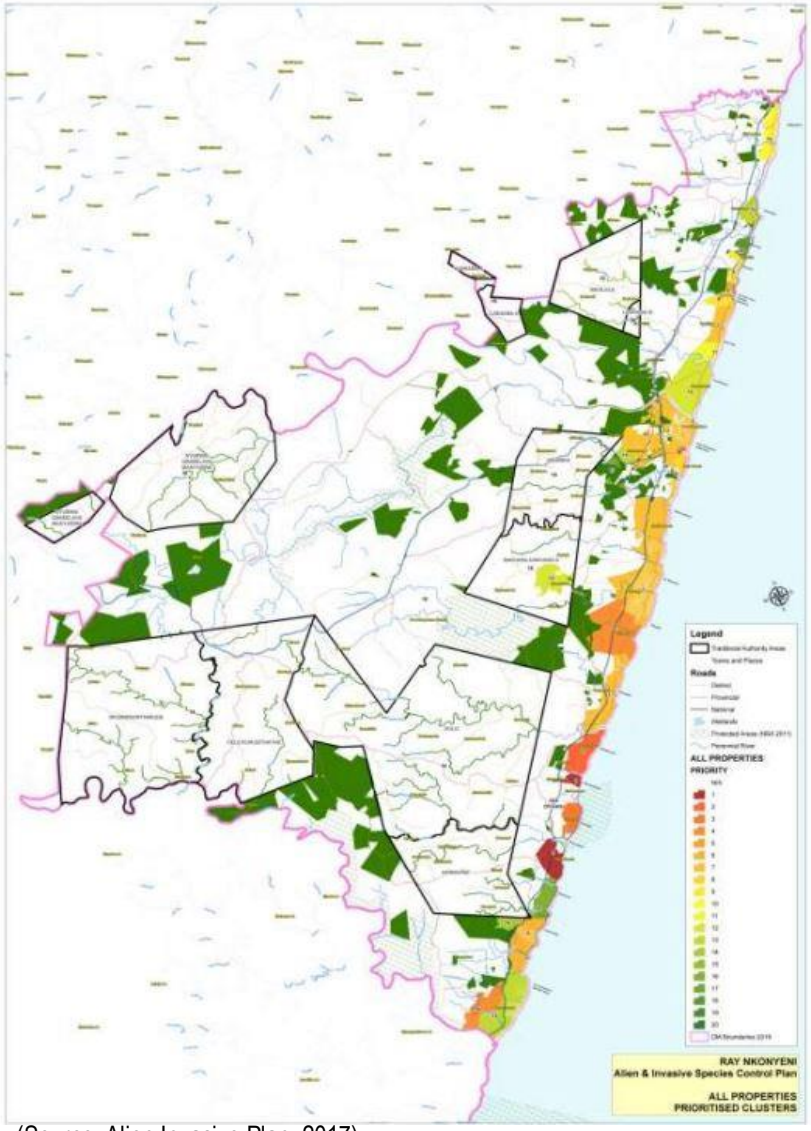
(Source: Alien Invasive Plan, 2017)

Table 18: Additional Priorities

Area/Site	Length (km)	Buffer (including both sides)	Buffer (ha)
Umtamvuna	32,354	30	97,06
Umzimkhulu	38,877	60	233,26
IBilanhlolo	8,649	60	51,89
Koshvana & Injambili rivers	7,229	60	43,37
Mbango stream	1,331	60	7,99
Walking trails (Ramsgate & Uvongo)	N/A	N/A	10
RNM offices	N/A	N/A	3

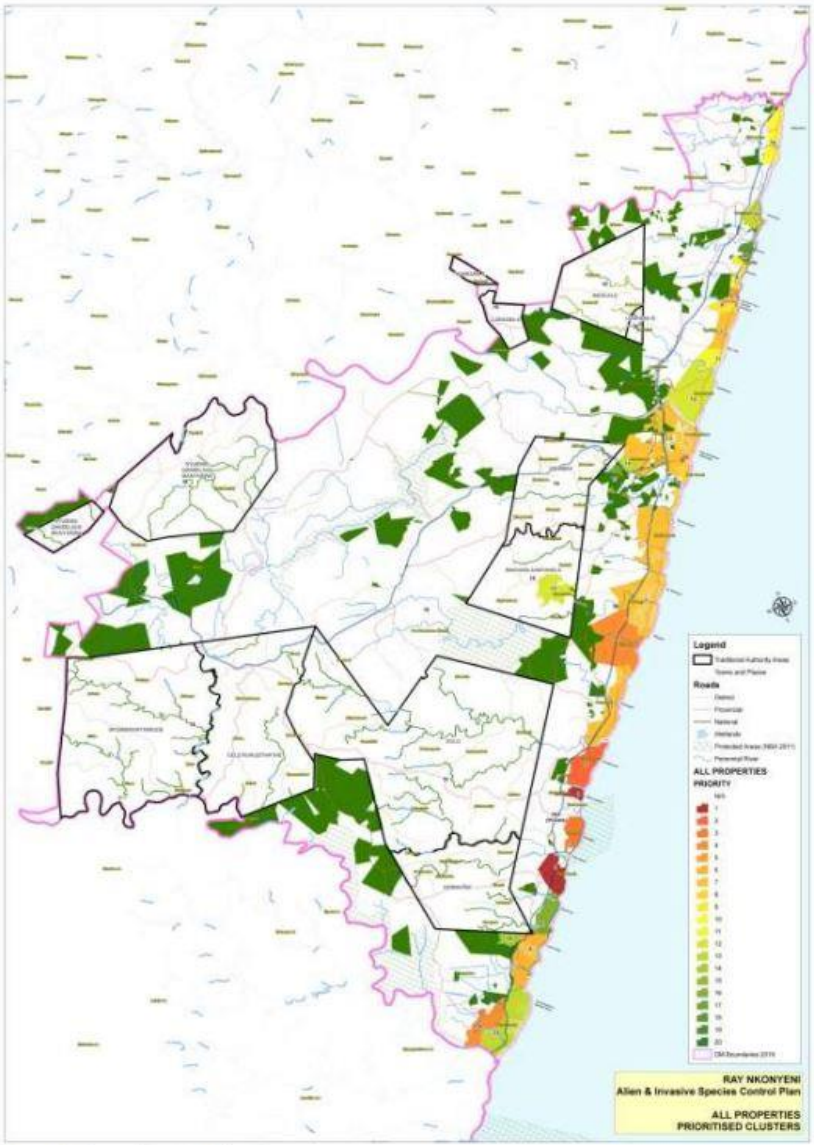
(Source: Alien Invasive Plan, 2017)

Figure 19: Properties Prioritised



(Source: Alien Invasive Plan, 2017)

Figure 20: Properties Prioritised Per Area



(Source: Alien Invasive Plan. 2017)

8.10.7.4. ASSESSMENT OF EXTENT OF INFESTATION

To compile a list of invasive species, surveys were conducted to assess a minimum of 10% of each area. SANBI's biodiversity maps were overlaid to identify high biodiversity areas. A 10metre buffer around each high biodiversity area was established so that properties close to high biodiversity sites could be identified. Next properties were selected to be representative of an area, for example 10% of the road verges, beach front, open areas, and public areas (e.g. cemeteries) were selected per area.

Surveys were conducted by vehicle and where necessary by walking the property. The survey captured the following data:

1. Property number
2. Dominant invasive alien plant
3. Sub-dominant invasive alien plant
4. Density of the invasive alien plants in the property expressed as a percentage
5. Intensity – expressed as low, medium and high referring to the spread within a property
6. Stage – expressed as seedlings, young, intermediate and mature.
7. All other additional invasive alien plants identified per property were also captured.

In the Ingonyama Trust land surveys were conducted by driving, noting the invasive alien species and determining the average density per area indicated in the table below.

The surveyed information was then displayed on a map. Estimates were then made of the remaining properties per area. For example if the results of the survey showed that 10% of the road verges in an area are 5% density then it was assumed that the remaining road verges of the area would also be 5%.

The results of the assessments showed the areas between the high water mark along the coast and inland until the street/houses generally have low infestations of invasive alien plants (average of 5% densities recorded). It is presumed that this is due to the ongoing work by the Working for the Coast Programme, conservancies as well as the conditions along the beachfront which make it unfavourable to many invasive species. Open areas in suburbs were generally between 30 – 60% density while areas next to rivers and very disturbed areas were up to 70% density. Rural areas and the Ingonyama Trust areas were between 20 –

50% density. There was a minimum of two invasive species found per property, the maximum surveyed on one property was 35 invasive species.

SANBI's biodiversity maps were overlaid to identify high biodiversity areas when conducting surveys, however many of these areas are very disturbed with a high number of invasive species occurring or they already contain buildings. High biodiversity areas were also very fragmented making it difficult to prioritize a small pocket in a sea of invasive alien plants. It was thus decided to prioritise areas rather small pockets within an area.

The table below, show the results of the survey conducted to determine the extent of the infestation within municipal property. The results are also illustrated in Figure 22.

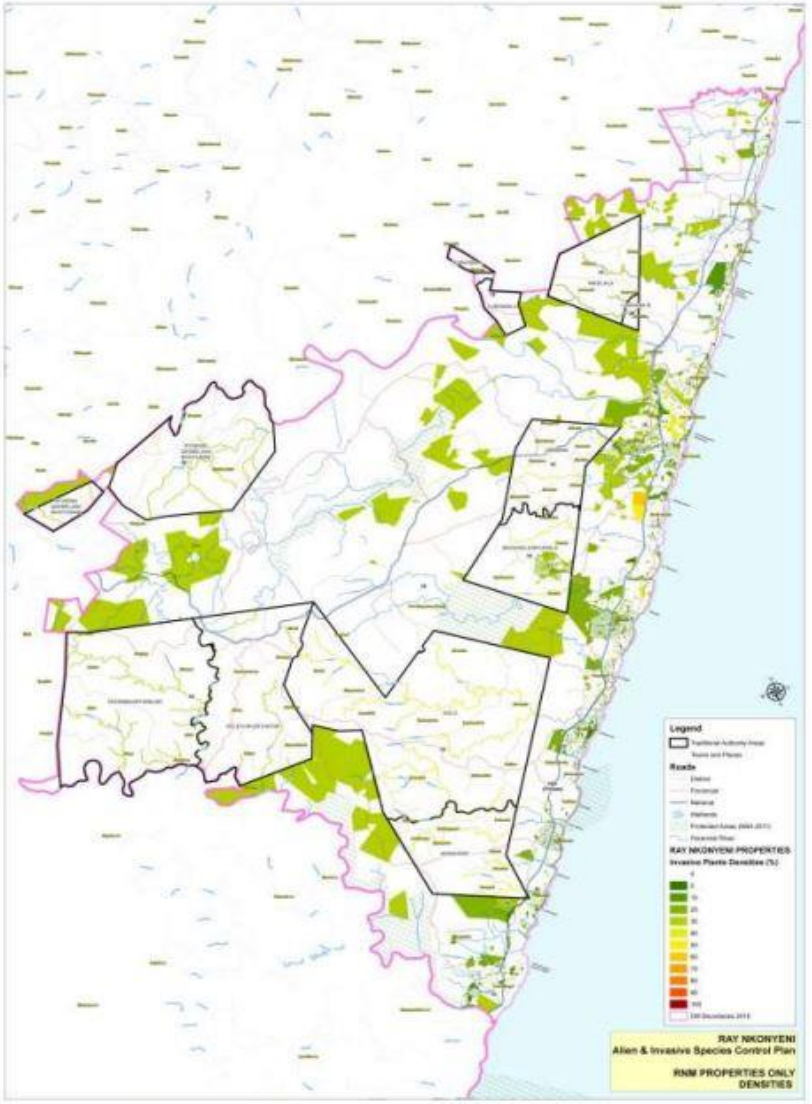
Figure 21: Results of the IAS Assessment

AREAS	Hectares Densities								
	5%	10%	20%	30%	40%	50%	60%	70%	Total
Rural Areas	135.98	294.14	2,185.99	13,918.90	11.99	2.33			16,549.33
Albersville				5.80					5.80
Anerley	2.35	26.56	9.00						37.90
Banners Rest	40.93	42.52	6.02						89.48
Bhobhoyi*		1.45	11.06	11.08					23.59
Broadview Estate	1.79			6.08					7.87
Gamalakhe A*		76.65		140.46					217.11
Glenmore	0.40	0.72	22.38	6.04					29.54
Hibberdene		28.94	15.84	2.21	1.13				48.12
Leisure Bay	12.01	31.75	10.75	1.21					55.71
Lions Grove			1.62						1.62
Marburg	13.92	10.57	85.20	27.16					136.85
Margate	134.89	26.51	152.13	14.09	4.29				331.91
Marina Beach	11.80	1.47	0.40						13.67
Melville	0.89	25.27		5.77					31.93
Merlewood		16.57	16.27	47.55					80.38
New Bolton	1.78		5.24						7.02
Nzimakwe*		15.82		93.28					109.10
Oslo Beach	30.22	12.68	3.47						46.37
Palm Beach	58.00	6.37	2.07	2.12	3.72				72.28
Port Edward	2.53	47.27	16.93	107.70					174.43
Port Shepstone	37.96	13.54	28.43	27.68	126.49			2.78	236.88
Pumula				17.57					17.57
Ramsgate	10.61	59.98	7.58	14.69	6.74				99.60
Rathboneville	3.59								3.59
Sanlameer	1.26			0.12					1.37
Sea Park		4.21	2.71	1.40					8.32
Shelly Beach	23.96	50.69		11.16		74.30	85.28		245.39
Southbroom	117.91	11.94	18.95	1.36					150.18
Southport	7.50	24.19	7.30	11.49					50.49
St Michaels	19.08	5.08	70.32	5.84	21.49	1.39	9.73	1.28	134.21
Sunwich Port	5.75	6.25	4.62	0.45					17.08
Cele/ Vukuzithathe*				17,365.94	893.53				18,259.47
Lushaba A*			91.06						91.06
Lushaba B*							207.69		207.69
Madlala*			2,978.64						2,978.64

Mavundla*				5.16	3,421.61				3,426.77
Nsimbini*					3,310.71				3,310.71
Nyuswa/Qiniselani/ Manyuswa*				7,012.11					7,012.11
Xolo*					18,627.06				18,627.06
Travalgar	3.27	0.61	1.51						5.39
Umtentweni	18.94	68.92	26.79	104.12					218.77
Umzumbe		5.58	21.43						27.01
Grand Total	**697.31**	**916.24**	**5,803.72**	**38,968.55**	**26,428.76**	**78.03**	**302.70**	**4.06**	**73,199.36**

(Source: Alien Invasive Plan, 2017)

Figure 22: Densities of Alien Plants per property



(Source: Alien Invasive Plan, 2017)

8.10.7.5. REPORT ON THE EFFICACY OF PREVIOUS CONTROL OR ERADICATION MEASURES

The only invasive alien plant control that is implemented by the municipality is the clearing of properties where a health and/or environmental hazard has been reported. Invasive alien plants as well as indigenous species are then cleared with the assistance of a trained contractor. The bill for the clearing is sent to the owner of the property. The procedure is that all cut material has to be removed from the property, however moving any parts of an IAS is not permissible as per NEMBA. This procedure would need to be discontinued as soon as possible and other possibilities investigated such as mulching the material on the property.

Other invasive species control programmes implemented within the municipality by stakeholders include:

- Working for the Coast Programme. The programme has been ongoing since 2007 and employs six teams of 15 people each along the entire stretch of the RNM coast. The teams are employed to control invasive alien plants along the coast as well as other items such as collecting rubbish.

According to the recent survey to determine densities of IAS, infestations along the coast has been estimated at between 5 – 10%. The low infestation may be partly due to activities of this Programme. It was however noted that all the invasive species identified were mature stands.

Over 25 invasive alien plants were identified along the coast, it could be that identification of some of the species are a problem for the teams and are therefore not cleared. Emphasize should be put on identification of IAS as well as clearing methods. The municipality should be involved in quality control and making sure the areas prioritized in this plan receive treatment first.

- KZN EDTEA. The Programme has a project in the iZingolweni area. No further information is known on the hectares cleared annually or the people employed.
- DEA: NRM. The Programme's implementing agent in the municipality is the Wildlands Conservation Trust and is responsible for famine weed (Parthenium hysterophorus) clearing at identified sites. GPS points are captured of sites identified with famine weed and regular follow ups are conducted. This is a crucial project for the municipality as current levels of the plant is low enough for localized eradication (extirpation), to prevent further spread in the municipality and into the Eastern Cape Province. No new sites of famine weed were detected during the surveys. A map of all clearing sites are available at RNM.
- SANBI Invasive Species Programme. This Programme is responsible for all 1a category NEMBA species and is active within the municipality treating Mauritius hemp (Furcraea foetida) and Pompom weed (Campoclinium macrocephalum) – as category 1b species however it occurs in very low densities and is therefore considered a priority species. A map of all sites are available at RNM.
- Conservancies. Various conservancies are active controlling invasive alien plants within their area. This has been evident in the surveys conducted. Large notice boards have also been placed in various areas/villages to create awareness of commonly found invasive alien plants found in the municipality. Other initiatives include newsletters sent to residents to create awareness and encourage IAS control. Funding for control is supported by the rate payer's association of an area, or is often voluntarily.

9. SPATIAL PLANNING ISSUES AND CHALLENGES

9.1. SIGNIFICANCE FOR URBAN COASTAL CORRIDOR

The regional economy has been shaped by the economic opportunities afforded by that coast. Port Shepstone was established as an active seaport during the nineteenth century as a sea port transporting sugar to Durban, and functioned that way for some time. This also motivated the establishment of Umzimkulu sugar mill along Umzimkulu River running into the sea at Port Shepstone, the river mouth having functioned as an early sea-port. It was also for this reason that motivated for urban development to take place within Port Shepstone. As time progressed the function changed with tourism that became a drive.

This was alluded by the 1998 the Green Paper on Sustainable Coastal Development for South Africa, drawing upon a coastal economy specialist study, noted that: 'A large proportion of the economic activity in the Hibiscus Coast region is due to [beach] tourism and recreation. During the holiday periods there is a large influx of visitors from all over the country. Indeed, over the past decade what has become striking is that the rise of urbanization, manufacturing and services are of growing importance.

9.2. URBANISATION AND FUTURE NEED FOR INTEGRATED MIXED RESIDENTIAL

Ray Nkonyeni urban centres has experienced a sizeable amount of urbanization which amount to 41% over a 10-year period (2001 – 2011). The impact of migration is assumed to be one of the main driving forces. If this is not properly managed then one of the most visible crises that may emerge may be informal settlements which can act as poverty traps that are badly located and are ideal breeding grounds for social problems (e.g. routine aggression and violence, substance abuse, broken family relations) and suffer high levels of violent crime (compared with commercial and middleclass areas). A study undertaken by South African Cities Network (titled Towards an Integrated Urban Framework) advised that a "growing town/ city can win with sustainable and mixed-use development".

Central to this advice is a need to plan for a liveable, economically viable and sustainable towns with infrastructure that resilient enough to support inclusive growth. If properly managed, urbanisation generates significant opportunities for economic growth and poverty reduction. The urban areas of Ray Nkonyeni will continue to grow and should be treated as a priority for urban policy, increased investments, services delivery, mixed use affordable integrated housing provision to support emerging stronger economy.

9.3. TRANSPORT ROUTE AS AN INFLUENCE FOR FUTURE DEVELOPMENT DIRECTION

The rural settlements within Ray Nkonyeni are highly influenced by factors of accessibility and proximity to public transport routes. These settlements tend to develop or concentrate along ridgelines and create a complex web. This is usually where transport routes run, which provides people with easy access to public transport that links them to areas that provide a range of services and public facilities. Rural settlement patterns in Ray Nkonyeni are closely related to migration patterns, livelihood survival strategies and the ability to access certain services and infrastructure. They have not developed according to predetermined systems and procedures and therefore future settlement trend predictions are limited to that which is known and experienced.

9.4. ENVIRONMENTAL ANXIETIES

Ray Nkonyeni Municipality has a variety of environmentally related challenges. These need to be addressed from an environmental perspective:

- There are a number of dongas which are susceptible to soil erosion which need to be properly maintained and rehabilitated. Development in these areas should be minimized.
- The undulating terrains that are prevalent within Ray Nkonyeni restrict development.
- Areas located in the vicinity of the river banks, should be protected.
- Wetlands which are found around UMtamvuna, Port Edward and Munster should be protected as a limited development zone.

- The management of solid waste and the treatment of all waste should be considered the shortage of landfill sites and waste recycling programs is a concern.
- The high density rural settlements should be upgraded from VIP to waterborne sewerage system.
- Illegal sand mining in Mzimkhulu River and Mzumbe River.

9.5. SIGNIFICANCE OF TOURISM AND AGRICULTURE

Ray Nkonyeni is located within a region that has been characterised as being highly dependent upon agricultural practises and tourism. It has significant portions of land that have been identified as having a high agricultural potential. Being a rural environment with limited alternative opportunities to economic development, the majority of the households invariably rely on agriculture for both livelihood and economic requirements. Compounding the issue is the notion that, at present, the Ray Nkonyeni is a tourism hotspot within the South Coast and has a well-established commercial farming sector. Agriculture and tourism form the base of the economy of the entire municipality and therefore the management of these sectors should be prioritised. Ray Nkonyeni also has significant conservation areas that have economic value and contribute to the local economy namely the Umtamvuna and Mbubazi Nature Reserves.

It was mentioned earlier that Ray Nkonyeni is bordered by various municipalities namely Mbizana LM and Umzumbe LM. These municipalities influence and impact on the development within Ray Nkonyeni. There are linkages and development corridors that have been identified, that present comparative advantages which should essentially be exploited for further economic gain within Ray Nkonyeni. Primary corridors such as the N2 serve as trade distributor route (it distributes and collect traffic from different areas) hence it is identified as one of the key primary investment corridors. To further strengthen the importance of this road, it also serves as a link road with adjoining municipalities. Another significant transport route is R61, which is also identified as a primary development corridor. This route connects Ray Nkonyeni with Mzamba in Eastern Cape. Critical in this regard is to strengthen connectivity with neighbouring areas so that Ray Nkonyeni may benefit from potential economic spin-offs from various development initiatives in other areas within and beyond its administrative boundaries.

9.6. DILAPIDATED RURAL TOWNS

The role that rural towns play in the economy include that of a service centres and an economic hub which supports the clusters of rural settlements that surround it. Such towns would include Ezinqoleni which grew to become the small commercial services hubs providing a number of relatively low paying formal and informal jobs for some members of the local and regional economies. The current role that this town for the community includes:

- Basic services – banking facilities, educational facilities, health and safety;
- Provides basic market for goods and services – opportunities for small business development and jobs; and
- Transportation hub which links different areas within the municipality with other regions within Eastern Cape and KwaZulu-Natal.
- The growth of this towns was mainly organic and incoherent with the planning precept. The most visible challenges at this stage include the following:
- Poor urban character i.e. lack of relation between streetscapes, building facades, poor street furniture and land use;
- Inefficient urban structure that promotes congestion, lack of parking and informality; and
- Lack of requisite urban infrastructure which includes storm-water drainage, streetlights and signage.

Such that they are characterised by an unstructured linear form, land use separation and sprawling residential expansion. This towns should be planned as the notable rural towns, be structured and managed to enable it to perform their functions efficiently and effectively. The ultimate goal is to address the negative status quo and develop the CBDs into an aesthetically and appealing precincts where people will enjoy a mixture of both social and economic services

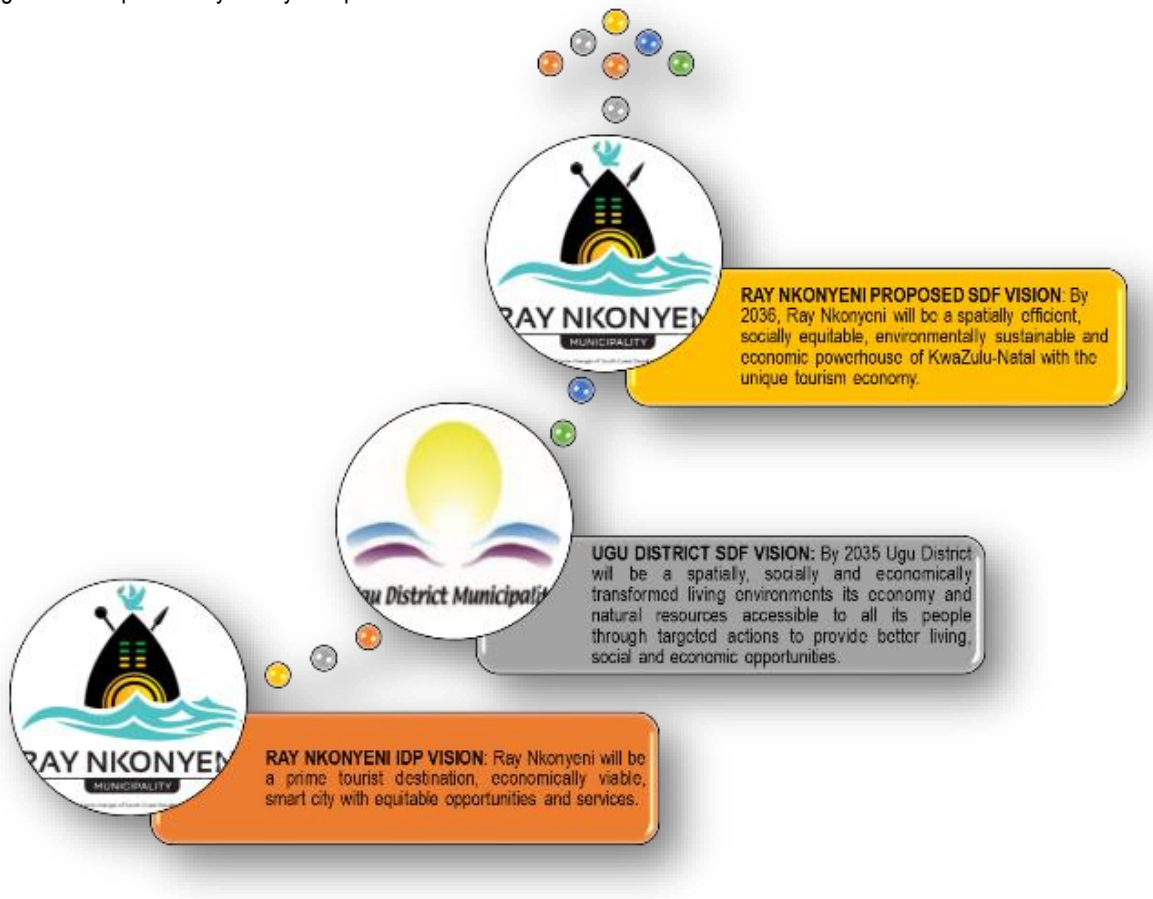
10. SPATIAL DEVELOPMENT GOALS AND OBJECTIVES

10.1. SPATIAL DEVELOPMENT VISION AND MISSION

Ray Nkonyeni spatial vision is being developed to guide the direction and growth of the Municipality. The key underlying themes for the development of this vision are Ugu District Development Vision as captured in the district IDP as well as the principles that emanated from SPLUMA. Ugu DM vision promotes equity and accessibility to the entire spectrum of economic opportunities that the district has to offer. This principle of equity is very important as it also reflected on SPLUMA as the first principle (i.e. Spatial Equity) as such Ray Nkonyeni adopted this principle as part of the spatial vision.

The other elements of the vision advocate for spatial efficiency, environmental sustainability, economic growth and positioning Ray Nkonyeni as the leading tourist's destination within the province of KwaZulu-Natal. The proposed spatial development vision is aligned to the National Development Plan: 2030 vision, the Spatial Planning and Land Use Management Act, the KZN PGDS and the UGu DM Vision and it should also be aligned to the upcoming Ray Nkonyeni Development Vision.

Figure 23: Proposed Ray Nkonyeni Spatial Vision



10.2 MUNICIPAL DEVELOPMENT STRATEGY (VISION 2036)

The Ray Nkonyeni 20-Year Strategic and Growth Development Plan is driven to enhance its regions competitiveness and is committed to ensuring social inclusion, enhancing skills and to alleviate poverty. The plan is guided by development principles such as spatial equity, inclusive economy and skills development, which were the foundation throughout the strategies conceptualisation. The Strategic Growth and Development Plan acknowledges the municipal area's current developmental and socio-economic challenges but sets its growth trajectory in line with the municipality's Integrated Development Plan (IDP) and Spatial Development Framework (SDF). It does this by adopting and anchoring its goals on the IDP and SDF. Vision 2036 provides a sense of purpose and direction for the goals and strategies of the Strategic Growth and Development Plan, ensuring that they are achievable. The identified strategies will enable individuals to grow and develop through the expansion of their own capabilities, thus empowering communities and promoting a more inclusive economy.

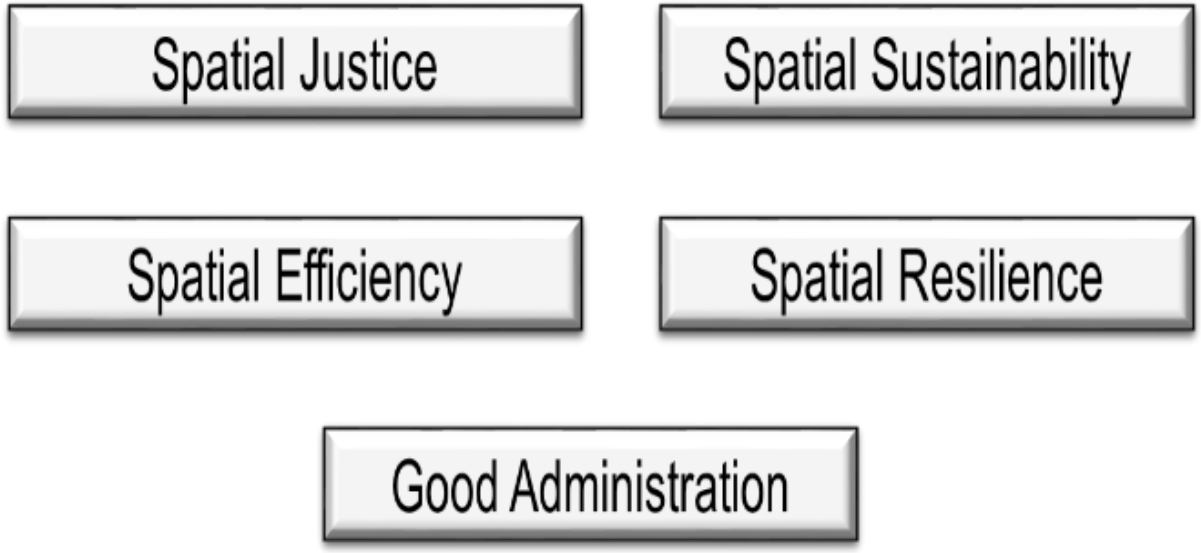
10.2. SPLUMA PRINCIPLES

The SDF is guided by the above five (5) spatial principles which form the foundation of an appropriate SDF. These principles were formulated as part of the Spatial Planning and Land Use Management Act (Act No. 16 of 2013) (SPLUMA). In addition, they promote:-

- ✓ accountable spatial planning, land use management and land development decision-making by organs of state;
- ✓ cooperative governance and wider information sharing in plan-making and implementation; and
- ✓ Maximum openness and transparency in decision-making.

The principles and norms collectively form a vision for land use and planning in Ray Nkonyeni. They constitute a single point of reference, and an overarching coherent set of policy guides to direct and steer land development, planning and decision-making in land use so that outcomes thereof are consistent with the development objectives as outlined in the IDP.

Figure 24: SPLUMA Principles



10.2. SPATIAL DEVELOPMENT OBJECTIVES AND STRATEGIES

10.2.1. SPATIAL JUSTICE

Table 19: Objectives and Strategies of Spatial Justice

SPLUMA OBJECTIVES	RAY NKONYENI SPATIAL DEVELOPMENT FRAMEWORK	
	✓ **OBJECTIVES**	✓ **STRATEGIES**
✓ **Past spatial and other development imbalances are redressed through improved access to and use of land;** ✓ **Spatial Development Frameworks and policies at all spheres of government address the inclusion of persons and areas that were previously excluded, with an emphasis on informal settlements, former homeland areas and areas characterised by widespread poverty and deprivation;** ✓ **Spatial planning mechanisms, including land use schemes, include provisions that enable redress in access to land and property by disadvantaged communities and persons;** ✓ **Land use management systems are inclusive of all areas of a municipality and specifically include provisions that are flexible and appropriate for the management of disadvantaged areas, informal settlements and former homeland areas;** ✓ **Land development procedures will include provisions that accommodate access to secure**	✓ Transform the apartheid city	✓ Redress existing imbalances in the distribution of different types of residential development, and avoid creating new imbalances ✓ Transform townships and informal settlements into economically and socially integrated neighbourhoods ✓ Encourage public/private partnerships to develop integrated human settlements and diversify housing delivery
	✓ Encourage integrated settlement patterns	✓ Generally, support development, rezoning, subdivision and similar applications that promote a greater mix of land uses, people and/or densities ✓ Ensure that land uses and built form within predominantly residential areas support the daily functioning of those areas and contribute to their overall character and well-being ✓ Ensure that development proposals provide an adequate and equitable distribution of social facilities, recreational space and public institutions
	✓ Establish an integrated, town-wide public transport system that supports the accessibility grid	✓ Create a hierarchy of integrated public transport services related to the accessibility grid ✓ Ensure that new urban development is supported by appropriate public transport infrastructure and services ✓ Lobby for the introduction and/or expansion of passenger rail services ✓ Include walking and cycling as essential components of land use planning ✓ Introduce parking policies to encourage use of the most context-specific and appropriate modal travel choice
	✓ Address spatial economic imbalances	✓ Unlock employment-generating opportunities within Ray Nkonyeni ✓ Support private-sector development initiatives in locations that are easily accessible ✓ Improve public transport links between Ray Nkonyeni and the main economic nodes of the city

10.2.2. SPATIAL SUSTAINABILITY

Table 20: Objectives and Strategies on Spatial Sustainability

SPLUMA OBJECTIVES	RAY NKONYENI SPATIAL DEVELOPMENT FRAMEWORK	
	OBJECTIVES	**STRATEGIES**
✓ **Promote land development that is within the fiscal, institutional and administrative means of the country;** ✓ **Ensure protection of the prime and unique agricultural land, the environment and other protected lands and the safe utilisation of land;** ✓ **Promote and stimulate the effective and equitable functioning of land markets;** ✓ **Consider all the current and future costs to all parties for the provision of infrastructure and social services in land developments;** ✓ **Promote land development in locations that are sustainable and limit urban sprawl; and** ✓ **Result in communities that are viable**	✓ Encourage a more compact form of development	✓ Promote appropriate land use densification; ✓ Contain the development footprint of the city, and protect natural, rural, urban and heritage assets with development edges: Urban and Coastal Edge. ✓ New developments that promote urban sprawl should be discouraged. ✓ Prioritize infill development in areas that provide opportunities for linking and integrating peripheral areas. ✓ Ensure clustering of various activities (work, live, play and pray) at appropriate locations. ✓ Densification and Infill should be promoted in well serviced, strategically located areas and should contribute to the restructuring of urban environment. ✓ Densification and Infill should help to create thresholds for public transport and contribute to the more effective utilization of various modes of public transport. ✓ Higher residential densities should be promoted around nodes and within corridors
	✓ Manage urban development impacts on natural resources and critical biodiversity networks	✓ Increase efforts to protect and enhance biodiversity networks at all levels of government ✓ Reduce the impact of urban development on river systems, wetlands, aquifers, aquifer recharge areas and discharge areas ✓ Manage urban development along the coast in a sustainable and precautionary manner ✓ Protect valuable agricultural areas, existing farmed areas and horticultural areas from urban infringement, and support urban agriculture ✓ Adopt a proactive planning approach to excavating resource management
	✓ Integrate land use, economic and transport planning	✓ Reinforce and enhance development corridors ✓ Encourage medium to higher-density forms of urban development to locate on or adjacent to activity routes, development routes and activity streets.
	✓ Support the rationalisation, upgrade and/or development of economic gateways, and manage land uses around them appropriately	✓ Support development and appropriate surrounding land uses ✓ Create and manage a functional interface between ports/harbours and their surrounding areas

10.2.3. SPATIAL EFFICIENCY

Table 21: Objectives and Strategies on Spatial Efficiency

SPLUMA OBJECTIVES	RAY NKONYENI SPATIAL DEVELOPMENT FRAMEWORK	
	OBJECTIVES	**STRATEGIES**
✓ **Land development optimises the use of existing resources and infrastructure;** ✓ **Decision-making procedures are designed with a view to minimising negative financial, social, economic or environmental impacts; and** ✓ **Development application procedures are efficient and streamlined and time frames are adhered to by all parties;**	✓ Make efficient use of non-renewable resources	✓ Promote a culture of sustainable development and living
	✓ Protect and enhance the municipality's rural environment	✓ Prevent urban development from intruding into the rural environment ✓ Support appropriate development and activities in rural areas, in and around unique and culturally significant rural settlements ✓ Rationalise and proactively manage smallholdings ✓ Develop and manage rural gateways
	✓ Improve connectivity within the Municipal area.	✓ Strengthen and integrate public transport networks, services and modes to ensure that passengers move optimally from origin to destination in an efficient manner and in the shortest time possible. ✓ Investigate and promote public transport links between disadvantaged areas and main economic nodes of the Municipality ✓ Facilitate movement between areas of need and wider opportunities ✓ Create a safe, efficient and integrated city wide public transport system and use it as a tool to restructure the Municipality and integrate marginalized areas. ✓ Include Non-Motorized Transport as essential components of land use and transport planning ✓ Investigate new road and rail based network links. ✓ Engage with PRASA to explore potential of improving passenger rail service
	✓ Promote accessible, townwide destination places	✓ Develop high-quality, accessible destinations and public spaces in newly developed and neglected areas

10.2.4. SPATIAL RESILIENCE

Table 22: Objectives and Strategies on Spatial Resilience

	RAY NKONYENI SPATIAL DEVELOPMENT FRAMEWORK	
SPLUMA OBJECTIVES	**OBJECTIVES**	**STRATEGIES**
✓ **Flexibility in spatial plans, policies and land use management systems is accommodated to ensure**	✓ Sustain natural environments and resources	✓ Optimize the economic, social, appealing and functional value of open space services through the implementation of Open Space System ✓ Existing natural environmental resources should be protected and enhanced to ensure that the ecosystem within the open space are able to effectively deliver services

sustainable livelihoods in communities who are most likely to suffer from the impacts of economic and environmental shocks;		✓ Development must be directed away from hazardous areas such as floodplains, unstable soils and steep slopes ✓ Protect environmentally sensitive areas, agricultural land and open space ✓ Protect river catchments and develop a catchment management plans for river systems where rapid development will occur ✓ Create a network of green open spaces and protect important environmental areas ✓ Support sustainable catchment management and storm water practices. ✓ Promote the prevention and reduction of pollution.
	✓ Enhance the unique sense of place and quality of the built form of Ray Nkonyeni	✓ Promote good contextual urban design fit, and ordering of the relationship between people, urban space and the environment (built and natural)
	✓ Enhance the value of heritage resources and scenic routes	✓ Identify, conserve and manage heritage resources, including cultural landscapes ✓ Ensure access to and provide information about, public heritage resources ✓ Create an enabling environment for urban regeneration that allows buildings and sites of historical and architectural significance to make a positive contribution to the economy and quality of urban life ✓ Celebrate and reinforce Ray Nkonyeni's diverse historical legacies through urban form, architectural design, signage and, where appropriate, artwork ✓ Provide positive spaces for cultural and social ceremonies and life-related events ✓ Carefully manage land uses and interventions along identified scenic routes, and in places of scenic and visual quality ✓ Identify additional scenic routes

10.2.5. GOOD ADMINISTRATION

Table 23: Objectives and Strategies on Good Administration

SPLUMA OBJECTIVES	RAY NKONYENI SPATIAL DEVELOPMENT FRAMEWORK	
	OBJECTIVES	**STRATEGIES**
✓ **All spheres of government ensure an integrated approach to land use and land development that is guided by the spatial planning and land use management systems as embodied in this Act;**	✓ Facilitate urban development	✓ Support property developers by identifying the locations potentially suited to densification and in-fill development ✓ Facilitate urban development and direct the phasing of urban growth through deliberate and integrated use of planning, infrastructure provision, and the regulatory and fiscal authority of all spheres of government.
✓ **No government department may withhold their sector input or fail to comply with any other prescribed requirements· during the preparation or amendment of Spatial Development Frameworks;**	✓ Promote inclusive, shared economic growth and development	✓ To promote ocean economy within Ray Nkonyeni Municipal Area. ✓ Maintain and enhance the features of Ray Nkonyeni that attract investors, visitors and skilled labour ✓ Support investors through improved information, cross-sectorial planning and removal of red tape

✓ **The requirements of any law relating to land development and land use are met timeously;** ✓ **The preparation and amendment of spatial plans, policies, land use schemes as well as procedures for development applications, to include transparent processes of citizen participation and all parties to have the opportunity to provide inputs on matters affecting them; and** ✓ **Policies, legislation and procedures must be clearly set out and inform and empower citizens.**		✓ Introduce land use policies and mechanisms that will support the development of small business (both informal and formal) ✓ Encourage area specialisation and the development of a diverse, mutually supportive system of economic areas ✓ Encourage the use of available economic incentives ✓ Promote sub-regional economic planning

10.3. CONCEPTUAL FRAMEWORK

The conceptual framework brings together the development concept of movement, networks, nodes, hierarchies, and surfaces. It takes cognizance of the development perspective and preferred scenarios. With tourism being the backbone of the Ray Nkonyeni economy, there is a need to use the municipality`s natural resources base to foster a path of economic development with benefits to its regional population and beyond. The proposed spatial vision envisages bridging the spatial divide between urban and rural spaces in order to promote social equity and enhance spatial efficiency, environmental sustainability and economic growth for all.

The vision plays a significant role in informing the most appropriate spatial structure of the municipality which will then inform development strategies and best initiatives for the Ray Nkonyeni Municipality.

10.3.1. FOCUSING DEVELOPMENT IN STRATEGIC NODAL AREAS

The assembling and location of services and facilities, in a manner that promotes accessibility and efficiency in service delivery, is required. This is critical for the performance of the municipal area as a whole and land use integration. As such, the clustering of various activities at appropriate and accessible nodal locations provides the Ray Nkonyeni with a network/system of opportunity centres. Some of these nodes have benefited from significant public and private sector investment in services and infrastructure, which needs to be managed and maintained. Others are located in previously disadvantaged areas, which have suffered from institutionalised neglect.

Although the nodes have contrasting characters, profiles and management issues, they accumulatively accommodate the majority of economic activities, employment prospects, an existing/growing residential stock, and access to community facilities. As such, the strength and feasibility of the nodal points is directly linked to the functioning and health of their catchment areas. The concentration of activities in and around these areas will stimulate further development of higher order activities.

10.3.2. DEVELOPMENT CORRIDORS AS INVESTMENT ROUTES

Corridor development is associated with a system of transport facilities on key routes that work together as an integrated system to facilitate ease of movement. A system of regional and local transport routes, which link a number of areas, should be viewed as the logical focus areas of an ordered strategy for rural development. These routes should be seen as activity and investment lines. The structure they give to the area is articulated in the form of movement patterns and systematic distribution of land uses in space. However, not all regional routes are the same in terms of the intensity of use and ability to attract investment, services, economic activities and settlement. Generally, larger routes linking generators of movement and investment have a greater generative capacity than smaller routes.

It thus follows that regional facilities and services should gravitate towards these areas. Smaller facilities requiring smaller thresholds should be located along smaller routes. Viewed in this way, the issue of regional and rural spatial organization becomes one of creating a systemic framework of interlocking activity routes over time. This has an impact of:

- ✓ increasing equitable access to all level of services;
- ✓ promoting investment; and
- ✓ reducing spatial marginalization
- ✓ integrate communities with service provision
- ✓ fulfilling a range of economic and social needs, and
- ✓ promoting smart development

Location of facilities along major routes recognizes the importance of choice to the rural communities with respect to services such as education, health and welfare facilities. Upgrade and road maintenance projects on corridors that leads to development opportunity areas such as rural service centres, high potential agricultural land and tourism nodes should be prioritized as this will encourage investment, improve accessibility and enhance mobility. This principle supports the phased approach to development, targeting areas of greatest potential first. Development corridors are effective in linking infrastructure and economic development as towns and structures connect to each other in a functionally effective manner.

10.3.3. SURFACES

Surfaces are areas that are filling the gaps between the nodes and networks are utilised for five main groups of activities. These activities have been assessed in detail but it is worth highlighting some key aspects applicable to the Ray Nkonyeni Municipality.

10.3.3.1. DEVELOPING SUSTAINABLE HUMAN SETTLEMENTS

A detailed consideration of the settlement pattern reveals a high level of disintegration and fragmentation. Higher density settlements should be located along the main transportation routes and held together by a web of local access roads and public facilities. At a regional level, they should be knit together by a system of regional access routes. However, settlements are also not static. They respond to change and are continuously in the process of transformation. The key challenge is to turn them from being creations and remnants of the apartheid regime into sustainable human settlements. This has serious implications for detailed planning and development of these settlements:

- ✓ Urban coastal areas promote integrated mixed use residential development, they should earmark all the strategically mark land parcels that can be used as opportunity. They should package land parcels for variety of housing projects i.e. BNG, low income housing, middle income housing and social housing.
- ✓ A convenient settlement improves the level of choice, encourages creativity and investment while a less convenient settlement imposes a lifestyle on people and results in unnecessary expenses.
- ✓ Settlements should be equitable in the sense that they should provide a reasonable access to opportunities and facilities to all. It is neither possible nor desirable for settlements to be homogenous hence an emphasis on choice.
- ✓ Centrally located settlement should provide improved access to higher order public facilities, intensive agriculture and other urban services.

They should generate a wide range of opportunities. Rural sparsely populated settlements should be considered as opportunity areas for agricultural development such as crop production and livestock farming. Centrally located settlement should provide improved access to higher order public facilities, intensive agriculture and other urban services.

10.3.3.2. RURAL-URBAN INTERFACE

Development within the Ray Nkonyeni raises an issue of the traditional dichotomy between urban and rural, town and countryside. The structure of the local economy shadows the discrepancy between urban and rural. These realities underscore the necessity of putting together a spatial strategy within the broader development context. It should thus focus on managing the form and texture of development, in a manner that contributes to the following performance criteria:

- ✓ Developing a comprehensive spatial system that promotes integration of the previously disparate areas and eliminates the gap between where people live and where they work.
- ✓ Improving the overall quality of the urban environment by better integrating environmental concerns within development planning and urban management practices.
- ✓ Creating the base for efficiency in the delivery of services (water, electricity, sanitation, etc.), movement, investment and decision-making.
- ✓ Promoting integrated and coordinated development with all stakeholders working towards a common development vision and agenda.
- ✓ Creating a more efficient and productive sub-region through the development adoption of policies that seeks to build of the competitive advantages while also unlocking new opportunities.

10.3.3.3. GREEN CORRIDORS AND LUNGS

Ray Nkonyeni Municipality has rivers, wetlands, agricultural farms and nature reserves that need to be protected and preserved. Land development within the municipality will be undertaken in an economically, socially and environmentally sustainable manner, and with the following being acknowledged as key interventions for spatial transformation:

- ✓ protection and enhancement of the environmentally sensitive areas;
- ✓ protection and optimal utilization of good agricultural land;
- ✓ creation of an integrated open space system in an urban context; and

- ✓ Enhancement of the aesthetic quality of the environment.

Ezemvelo KZN Wildlife has made substantial progress in mapping the environmentally sensitive areas. However, this information needs to be refined and complemented by localised investigations and strategic assessments. Environmentally sensitive areas provide opportunities for eco-tourism, agriculture and sports and recreation. Similarly, ecological zones such as wetlands, areas where there are endemic species, scenic areas, etc., provides opportunities for environmental conservation and tourism development, and should not be subjected to development pressure.

10.3.3.4. PROTECTION OF HIGH VALUE AGRICULTURAL LAND

A substantial amount of land in Hibiscus is generally classified as having high and good potential for agriculture. It is important to note high potential agricultural land has become a scarce and a deteriorating resource. Its protection is high on the agenda for the Department of Agriculture. Sub-division and change of land use on agricultural land is governed in terms of the Sub-division of Agricultural Land Act (SALA), Act No. 70 of 1970, and is administered nationally. However, there is no coherent provincial policy that guides this process. As such, it is critically important for Hibiscus Municipality to develop its own guidelines (as part of the SDF) for managing development on agricultural land.

10.3.3.5. Integration of Built-Form and Open Spaces

The intention with the built environment should be the creation of large continuous precincts of built form, rather than it is occurring in spatially discreet pockets or cells. This is necessary to obtain economies of agglomeration. At places, the continuity of the fabric should be systematically broken so as to ensure equitable access to green space and other opportunities. The benefits of mixed development:

- ✓ Visual stimulation and delight of different buildings within close proximity
- ✓ A greater feeling of safety, with 'eyes on streets'
- ✓ Greater energy efficiency and more efficient use of space and buildings
- ✓ More consumer choice of lifestyle, location and building type
- ✓ Urban vitality and street life
- ✓ Increased viability of urban facilities and support for small business (such as corner shops).
- ✓ More convenient access to facilities
- ✓ Travel-to-work congestion is minimized
- ✓ Greater opportunities for social interaction
- ✓ Socially diverse communities

A more vibrant and sustainable spatial structure and form results from blurring the distinction between uses and designing places that make walking to the local Centre, and bus stop or taxi rank, as convenient and comfortable as possible.

10.3.3.6. INTEGRATED COMPACT DEVELOPMENT

More compact settlements areas can be achieved with the maintenance of a settlement edge in order to discourage development sprawling into prime agricultural land and other natural resource areas. The settlement edge can be used to encourage more efficient use of underutilised land existing in a settlement, through development of vacant land or the re-use of degraded land areas. It can also be used to manage the investment and characteristics of infrastructure levels according to the needs of communities and economic activities located within settlement edges or outside settlement edges. This requires detailed planning at a settlement level and could best be sustained through the coding or integration of the existing community rules into a land use management system. Certainly, the level of compaction will take into account the nature and character of each settlement, as well as the prevailing spatial development trends and patterns.

10.3.3.7. ECONOMIC VALUE-ADDED AREAS

The Municipality is characterised by key economic centres and areas where all the varieties of economic sectors (Agriculture, Tourism, Manufacturing, and Services) are prevalent and perceived to have good potential to be further expanded on. These areas should be promoted to be visibly linked to high accessibility areas with existing bulk infrastructure and relatively high population densities, which would both contribute to the economic expansion and benefit from interventions in these areas.

10.3.4. KEY SPATIAL STRATEGIC INTERVENTIONS

The strategies for Ray Nkonyeni are intended to provide short, medium and long term direction to various aspects of development including spatial planning, economic

development, infrastructure planning and environmental planning. The ultimate aim is to ensure a better quality of life of municipal residents through aspects dealing with spatial restructuring, accessibility and mobility, economic opportunities and spatial resilience.

10.3.4.1. PROMOTE SPATIAL INTEGRATION

The majority of the settlements within the municipality are not spatially integrated. There is dislocation of settlements which depicts a clear spatial distinction between urban and rural areas. Such dislocations pose major challenges in terms of basic service infrastructure provision. It is important that the municipality establishes a clear planning framework which include formulation of Local Area Plans for key land use system and more detailed precinct level investigations and plans for nodal developments and densification frameworks to promote spatial integration and development compaction. This will also include a strategic focus on locating people closer to areas opportunity to be identified by the nodes and corridor.

10.3.4.2. PROMOTE A STRONG AND VIABLE MOVEMENT STRUCTURE

The desired movement structure for the Ray Nkonyeni Municipality includes public investment in road connections to support public transport and pedestrian movement with the aim of enhancing linkages with activity areas. This movement structure will need to be supported by areas of economic growth and development which provides the municipal population with employment opportunities and contributes greatly to poverty alleviation.

10.3.4.3. SUPPORT PRIORITY INVESTMENT AREAS

The development of the Ray Nkonyeni Spatial Development Framework focuses on promoting and supporting areas which require public and private investments related to priority spending areas where need is considered a key determinant for socio-economic investment. Whilst this strategy is interrelated to the intent for nodal areas, this strategy refers specifically to needy areas which ultimately justify themselves for priority spending on infrastructure, housing, basic services and essential public services to support particular settlements. This also include ensuring the provision of adequate social amenities in appropriate locations and facilitating social integration.

10.3.4.4. SUPPORT SUSTAINABLE ENVIRONMENTAL CONSERVATION AND MANAGEMENT

This strategy aims at protecting the conservation areas of environmental significance such as indigenous vegetation, priority biodiversity areas, wetlands, rivers and their surroundings, etc. For this strategy to work there is a need for management and enforcement of environmental laws and negotiation processes to enhance the viability of environmental conservation and management in the Municipality. These together form part of contributing towards the minimisation of the related effects of climate change and achieving a sustainable environmental system.

10.3.4.5. MANAGEMENT AND FACILITATION OF SUSTAINABLE HUMAN SETTLEMENT THROUGH SPATIAL POLICY

This strategy will focus on the promotion and facilitation of sustainable human settlements through the utilisation of spatial policy such as the provincial inclusionary housing policy. Emphasise on housing development and associated infrastructural development will focus on nodal areas and will be directed by infill development. Within the current premise of human settlements, there is the need to rationalise housing typologies in accessible locations (i.e. in proximity to social amenities, jobs and transportation networks).

10.3.4.6. ERADICATION AND UPGRADING OF INFORMAL SETTLEMENTS

The strategy aims at upgrading informal settlements and transforming illegal structures into legal ones thus improving the Ray Nkonyeni housing statistics. This also focuses on the recognition of three fundamental conditions which include property rights, property values and physical attributes of the underlying assets and their impact on each other. Beyond the legal dimensions of upgrading the informal settlements, the strategy also aims at promoting improvement of services such as water, electricity, sanitation, road infrastructure, etc.

10.3.4.7. PROMOTING PUBLIC AND PRIVATE SECTOR INVESTMENTS IN RURAL NODAL AREAS FOR INFRASTRUCTURE DEVELOPMENT

This strategy will focus on promoting public sector investment through the prioritisation of provision of basic infrastructure such as water, sanitation and electricity. This will be done so as to encourage private sector investment into rural nodal areas thus also creating incentives to support such areas.

10.3.4.8. INCLUSIONARY HOUSING DEVELOPMENT

A comprehensive housing strategy should be followed in the development of sustainable human settlements. Particular focus should be paid on integrated mixed residential development (i.e. low-income housing, gap-housing developments and high-income housing) and slums clearance within urban areas while the focus on rural areas should be the eradication of inadequate housing. Rural settlements should be prioritised for the development of human settlements through the rural housing subsidy scheme.

10.3.4.9. MAXIMISING AND COORDINATING THE TOURISM AND RECREATION POTENTIAL

Since the municipality is known for its tourism assets, there is scope for better utilisation of opportunities. This will have to take place bearing in mind that such development is not detrimental to the natural environment. Tourism activities should be in accordance with the image of the tourism features of the municipality, and various initiatives are to be coordinated.

10.3.4.10. PROMOTING SMART CITY DEVELOPMENT

During the Change Management Workshop and Departmental Strategic Planning Session Workshops held in February 2018. The Municipal Manager reiterated that the Ray Nkonyeni political leadership had agreed that the Municipality needs to become a Smart City in the foreseeable future. The Smart City concept encompasses a variety of new and innovative technologically driven solutions to global mega trends affecting the way a city is governed and planned for and include, but are not limited to:

- ✓ Enhancing of broadband and wireless technology.
- ✓ New ways of conducting business.
- ✓ Promoting an Integrated transportation systems
- ✓ Service delivery quality control
- ✓ Implementation of alternative energy technology.
- ✓ Electronic and interactive Town Planning and GIS Systems (applications)

A “Smart City” is made up of the following fundemental elements illustrated in the figure below: -

Figure 25: Elements of Smart City

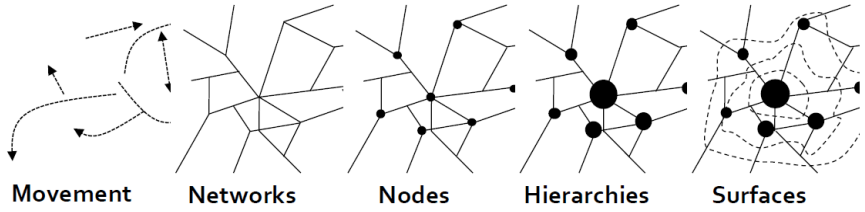
The figure above illustrates that, the implementation of the Smart City can most definitely and significantly improve the quality of people’s lives, if implemented and maintained

correctly. Therefore, such require a holistic and realistic implementation strategy. In addition, it should be noted that what works for another Municipality in terms of becoming a smart city, might not work for the Ray Nkonyeni Municipality. Therefore, implementation of a smart city also requires correct and good institutionalisation, public acceptability, funding and political support to drive it.

11. SPATIAL STRUCTURING ELEMENTS

11.1. SPATIAL STRUCTURING

Figure 26: Spatial Restructuring Models



Source: Mogale City IDP, n.d.

The spatial framework is developed though an interrelated set of nodes, networks and surfaces. The essence of development in this system is the movement of people, goods and services that produces the basic impetus for developing functional relationships between otherwise independent and unrelated elements. The movement of people, goods, and services are channelled along specific routes that describe a network of interaction. Where networks intersect the opportunity for people, goods and services develop to interact and this gives rise to activity nodes. The intensity of interaction gives rise to the development of a hierarchy of nodes of different sizes depending on the level of interaction taking place in a node. This one-dimensional system of networks and nodes are tied together through surfaces that fill the areas between the nodes and networks.

The first structuring element is the development and reinforcement of a system of varied activity nodes. This will enable greater access to city-wide opportunities, as well as equitable access to a system of local opportunities. The idea is to ensure that all people within the area live within easy walking distance of a public transport hub which will link to the city's public transport systems. These nodes, depending on their position in the hierarchy, will form points of access to a range of local and in some cases regional opportunities. Through the focus of development at these points the 'emerging core' will begin to reflect the opportunities that are present in the more developed areas of the Ray Nkonyeni.

11.1.1. SYSTEM OF ACTIVITY NODES

A development node refers to already established areas or potential ones that connects places of residence to areas of economic activities/opportunities. A development node may be a place of high or low-density intensity of development chosen for private or public investment to provide goods and services to the local communities based on their threshold of demand. A development node may be large or small depending on the area it serves. However, a properly functioning development node ought to have amenities like shopping, work opportunities, social and cultural opportunities and public transport facilities in a high quality and safe public environment. It includes cities, towns and other areas that exhibit or have potential for the developing the above-mentioned characteristics.

An activity node offers the opportunity to locate a range of activities, from small to large enterprises, often associated with mixed-use development. They are generally located along or at the cross-section of development corridors. Activity nodes have the potential to be an important sub-regional structuring device. They serve as points in the spatial structure where potentially access to a range of opportunities is greatest, where networks of association create diversity and where people are able to satisfy the broadest range of their day to day needs. Being points of maximum economic, social and infrastructure investment, as well as representing established patterns of settlement and accessibility, these nodes must be

regarded as primary devices on which to anchor the structure of the sub-regional spatial system.

Beyond this a set of local service nodes oriented around neighbourhood needs should be defined at a local level. It is suggested that well located school precincts form the basis for the development of these community-based activity nodes. To reinforce these activity nodes, a set of tools or supportive strategies at the local level are needed to realise these areas as safe, economically vibrant and accessible places. The nodes that are identified include the following:

11.1.1.1. DISTRICT DEVELOPMENT NODE

Port Shepstone town has been identified as a District Node as it is the main urban centre within the Ray Nkonyeni and Ugu District Municipality area of jurisdiction. The town is strategically located at the central parts of the District and it plays an important role as a regional centre for the District. It functions as a district centre and it qualifies to have its local justice system through a Magistrate Court. It is the primary area for investment promotion and centre of supply of services in the District. Port Shepstone is the main commercial centre and the major location of employment. District development nodes play a major role in the regional economy, and makes a substantial contribution to the provincial economy. They serve as major clusters of economic activities and provincial population. They have significantly developed and diversified economies. They serve as both economic hubs and administrative centres, but also includes performs some service centre functions. It forms part of the provincial spatial systems and is identified in the PSDP as one of the economic hubs. This node has administrative, social, and economic potential and there is provision of concentration of different activities of services. As a regional node, the following activities should be strengthened in this node: -

- ✓ Location of district and sub-district offices of various government departments and serve delivery agencies.
- ✓ Location of facilities and services for an effective administration.
- ✓ Industrial development, focusing mainly on the processing of raw materials produced within the sub-region.
- ✓ Location of public facilities serving the whole sub-region and beyond. These may include district hospital, sports facilities and transportation facilities.
- ✓ Location of regional commercial centres to promote the economic growth of the municipality.

Port Shepstone has been identified to be part of the Neighborhood Development Programme that will have economic benefits not only for Port Shepstone but surrounding areas.

11.1.1.2. MUNICIPAL DEVELOPMENT NODE

There are six (6) Municipal Development Nodes identified which provide medium order goods and services to surrounding settlements. These nodes are namely: -

- ✓ Shelly Beach;
- ✓ Margate;
- ✓ Hibberdene;
- ✓ Port Edward;
- ✓ Marburg; and
- ✓ Ezingolweni.

Municipal Development Nodes would be physically linked to each other and to urban centres outside their regions (districts) by frequent and reliable transportation and all-weather roads. They offer diversified commercial, financial, professional and administrative services. They accommodate sub-regional offices of national government departments and branch offices of provincial government department. They provide facilities for large scale and diversified markets, function as a communications node for a broad rural hinterland, and provide sites for agri-business and large-scale agricultural processing. They provide space of the location of small-scale consumer goods industries, repair workshops, and light durable goods. They offer higher educational opportunities and more specialized vocational training; and provide diversified and multi-purpose hospitals and health clinics. Municipal offices would mostly be located in these development nodes. These nodes currently function as the sub-regional urban centres for the Ray Nkonyeni that they serve. Similar to the primary node, these areas are well located within the main transportation routes that connect these nodes with various

settlements within Ray Nkonyeni area of jurisdiction. As a sub-regional node, the following activities should be strengthened in these secondary nodes:

- ✓ Development of commercial activities serving the whole local municipal areas and the surrounding areas (sub-region).
- ✓ Light Industrial development, focusing mainly on the processing of raw materials produced within the sub-region and the neighbouring areas agri-processing centre.
- ✓ Development of sub-regional shopping centres to serve the neighbouring communities.
- ✓ Location of public facilities serving the neighbouring communities. These may include sports and transportation facilities.
- ✓ Location of facilities and services for an effective administration and local governance of the municipalities.

11.1.1.3. COMMUNITY DEVELOPMENT NODE

While the District and Municipal Development Nodes serves as a regional and sub-regional centre, at least fourteen (14) other areas present an opportunity for the development of the Community Development Nodes with much less threshold/ sphere of influence, namely:

- ✓ Umzumbe;
- ✓ Glenmore Beach;
- ✓ Leisure Bay;
- ✓ Oslo Beach;
- ✓ Umtentweni;
- ✓ Ramsgate;
- ✓ Uvongo;
- ✓ Southport;
- ✓ Sea Park;
- ✓ Palm Beach;
- ✓ Munster;
- ✓ Gamalakhe;
- ✓ Southbroom; and
- ✓ Munster.

Community Development Nodes are small towns that provide an area-wide exchange point household and common consumer products, and farm inputs. They serve as nodes of transportation and distribution linked to regional centres within the province. They provide higher-level administrative services that cannot be found in community development nodes and offer vocational and secondary education, health and childcare services, and rural commercial services. Three main factors have influenced the selection of these areas, that is:

- ✓ Location in relation to major access routes. Secondary nodes are located either along a primary or secondary corridor, or at the intersection of the primary and secondary corridors.
- ✓ Location in relation to large rural or urban settlements, which provides a threshold for services, rendered from these areas.
- ✓ Development potential based on the accessibility and the role and function of the town.

11.1.1.4. SETTLEMENT DEVELOPMENT NODE

Settlement Development Node serves specific geographical area and social network. Its service area would be limited to the surrounding cluster of settlements within a specific neighbourhood and would include low order public, shopping and small business enterprise facilities. It serves as a link between the local communities and the major towns as such they should locate in accessible areas along or at the intersection of public transport routes. These seven (7) nodes have been identified as follows:

- ✓ KwaNzimakwe;
- ✓ Gcilima;
- ✓ Murchison;
- ✓ Ndimeni (Vukuzithathe);

- ✓ Moguntia;
- ✓ Nkumbini; and
- ✓ Mahlabathini.

11.1.1.5. RURAL INVESTMENT NODES

KwaMadlala has been identified as the Rural Investment Node. It is strategically located to serve rural settlements. Rural Investment node is focussed on improving the local economic growth of the rural centre with basic socio-economic elements. This node will serve as major rural centre and serve as location points for community facilities serving the local communities. This is a rural area with a lot of potential for local economic centres and manufacturing activities. The most basic facilities for this type of node include Secondary/ Primary Schools, Crèches, Mobile Police Station, Traditional Court, Satellite pension pay points, Mobile Clinic, Community hall and Sports Fields.

11.1.1.6. RURAL SERVICE NODES

In addition to the Rural Investment Nodes, the vision for the future spatial development of Ray Nkonyeni makes provision for the development of community centres within a cluster of settlements. These small centres will serve as location points for community facilities serving the local community such as Primary and secondary schools, Clinics including mobile clinics, Pension pay points and Community halls and other community facilities. There are no foci that operate as Rural Service Centers at this stage, but some activity could be upgraded to perform this role. The location of these nodes is usually the most accessible location within an acceptable walking distance of a community. These were identified as: -

- ✓ Mtateni (Vukuzithathe);
- ✓ Nqabeni;
- ✓ Thonjeni;
- ✓ Paddock;
- ✓ KwaMavundla (Gamalakhe);
- ✓ KwaNdwalane; and
- ✓ Lushaba.

11.1.1.7. RECREATIONAL NODE

In support of tourism development within the municipality and promoting it to be highly celebrated through efficient and sustainable infrastructural development. It is recommended that the Gamalakhe node, particularly the area surrounding the uGu Sports and Leisure Centre at the close vicinity of the intersection of road P200 and St Michaels road be promoted as a recreational node. This node is envisaged to provide multifunctional recreational and network of public open spaces that could provide in all the needs of the local community. This node is currently vacant however this area has the potential location of mixed development such as promotion of network of public open spaces supported by residential, commercial, offices and conference facilities.

11.1.1.8. TOURISM NODE

Oribi Flats are situated to the north of the Oribi Gorge and represents the centre point of an agri-tourism, eco-tourism and adventure areas. Any development within this area that may have adverse effects on the tourism industry needs to be discouraged. The area is situated centrally to the north-eastern parts of the Municipality and represents the access point from the southern parts to the Northern tourism area. This area is envisioned to provide limited social amenities such as a postal collection point/post boxes but more specifically for the marketing of, and direction to tourism attractions in the Tourism Area. As such no large-scale development would be encouraged here.

11.1.1.9. OTHER: TOURISM INTENSITY NODES

There are five nodes which have a tourism character over and above the role and function that has been listed above. These are: -

- ✓ Port Shepstone;
- ✓ Margate;
- ✓ Ramsgate;
- ✓ Port Edward; and
- ✓ Shelly Beach.

Although, the coastal strip is generally a tourism hive for the municipality, but the main concentration of tourism activities is centred around these nodes.

Table 24: Nodal Classification

NODAL CLASSIFICATION				
CLASSIFICATION	**ECONOMIC DEVELOPMENT**	**SERVICE DELIVERY CENTRE**	**ADMINISTRATIVE CENTRE**	**TOWN OR SETTLEMENT**
District Development Node	Economic centre that serves the entire district.	Regional Commercial Activities Multi-skilling / training centre Regional Library Secondary & Primary schools/ Crèches Regional Hospital/Clinic Police Station/ Permanent emergency services facility Permanent welfare office/Pension pay-point Children's home/Aged/Infirm care centre Magistrates Court Multi-Purpose Community Centre/Customer Service Centre Civic Centre Sports / recreation complex (with swimming pool)	Seat of the district municipality. Location of provincial and national government district offices.	Port Shepstone
Municipal Development Node	Economic centre that serves the entire municipal area	Sub-regional Commercial Centre Secondary & Primary schools/ Crèches Local Hospital/ Clinic Police Station Library Welfare office/Pension pay-point Multi-Purpose Community Centre/Satellite Customer Service Centre Municipal hall Sport Complex	Seat for the local municipality offices. Location of decentralised government offices	Marburg, Ezingolweni, Port Edward, Margate, Shelly Beach and Hibberdene
Community Development Node	Location of economic activities that serve the surrounding communities	Secondary/ Primary schools/Crèches Satellite Police Station Satellite Pension Paypoint Satellite Customer Service Centre Community hall;	Ward Councillors Satellite Offices	Umzumbe, Glenmore Beach, Leisure Bay, Oslo Beach, Umtentweni, Ramsgate, Uvongo, Southport, Sea Park, Palm Beach, Munster, Gamalakhe, Southbroom, Sunwhich Port and Munster.

		Sports grounds; Local commercial and industrial centre		
Settlement Development Node	Service area limited to the surrounding cluster of settlements, include low order public, shopping and small business enterprise facilities and linked to transportation routes.	Secondary/primary Schools /Crèches Mobile Police Station Traditional Court Satellite pension pay points Mobile Clinic Community hall Sports Field Low-order shopping developments		KwaNzimakwe; Gcilima; Murchison; Ndimeni (Vukuzithathe); Moguntia; Nkumbini; and Mahlabathini.
Rural Investment Nodes	Local economic centres and manufacturing activities	Secondary/primary Schools /Crèches Mobile Police Station Traditional Court Satellite pension pay points Mobile Clinic Community hall Sports Field		KwaMadlala
Rural Service Nodes	Local convenient shops and manufacturing activities	Small centres will serve as location points for community facilities		Mtateni (Vukuzithathe), Nqabeni, Thonjeni, Paddock, KwaMavundla (Gamalakhe), KwaNdwalane and Lushaba.
Recreational Node	Provides a multifunctional recreational and public open space that could provide in all the needs of the local community.	Sports Complex, Parks, Open Space Network and Conservation		Ugu Sports Complex
Tourism Node	Tourism accommodation, recreational activities, art and craft outlets and local service shops	Basic mobile services as and when required		Oribi Flats

Source: Towards a Framework for the Classification of Development Nodes in KwaZulu-Natal (2016)

11.2. HIERARCHY OF DEVELOPMENT CORRIDORS

The spatial development concept starts by understanding the movement networks of people, goods, and services which are channelled along specific routes that describes a network of interaction. The level of activity that these networks provides results in "Development Corridors" which are broad areas of high-intensity urban development centred on activity and development routes. They are characterised by a dynamic, mutually supporting relationship between land use and the supporting movement system. Development corridors are generally supported by a hierarchy of transport services that function as an integrated system to facilitate ease of movement for private and public transport users.

Corridor development is focused predominantly on activity/ development routes serviced by mass rapid public transport services (i.e. rail or bus rapid transport (BRT)); however, the system of routes may serve distinct functions, with some routes combining route functionality in terms of accessibility and mobility. Based on the above, the Ray Nkonyeni Municipality conceptual framework reflects: -

- ✓ Higher order activity routes, parallel to the National Road (N2), connecting major activity nodes. These routes have high levels of continuity,
- ✓ Local activity routes, which connect local activity nodes to each other and to major activity nodes and feed into the higher order activity routes.
- ✓ New links supporting physical integration of the areas

Secondly, to support the role of these activity routes as integrating elements, a set of tools or supportive strategies are identified and are reflected below.

- ✓ Key network linkages are developed to reinforce the accessibility grid and the centrality of the activity nodes
- ✓ An integrated network of Non-Motorised Transport (NMT) routes is developed to support access to local and broader opportunities.

of support) and economic potential, with Development corridors in Ray Nkonyeni Municipality occur at different scales depending on function and categorization of the transportation route that forms the basis of the corridor. They carry the flows of people and trade between two points (origin and destination) and encourages nodal development at strategic point. Corridor development as a spatial structuring element, and a tool for economic growth, seeks to create functional linkages between areas of higher thresholds (levels those that have insufficient thresholds. This will enable areas that are poorly serviced to be linked to areas of opportunity and benefit with higher thresholds. As a result, the system of development corridors in Ray Nkonyeni are developed on the following fundamental aspects: -

- ✓ Levels of Mobility;
- ✓ Levels of Access;
- ✓ Land use intensity and role in the spatial economy; and
- ✓ Functionality of the corridor.

These aspects summarise the significance of corridors within a municipal area. Upgrade and road maintenance projects on corridors that leads to development opportunity areas such as rural service centres, high potential agricultural land and tourism nodes should be prioritized as this will encourage investment, improve accessibility and enhance mobility. This principle supports the phased approach to development, targeting areas of greatest potential first. Development corridors are effective in linking infrastructure and economic development as towns and structures connect to each other in a functionally effective manner.

11.2.1. NATIONAL CORRIDOR: N2 AND R61

The N2 is the primary north-south linkage and it links Port Shepstone in the South with Durban in the North. The N2 also links Port Shepstone with Kokstad as an east-west linkage. The section of the N2 which runs in the north-south direction up to Port Shepstone is of freeway standard, and comprises of 4 lanes, 2 lanes in each direction for most parts. The N2 is regarded as a generator for growth, particularly between Port Shepstone and Harding. This is the main high-level limited access mobility road and is component part of the Provincial "Corridor" system.

Figure 27: National Road N2-R61

Interchanges link this road to the Regional major arterials that give access to both formal urban settlements and most of the informal settlement clusters that occur mostly within Traditional Authority areas. The National Corridor identified provides public transport linkages and accessibility to the communities at the interceptor points with other movement channels. A range of development opportunities are envisaged along these channels. The N2 is identified in the NSDP as a national corridor and is recognised as such (strategic transport route) in the PSDP. Therefore, the N2 is a high-speed limited access road providing access and inter-nodal connections at a national and provincial level. The N2, in both a north/ south and east/ west direction, providing mobility routes. The north/ south routes provide the high friction lattices, namely the P395, P 3-1.

Inland arterials are identified as the P200, P482 and the P198. A set of east/ west roads connect the coast to the interior. The prominence of this line is limited to freight and is not utilised for passengers. The N2 running along the coast linking the coastal towns is a major structuring element within the Municipality. This link provides the primary north/ south movement lattice through the study area. Secondary north/ south link can be identified as the P395 which runs along the coast from the north until Ramsgate, as well as a less prominent inland route running from north to south, which is made up of the P198, P464, P482 and the P200. Therefore, there is no major structuring north/ south linkages exist inland of the N2. In an east/ west direction the N2 between Port Shepstone and Harding is the primary link with a number of secondary supporting routes. It is a tourist route to the major tourist destinations in Eastern Cape. Development along this route should occur as follows:

- ✓ The N2 links the Ray Nkonyeni with Scottsburg, Durban airport and the Metropolitan area of eThekwini to the North. Moreover, the rail and air transport (Margate Airport) also serve as the primary corridors in the municipality as these play a major role in the promotion of tourism
- ✓ Facilitate the establishment of mixed land use activity nodes at the intersection of the N2 and the regional or provincial routes. Activities that may locate in these areas include logistics, warehousing, light industry and commercial facilities.
- ✓ In the short to medium term, high value agricultural land located along the corridor should be protected, but in the long term, strategically located areas abutting onto the mixed land use nodes should be opened for development as mixed land use precincts.
- ✓ Compliance with the policies and regulations introduced by the South African National Roads Agency (SANRAL).

R61 is the provincial routes that link Ray Nkonyeni with external significant nodes such as Kokstad, Port Edward and Mount Fletcher. Secondary to the N2, this route serve as a main link between the Eastern Cape Province and KwaZulu-Natal Province. These are identified in the Provincial Spatial Development Plan (PSDP) - Eastern Cape as some of the Strategic Transport Routes. Due to the current settlement patterns and population distribution, R61 has attracted a lot of settlement and establishment of business uses dependent on accessibility and population concentrations. The ongoing densification along this route is resulting in R61 fulfilling the role of a residential access road. High Public Transport usage (with a lack for such provisions in the present road design), higher pedestrian movements along and across the route, high animal concentrations and insufficient fencing along this route are all factors contributing to this route being extremely dangerous to both motorists/commuters and residents. Development along R61 Development Corridor should follow the following guidelines:

Figure 28: Provincial Road-R61

- ✓ R61 is a regional limited access and high speed public transport route; as such direct access onto this road should be subject to the provincial road transport regulations.

- ✓ Higher order land uses should be accommodated in the nodes, but lower order land uses could develop in a linear fashion subject to alternative access opportunities; and
- ✓ A 15m buffer should be observed from the boundary of the road reserve. This has implications for settlements that have encroached onto the buffer areas.

11.2.2. PRIMARY TOURISM CORRIDOR: R102 AND R602

Some of the main provincial roads within the study area include the R602, The R602 is termed the 'beach road' (better known as "Marine Drive) and it runs in the north-south direction along the coast, linking the various coastal towns. The provincial roads are predominantly in the east-west direction and provide high levels of accessibility linking into the minor arterials. This network of provincial roads functions as primary transport corridors. The regional road network can be classed into either surfaced (blacktop) or un-surfaced (gravel), which can be further classified into a north-south link or an east-west link. There are also District Roads. The district roads provide major internal linkage, linking schools, clinics etc. A problem that faces the municipality is the alignment of KZNDOT implementation projects with that of the municipality's implementation projects. The role of the R102 (Old Main Road) that runs from Hibberdene along the coastline as far as Port Shepstone as a Primary Tourism Corridor is to be maintained and strengthened.

Along this corridor there are various tourism attractions such as swimming beaches and commercial nodes. Secondary Tourism Corridors - The Secondary Tourism Corridor (inland) is to encourage the spread of tourist facilities to the inland component of the Municipality. This corridor has potential to unlock tourism and business potential of the area. The sustained development of tourism facilities is dependent on the capacities of supply services networks, and it is essential that the IDP's capital development programme is aligned to the tourism elements of the SDF. The basic services backlogs need to be addressed. Secondary corridors need to be improved in order to give access to inland areas. In order for the tourism sector to grow, the tourism corridors need to be maintained and strengthened. The implication of the substantial Ingonyama and state-owned land is that many inhabitants do not have independent tenure rights and this impact on participation in the economy.

11.2.3. SECONDARY CORRIDORS

The Municipality is characterised by poor corridor development linking urban and rural settlements. This may be due to the lack of economic activities located along these routes. However, the rural linkages which are connected to the urban linkages have potential in becoming Secondary Corridors. The secondary corridors are P69, P732, P482, P344, D686, D0165, P0860, P0262, P0354, P0284, P0057 and P0058. A corridor serving areas of high poverty levels with good economic development potential within one or two sectors. There are a number of very important inter-and intra-roads within Municipality which should be defined and linked to function and activities. Therefore, Port Shepstone – St Faiths – and Ixopo corridor was identified as a secondary corridor with agriculture and tourism playing a significant role.

This Secondary corridor needs to be improved in order to give access to inland areas. In order for the tourism sector to grow, the tourism corridors need to be maintained and strengthened. The implication of the substantial Ingonyama and state-owned land is that many inhabitants do not have independent tenure rights and this impact on participation on the economy. In order to improve accessibility to the inland areas and to create potential inland tourism routes, Main and District Roads have been highlighted for upgrading and regular maintenance as Secondary Corridors. The rural character of the area and proximity to the major economic opportunities in the Ray Nkonyeni, make the area attractive for residential and tourism development. Although it would be impossible to develop the total corridor, emphasis should be given to certain sections of the road. The type of activity should focus on tourism, arts and craft, recreational, hospitality and environmental related activities.

This road based public transportation spine can be considered the most valuable asset contributing to the development potential of the settlements close by, enabling the development of higher-density and mixed land uses. To ensure land use and transportation integration which need to be integrated with the surrounding land uses. Although specific areas have been identified for corridor development along the respective routes, some tourism activities could be established along the routes, subject to legislative and technical requirements. These principles also provide a guide to other planning initiatives. Secondary Corridors should be planned and developed to:

- ✓ Support and facilitate development and investment that contributes to the economic and social vitality of the Corridor and adjacent neighbourhoods.

- ✓ Promote and support development which enhances and respects the character of existing neighbourhoods where appropriate and creates vibrant, dynamic, and liveable urban places through high quality urban design.
- ✓ Develop compact, mixed use urban environments that support transit and active transportation.
- ✓ Promote and support an innovative sustainable built environment that uses resources efficiently and encourages a high quality of life.
- ✓ Identify areas of change as the locations for new development

The P69 and P732 plays a major role promoting tourism development as they are mainly connected to rural settlements. It is recommended that the municipality upgrade these roads to provide better access to tourism development, tourism marketing as well as private or community investment in rural accommodation in support of the tourism activities in Port Edward and KwaXolo Caves.

The Gamalakhe Township is slowly developing as a precinct area with the majority of activities ranging from mixed use development, residential, commercial and recreational activities defining the character of the township. It is important that such activities be supported by corridors which will increase or result in the role of the area positively contributing to the municipal economic growth. As a result, P482 linking Uvongo and Gamalakhe is envisaged to promote the character of the township as a Secondary Corridor. This corridor is also envisaged to promote recreational uses, as it passes through the Sport and Leisure Centre. P344/ D686 which links kwaMadlala and Sunwhich Port is envisaged to be a secondary corridor. Currently, no development is taking place along this route. However, potential lies in upgrading the road to increase investment opportunities to emerge to benefit the Madlala TC. Therefore, this corridor has potential to unlock basic service delivery through water provision, electricity and sanitation which will result in the investment in economic development into the area.

11.2.4. TERTIARY CORRIDORS

The following roads have been identified as the tertiary corridors:

- ✓ Road from Hibberdene to Msinsini,
- ✓ Road from St Michaels to Gamalakhe,
- ✓ a route that runs from Nkuswana-(D0920) via Thonjeni-Nkulu(D1085)-N2-Sunshine to Nqabeni,
- ✓ a route that runs from Moguntia to Maryland; and
- ✓ Road from Margate to Gamalakhe.

These corridors are mainly envisaged for movement purposes with direct access to properties permitted and high pedestrianized activity. The corridors services are envisaged to be of a lower order service to serve their sphere of influence.

11.2.5. TOURISM DEVELOPMENT CORRIDORS

The corridor aims at promoting and facilitating tourism development. The identified tourism development corridors include: -

- ✓ P69 linking Munster and KwaNzimakwe TC;
- ✓ P262;
- ✓ D251;
- ✓ P732 linking Southbroom and KwaXolo TC;
- ✓ P55 linking Murchison, Nyandezulu Waterfalls and Oribi Gorge; and
- ✓ D1095 linking Port Edward, Ezingolweni and passing through Red Dessert.

Another, Potential Tourism Corridor Route is located along the Port Edward to Ezingolweni east/ west link. The Route consists of a number of Cultural and Tourism Opportunities such as the Red Desert, the Umtamvuna Nature Reserve, the Space Centre, KwaXolo Caves. A cultural village is proposed in support of the tourism activities along this route. This will be subject to further economic studies to test its feasibility but essentially the intension is to draw tourists that will travel to the Mbubazi Nature Reserve through this area and secure much needed local economic development opportunities. This proposed Tourism Corridor Route presents a unique opportunity for the southern extremity of the Municipality, creating new cultural and tourism opportunities.

11.2.6. IZOTSHA CORRIDOR

This corridor is located on the west-southern part of Port Shepstone. It is intended to facilitate the expansion of the town through industrial, commercial and residential developments. This area is partially developed with few industrial, warehouses, agricultural and residential activities. There are key issues that needs to be addressed with this proposed corridor and are:

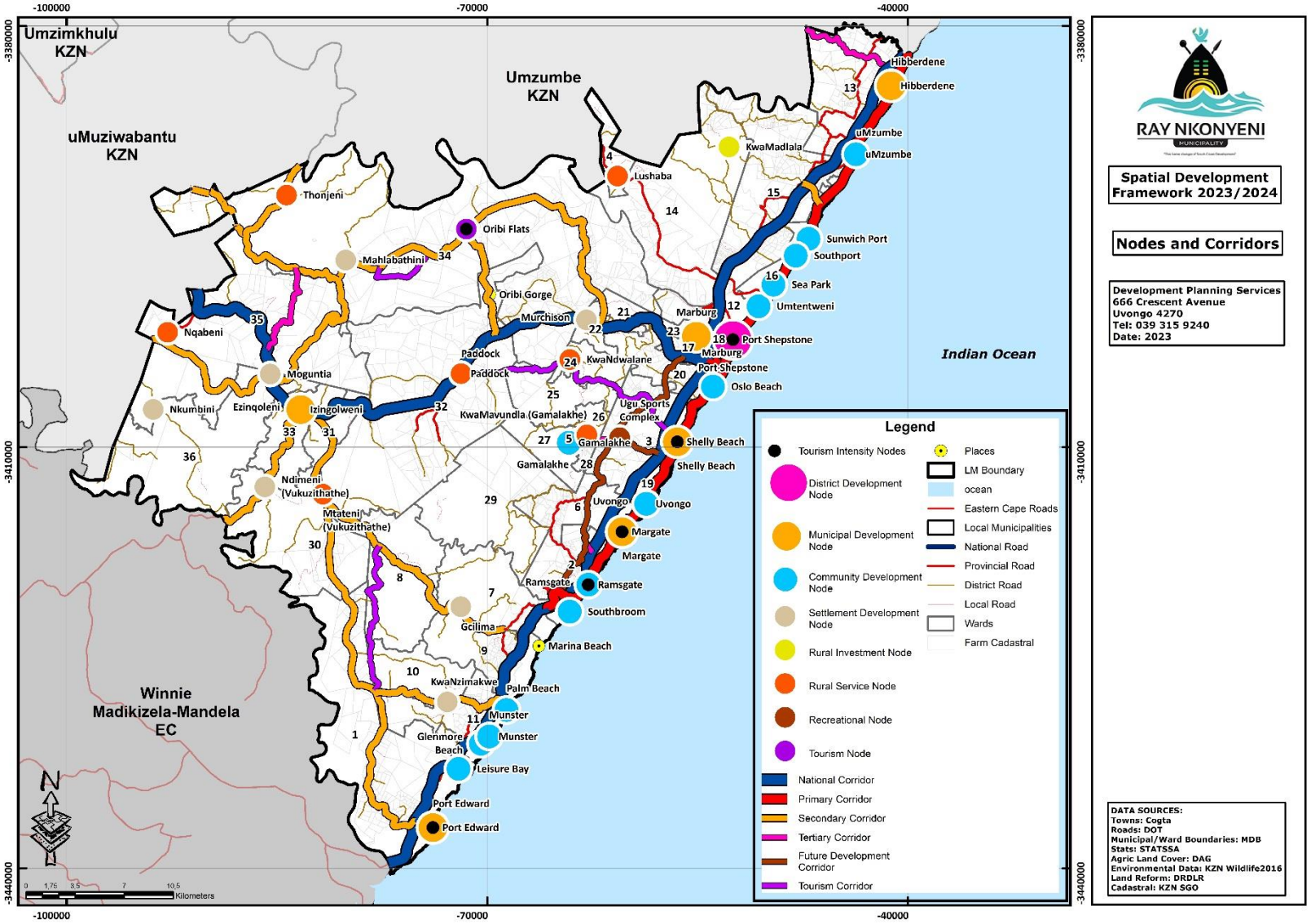
- ✓ Road widening – since this route is currently a very narrow road with sharp and steep bends which does not make it user friendly for heavy duty trucks;
- ✓ Creation of Service Lanes that runs parallel to land uses activities. This will ensure that this route does not function as both an activity corridor and a mobility route which can potentially create traffic accidents; and
- ✓ Resourcing it with streetscape infrastructure (including signage, pavements and streetlights).

11.2.7. FUTURE DEVELOPMENT CORRIDOR

A Future Development Corridor is proposed to facilitate the expansion of Port Shepstone and Margate towards the south-west of the municipal area. It adjoins Izotsha Corridor and it is positioned in close proximity to Gamalakhe Township. The proposal is to encourage mixed land use activities which includes commercial, offices and residential along this main road which will allow for the development of a new Community Urban Town Centre (at the intersection of the road that leads to Gamalakhe and Uvongo) over a long term.

CORRIDORS			
TYPE OF ROUTE	**FUNCTIONS**	**LAND USE INTENSITY**	**BUILDING LINES**
National Route (National Corridor) **(N2 and R61)**	Principal Arterial Expressway Mobility Route Prohibited Direct Access	Large Industrial Hubs Large Commercial Hubs	60 metres
Provincial Route (Primary Corridor) **(R102 and R620)**	Major Arterial Mobility Highway Limited Access		15 metres.
District Routes (Secondary Corridors) **(P69, P732, P482, P344, D686, D0165, P0860, P0262, P0354, P0284, P0057 and P0058)**	Minor Arterial Main Road Limited Access	Medium Industrial Hubs Medium Commercial Hubs Recreational Community Services Mixed Use Development Administration centres	15 metres
Local Collector Roads (Tertiary Corridor) **(Road from Hibberdene to Msinsini, Road from St Michaels to Gamalakhe, a route that runs from Nkuswana-(D0920) via Thonjeni-Nkulu(D1085)-N2-Sunshine to Nqabeni, a route that runs from Moguntia to Maryland and Road from Margate to Gamalakhe)**	Collector Road Access Permitted Off Road Edge or Lay byes	Urban Settlements/ rural settlements Convenient shops/ neighbourhood centres Open Space Networks Light industrial activities	7 metres
Tourism Corridors **(P69 linking Munster and KwaNzimakwe TC, P262, D251, P732 linking Southbroom and KwaXolo TC, P55 linking Murchison and Nyandezulu Waterfalls and Oribi Gorge, D1095 linking Port Edward and Ezingolweni and passing through Red Dessert)**	Aims at promoting and facilitating tourism development	Tourism and Cultural Activities	15 metres
Future Development Corridor **(A Future Development Corridor is proposed to facilitate connectivity of the Margate Airport towards Marburg. The corridor connects to Izotsha Corridor and it is positioned in close proximity to Gamalakhe Township)**	Aims to promote investment growth and encourage mixed use developments in the near future.	Medium Density Residential Developments Medium Density Commercial hubs Light Industrial Activity.	7 metres

Map 29: Nodes and Corridors



11.3. CONTINUUM OF SUSTAINABLE HUMAN SETTLEMENT CLUSTERS

The 1976 Vancouver Declaration defined human settlement as:

"The totality of the human community - whether city, town or village - with all the social, material, organizational, spiritual and cultural elements that sustain it. The fabric of human settlements consists of physical elements and services to which these elements provide the material support"

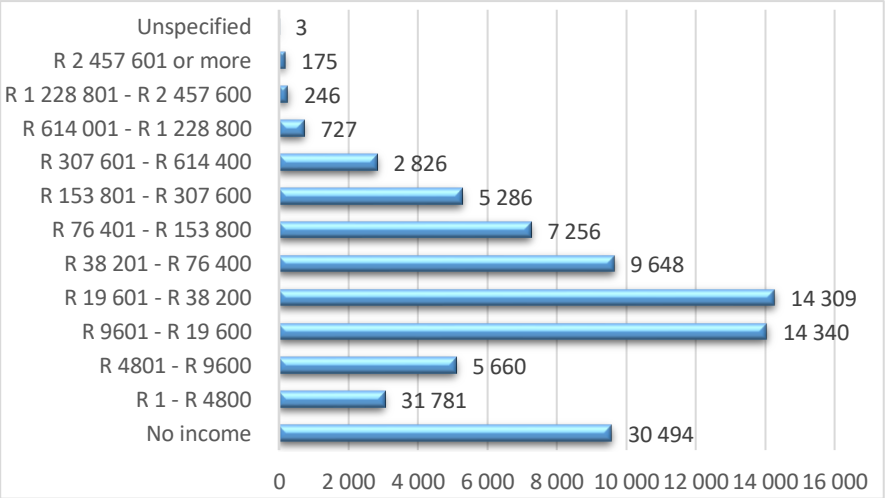
The concept of sustainable human settlements has been developed further into a strategic framework for overall socio-economic development. Human settlements are the spatial dimension as well as the physical expression of economic and social activity. The creation of sustainable human settlements is inevitably an objective for social development as it defines and determines the relationship between where people live, play and work on the one hand and how this occurs within the confines of the natural environment. It is one of the most visible and quantifiable indicators of the society's ability to meet one of its basic needs - shelter, and a pre-requisite for sustainable human development and economic growth.

11.3.1. HOUSING NEED AND SUPPLY

A primary consideration in evaluating the impact of regulatory frameworks on land and housing is to assess existing and future housing needs. This will enable projections to be made of the area of land required according to the existing regulatory framework. It will also indicate where changes to planning standards or regulations may be needed to help upgrade existing settlements and improve access to new legal housing.

11.3.1.1. HOUSING MARKET SEGMENTS

The income profile of the population residing in Ray Nkonyeni Municipality provides perspective into the extent of housing need in the municipality within each of the programmes available for delivery. The figure below indicates income groups of the population represented in numbers that can qualify for housing subsidies.



Approximately 96 584 of households in Ray Nkonyeni Municipality are eligible for low cost housing subsidies based on income criteria. This includes about 30 494 of households who do not have access to disposable income and are therefore regarded as destitute.

An addition, (say) 22 190 for social housing and Finance Linked Individual Subsidy Programme (FLISP). While Social Housing caters for those in need of rental accommodation, FLISP requires an individual beneficiary to access mortgage bond from a financial institution or pay the balance of the value of the house themselves. It targets first-time homebuyers earning R3 501 to R15 000 per month.

The implementation of current projects, such as rural housing, and informal settlement upgrade is based on households living on the land being development. With the implementation of the Integrated Residential Development Programme, Social Housing and

other Green field development the Housing Needs Register will have to become operational for the selection of applicants, and relocation from non- developable informal settlements and excess households.

However the actual need for housing opportunities between the income bands R0 - R15000 can be only be determined once the National Housing Need Register becomes fully functional within the Municipality and applicants registering their need. The Municipal Council has supported for the implementation of the Housing Needs Register, however this programme can only be implemented once institutional capacity is received from the Provincial Department of Human Settlement.

11.3.1.2. TYPOLOGY OF THE NEED

The settlement pattern of the Ray Nkonyeni Municipality reveals two main elements, namely a concentration of urban areas along the coastline and an interior with a dominant rural character. The table indicates the housing backlog/need, based on household income and current demand by housing type.

Clusters	Ward	Total No. of Households per Ward	Households earning less than R38 190p.a/ R3 183 p.m. (Qualifying for Low Cost Housing)		Households earning less than R153 802p.a/ R15 000 p.m. (Qualifying for FLISP)	Demand By Current Housing Type				
						Traditional Dwelling	Informal dwelling (shack; in backyard)	Informal dwelling (Shack; informal settlement)	House/flat room in back yard	TOTAL
Cluster 7	12	3004	1241		892	60	17	8	36	121
	13	2069	1376		486	130	25	67	23	245
	14	1629	1303		283	487	76	4	1	568
	15	1789	1527		215	421	55	135	11	622
	16	2928	1001		1000	8	5	18	190	221
Cluster 6	4	1746	1306		380	597	22	2	37	658
	17	2249	869		826	2	8	8	3	21
	18	2296	710		840	9	75	7	121	212
	20	5675	4534		943	296	625	1050	176	2147
Cluster 5	21	2170	1719		396	235	26	21	3	285
	22	2049	1365		532	245	14	17	3	279
	23	2220	1770		390	151	71	19	236	477
	24	2209	1612		505	251	13	15	5	284
Cluster 4	3	3930	2418		789	33	34	1111	65	1243
	5	1938	1532		342	463	22	3	2	490
	25	2020	1477		442	288	21	6	122	437
	26	2958	1716		836	60	28	17	19	124

Clusters	Ward	Total No. of Households per Ward	Households earning less than R38 190p.a/ R3 183 p.m. (Qualifying for Low Cost Housing)		Households earning less than R153 802p.a/ R15 000 p.m. (Qualifying for FLISP)	Demand By Current Housing Type				
						Traditional Dwelling	Informal dwelling (shack; in backyard)	Informal dwelling (Shack; informal settlement)	House/flat room in back yard	TOTAL
	27	3057	2463		508	132	41	95	93	361
	28	1739	1098		461	1	28	16	1	46
Cluster 3	1	3472	1927		869	67	10	9	31	117
	2	3657	1677		1011	47	5	17	58	127
	6	2919	972		1031	150	8	19	88	265
	10	2420	2017		352	579	10	7	9	605
	11	2116	1755		303	359	11	2	9	381
	19	2229	637		776	11	5	4	37	57
Cluster 2	7	1759	1354		359	487	3	1	15	506
	8	1563	1312		228	441	12	7	7	462
	9	2376	1728		554	420	7	1	11	439
	29	1990	1596		355	656	8	5	155	824
Cluster 1	30	2032	906		45	1018	0	102	6	1126
	31	1047	675		35	360	0	12	0	372
	32	2112	633		23	700	0	0	0	700
	33	1497	950		30	547	0	0	3	550
	34	2631	1521		23	1011	0	93	6	1110
	35	2033	831		34	1380	0	18	3	140
	36	2323	950		22	547	0	30	0	577
	Total	72175	46012		16904	7086	1285	2691	1567	12629

The table clearly reflects the need for low cost housing in Ray Nkonyeni Municipality as the majority of people qualify for this housing market. The dominant rural character of the interior of Ray Nkonyeni Municipality, combined with the dominance of rural settlements, suggests a concentration of housing need among the rural communities

The nine Traditional Authority areas, namely KwaXolo, KwaNzimakwe, KwaNdwalane, KwaMadlala, KwaMavundla, Kwalushaba, KwaNyuswa, KwaMthimude and KwaVukuzithathe which are characterised by low density and dispersed settlements with limited services and inadequate provision of public facilities. The Government's rural housing assistance programme has been designed to complement the realization of the objectives of the Integrated and Sustainable Human Settlements. It focuses on areas outside formalized townships where tenure options are not registered in the Deeds Office but rather protected in terms of land rights legislation. Interim Protection of Informal Land Rights Act, 1996 (Act No. 31 of 1996), as opposed to registered individual ownership in formal towns. Rural households enjoy protected informal tenure rights and/or rental or permission to

occupy. The rural housing assistance programme is needs or demand based and designed to provide housing and infrastructure assistance within the specific circumstances.

There is also a need to provide housing in the urban areas, taking into consideration the urban concentration along the coastline, which is perceived as an area that attracts employment, resulting in an influx of people. This results in urban slums, located around industrial areas and within walking distance to employment opportunities and the need for rental accommodation in urban areas. These are mainly represented by housing types such as informal dwelling (shack; in backyard), informal dwelling (shack; informal settlement) and house/flat room in back yard.

11.3.1.3. INFORMAL SETTLEMENTS

The Informal Settlement Eradication Strategy for KwaZulu-Natal (2011) identifies RNM as one of the 15 strategic priority areas for strategies and plans to address informal settlements. It identifies four informal settlements and suggests that approximately 4 483 households reside in these areas. The informal settlements are:

-Bhobhoyi Phase 2 with approx: 1100 households.

-Louisiana with approx.: 1000 households.

-Masinenge with approx.: 1542 households.

-Mkholombe with approx.: 1600 households.

The key driver for informal settlement establishment in the Municipality is primarily to access livelihood opportunities within the available urban areas. The location of the primary informal settlement areas such as Mkholombe close to Port Shepstone and Masinenge close to Margate and Uvongo attest to this. The predominant settlement pattern is one of very dense informal settlement in areas (65-100 du/ha) close to the towns with more sparse, although still dense rural settlements areas, just of the main coastal line and in the Ingonyama Trust Land areas.

11.3.1.4. GAP HOUSING

"Gap housing" is a term used to describe the shortfall, in the housing market between residential units supplied by the state (which cost R150 000 and less) and houses delivered by the private sector (which are not less than R250 000). The gap housing market comprises people who typically earn between R3 500 and R15 000 per month, which is too little to enable them to participate in the private property market, yet too much to qualify for state assistance. It is difficult to estimate precisely how large the demand for the gap-housing product is, as it fluctuates with interest rate changes and employment levels. It also depends on the number of families who voluntarily choose to make longer-term financial commitments. However, it is certain that this housing segment is huge and represents a significant demand within the RNM.

11.3.2. HOUSING SUPPLY (PROJECT PIPE LINE)

Since early 2000, the Municipalities (former HCM and ELM) have been implementing housing projects to address the housing need within their area of jurisdiction to improve the standard of living of the local communities. The programmes & projects being implemented fall within different categories and include Breaking New Ground (BNG) housing, rural housing, rectification and others.

The following reflects the current and future provision of housing opportunities for the citizens of Ray Nkonyeni Municipality.

HOUSING OPPORTUNITIES BEING PROVIDED	NUMBER (APPROXIMATLEY)
Number of housing units already provided acrross all housing programmes (completed in old and current projects)	12 124
Number of housing units in the process of being provided across all housing programmes which are at various stages of construction	2170
Number of housing opportunities (sites / units) being planned for the future across all housing programmes	9173
Number of rectifications completed	177

Title Deed Restoration Programme (title deeds to beneficiaries)	2071

PROGRAMMES	TOTAL NUMBER OF PROJECTS	STAGES
Rural Housing Programme	16 projects	2 at planning stage 14 at implementation stage (tranche 1 & 2)
Informal Settlement Upgrading	3 projects	1 at planning stage 2 at implementation
Greenfield Housing Programme	4 projects	1 at planning stage 3 at implementation
Financed linked individual Subsidy Programme (FLIPS/Gap market)	2 projects	2 at concept/ feasibility stage
Rectification Programme	1 project	1 at implementation stage
Social / Rental Housing	1 project	1 planning stage
Title Deed Restoraton Programme	5 project	comprising of 2546 sites
Integrated Residential Development Programme	8 land parcel	Identified land parcels for further development

11.3.3. STATUS OF THE VARIOUS PROGRAMMES AND PROJECTS (COMPLETED/ CURRENT / PLANNED)

11.3.3.1. INFORMAL SETTLEMENT UPGRADING PROGRAMME

The Municipality has been very progressive in the eradication of informal settlement. The Municipal strategy predominantly aims at providing new Greenfield Housing Developments in close proximity to the current informal settlements.

PROJECT	WARD	CLUSTER	NO OF UNITS	FINANCIAL VALUE (approx.)	CURRENT STATUS
Louisiana	15	7	564	R57 911 667.26	Completed- 697 sites were serviced, however due to slope only 564 units were built. Remaining two private land owned parcels are in the process of being transferred into the name of the Municipality. Also receiving of completion certificates to enable a process of opening of township register leading to the issuing of title deeds to approved beneficiaries.
Masinenge	3	4	882	R182 275 847.83	**High Density Development**. The services of the existing contractor were terminated, New contactor appointed for the provision of internal reticulation services. A contractor for the completion of incomplete top

					structures of the erstwhile contractor is in progress. Approximately 103 top structures have been completed
Mkholombe	20	6	1000	R3 326 590.00	Planning stage – Detailed studies are being carried out with the option of providing mixed income housing. **PDoHS has committed funding in the 2019/2020 financial year for planning processes.**
TOTAL			2446	R243 514 105.09	

The Louisiana slums clearance housing project of 564 units have been completed. The process of individual transfer to approved beneficiaries is still to commence with funding from Provincial Department of Human Settlements and the transfer of privately owned land to the Municipality. Some informal dwellers in the settlement could not be provided with housing opportunities due to geographical challenges within the development which will necessitate alternative housing provision. There is also a gradual influx of new informal dwellers in the area.

The Masinenge slum clearance project consists of 882 units (walk ups) which is a high-density concept. The construction programme has commenced with technical challenges. The project has different phases in the provision of services and top structures. Approved beneficiaries are to receive title deed to their properties. 103 top structures have been completed to date and handed over to beneficiaries and the balance are at different stages of completion. The project is accommodating informal dwellers from the Masinenge informal settlement. The current development has surplus informal dwellers and also constant inflow of new informal dwellers.

The Mkholombe development (1000 units - informal settlement upgrade) and Bhobhoyi Phase 2 development (1098 units - Green field development) are some of the new developments that can address surplus informal dwellers from the Louisiana and Masinenge informal settlements. With regard to the Mkholombe housing project detailed studies are being carried out with the options of also providing mixed income housing. It will also necessitate the Municipality identifying new developable land to address surplus of informal dwellers from the existing settlements. Bhobhoyi Phase 2 requires bulk infrastructure services to be provided by Ugu District Municipality.

11.3.3.2. RURAL HOUSING PROGRAMME

The Municipality has initiated various rural housing projects in terms of the rural housing programme which will yield approx. 18722 housing opportunities. This reflects projects that have already been completed, those which are at implementation stage (different levels of construction/ upgrading) and lastly those that are at the planning phase. Current and Planned Projects are dependent upon Human Settlements Grant funding from the Provincial Department of Human Settlements (annually). Rural housing projects are implemented mainly on communal land and are based on functional land tenure rights. Implementing Agents are appointed to undertake the project. The policy states that one household to one house which means that each rural household qualifies for one house irrespective of the number of people that qualifies for a housing subsidy.

Table 26: Rural Housing Projects - Completed & Planned

PROJECT	WARD	CLUSTER	NO OF UNITS	FINANCIAL VALUE	CURRENT STATUS
Vukuzithathe Phase 1 (Nkulu &Mbeni)	33 & 36	1	1116	R61 380 000.00	Completed
Vukuzithanthe Phase 2 (Dlovinga))	31,33 &36	1	1000	R55 000 000.00	Completed
KwaNyuswa Phase 1 (Mahlabathini & Thonjeni	34	1	1000	R55 000 000.00	Completed
Mthimude Phase 1	36	1	1000	R 74 810 790-00	Project closed off at 989 units. 11 sites have challenges
KwaMadlala	14	7	1000	R 126 954 730.00	Construction – 750 units have been completed. Balance of 250 units
Oshabeni (phase 1)	4 and 12	6& 7	502	R 63 818 915.00	Construction – 502 units completed.
KwaNdwalane (deep rural)	24 and portions of wards 3.20,21,22,and 23	5 & 6	1000	R 133 917 195.00	Construction – 979 units completed. Balance of 21 units
KwaNdwalane (Phase 2)	Portions of wards .20,21,22,and 23	5	500	R 64 042 796.00	Construction –110 units completed. Balance of 390 units
Gamalakhe (insitu- upgrade)	Portions of wards 25,26,27,and 28	4 & 6	2000	R 63 427 145.00	Construction – phase 1 approved for 500 units. 70 upgrading of units have been completed. Balance of 430 units
KwaMavundla	17, 20,25,26 &27	.4 & 6	1104	R 76 924 542.00	Construction –1100 unit have been completed. Balance of 4 units
KwaXolo (Phase 1)	7 and 9	2	1000	R 10 243 041.52	Construction – 977 units have been completed. 23 site with challenges to be addressed.
KwaXolo Phase 2	8. 29 & 32	2 & 4	1100	R 144 195 388.00	Construction: 920 units completed. Balance of 180 units.
KwaNzimakwe (Phase 1)	8,10 and 11	2 & 3	500	R 63 869 960.00	Construction – 498 units completed. Balance of 2 units
KwaNyuswa Phase 2 (WoSiyane/Nkulu	34	1	1000	R 74 000 000-00	Planning – Implementing Agent appointed. Tranche 1 Application submitted to the PDoHS. Project will be phased with 500 units.

KwaNyuswa Phase 2- Blose	35	1	1000	R 74 000 000-00	Planning-Implementing Agent appointed. Tranche 1 application submitted. Project will be phase with 500 units**. In the 2019/2020 financial year the PDoHS has committed funding for the project (tranche 1)**
Mthimude Phase 2 Hlomendini /Bhosiki	35	1	1000	R 74 000 000-00	Planning -Implementing Agent appointed. Tranche 1 application submitted. Project will be phased with 500 units. **In the 2019/2020 financial year the PDoHS has committed funding for this project (tranche 1)**
Mthimude Phase2 Shibe	35	1	1000	R 74 000 000-00	Planning: Implementing Agent appointed .Tranche 1 application submitted. Project will be phased with 500 units. **In the 2019/2020 financial year the PDoHS has committed funding for this project (tranche 1).**
Vukuzithathe phase 3- Ngawusheni / Bdlazi	30	1	1000	R 74 000 000-00	Planning: Implementing Agent appointed .Tranche 1 application submitted. Project will be phased with 500 units **In the 2019/2020 financial year the PDoHS has committed funding for this project (tranche 1)**
Vukuzithathe Phase 3- Bandlana/ Shobashobane	30 /31/33	1	1000	R 74 000 000-00	Planning – Implementing Agent appointed. Tranche 1 application still to be submitted. Project will be phased with 500 units
TOTAL			18722	R 1 437 584 502.25	

11.3.3.3. GREENFIELD HOUSING PROGRAMME

In addition to the upgrading of informal settlements and rural housing projects, the Municipality is also implementing a number of Greenfield housing projects. The majority of these are urban and will contribute significantly towards addressing the housing backlog as it affects both the low income and middle-income communities. These projects will yield a total of approx. 1366 units. They are at different stages of the development programme. In Merlewood, it has been established that some of the housing units were build outside of the cadastral boundaries and require bulk water supply. However, these matters are being addressed.

Table 27: HCM Greenfield Human Settlements Projects

PROJECT	WARD	CLUSTER	NO OF UNITS	FINANCIAL VALUE	TITLE DEED RESTORATION	CURRENT STATUS
Bhobhoyi Phase 1	20	6	711	R56 000 000.00	427	711 sites were serviced. 699 units were built. To undertake title deed restoration. Funding approved by the PDoHS to address challenges within the project affecting title deed restoration.
KwaNzimakwe (PHP) KwaLatshoda	1	7	1813	R60 000 000.00	600	1813 sites were serviced. 600 top structures were built. Remaining units cannot be built due to bulk infrastructure challenges and road expansion (SANRAL) To undertake title deed restoration. Funding approved by the PDoHS to address challenges within the project affecting title deed restoration.
Bhobhoyi Phase 11	20	6	1098	R 164 700 000.00	0	Bulk Infrastructure challenges being addressed by Ugu District Municipality.
Merlewood housing	17	6	228	R 30 792 699.48	0	37 sites unbuildable. 137 units completed, 45 with bulk challenges, awaiting for additional bulk infrastructure funding (water).
Lot 7 Albersville	12	7	40	R 3 670 606.80	0	Challenges with local community on land ownership. Project is on hold due to land owner challenges within the beneficiary community.
TOTAL			**3890**	**R 315 163 306.28**	**1027**	

11.3.3.4. RECTIFICATION HOUSING PROGRAMME

Table 28: Rectification Housing Programme

PROJECT NAME	PROGRAMME TYPE	WARD	CLUSTER	NO. UNITS	FINANCIAL VALUE	CURRENT STATUS
Gamalakhe	Rectification	26 &28	4	273	R 34 000 000.00	177 rectification of units completed.
TOTAL				**273**	**R34 000 000.00**	

11.3.3.5. SOCIAL HOUSING PROGRAMME

The following sites were identified as Restructuring Zones, but only 3 of them were approved by the Provincial Department of Human Settlements.

- Erf 1675Uvongo.
- Rem 26 of erf 4939 & 4941 Marburg
- Erf 2319 Marburg
- Rem 1627 and erf 2309 Oslo Beach
- Erf 1735 Rathbonville
- Erf 137 Port Shepstone

ERF 4939 & 4941 (Marburg) and Erf 1675 (Uvongo) has been gazette for Social Rental Housing Provision. The Municipality will enlist the services of established Social Housing Institution with good management and track record on social housing provision to assist the Municipality in this regard Approx. 2000 housing opportunities can be provided with different housing typologies and densities, mainly rental accommodation for Government employees.

In terms of Rem 26 of ERF 4939 this site can yield approx. 500 units. The PDoHS and SAHRA have appointed a Service Provider to undertake pre-feasibility studies on the site in the current financial year.

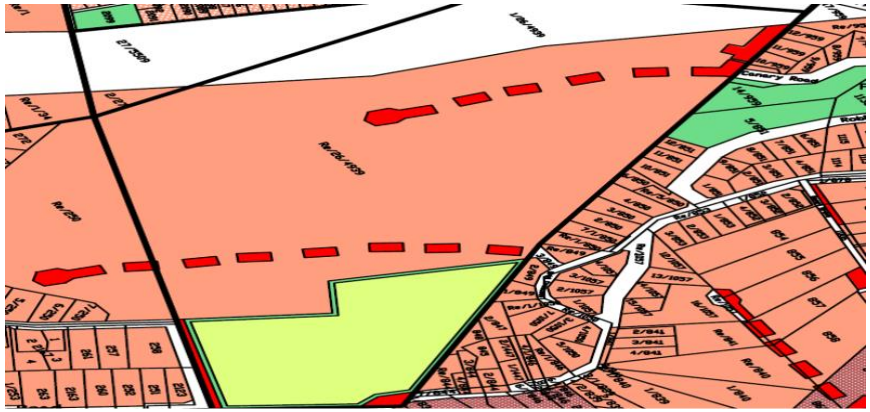


Figure 29: Rem 26 of 4939 (Site for Social / Rental Housing)

Figure 30: Type of Social Housing

11.3.3.6. INTEGRATED RESIDENTIAL HOUSING PROGRAMME (FLIP AND GAP HOUSING)

Municipalities are now being advised of the need to increase densities of their towns and cities to combat urban sprawl and to build better compact cities and towns for the future have been prioritized by Government as set out in the key actions of the National Development Plan and the Strategic Development Goals. It is also mooted that these objectives were also included in the comprehensive Plan for the Creation of Sustainable Human Settlements in 2004 (Breaking New Ground).

Organs of the State responsible for human settlement planning and development at Provincial and Municipal levels are under severe pressure to positively contribute towards the delivery of sustainable human settlements through the application of higher density developments. The only higher density state funded development option available is the Social Housing Programme and Community Residential Unit Programme. Rental housing is rarely affordable to the poorest of the poor and affordable rental options are currently in very high demand. There is thus no higher density human settlement ownership programme that has been considered.

The National Department of Human Settlements appointed a consortium of expertise comprising of architects, quantity surveyors and civil engineers to redesign the house to be funded under the Housing Subsidy Scheme in line with the latest National Building Regulations (NBR). The Consortium investigated and tabled proposals on a variety of house typologies that could be considered to expand the scope of the National Housing Programmes, particularly to address the need for higher density developments.

With regard to multi storey higher density units, the application of the proposed new higher density house typologies should therefore not be compulsory. Each development area will require a tailored housing development strategy. Provinces and Municipalities should therefore be allowed discretion to select from the enhanced range of house construction design options whether to opt for the higher density ownership developments where such is regarded feasible and practicable.

In terms of ensuring integrated sustainable human settlement development the Municipality has identified developable land to implement the integrated residential housing programme by providing mixed income housing in terms of the relevant income bands with a variety of housing typology and density. The programme will also address overflow of beneficiaries from informal settlements, settlements that cannot be developed.

Table 29: Sites identified for other forms of housing income

SITE AREA	WARD	CLUSTER	NO OF HOUSING OPPORTUNITIES	STATUS
Marburg (5344)	20	6	144	Undertaking technical investigations
Sunrise Bay (Lot 1561) Shelly breach	3	4	300	Rental units. PDoHS to assist with land acquisition and funding
Portion 15 (of17) Portion 16 (of 17) and the remainder of 7 of the farm success no 7108	22	5	281	PDoHS has assisted by purchasing the land for the Municipality. **The property was registered in the name of the Municipality in the 2018/2019 financial year**
Disposal of Council Owned serviced Sites (various areas)	Various	n/a	350	Disposal of sites to developers of development in terms of the FLIPS housing programme
TOTAL			**1075**	

Expansion of housing typologies to be delivered through National Housing Programmes being designs and costing for higher density typologies (Provincial Communique No1 of 2018).

Figure 31: Double story Semi-detached with mono pitch roof

11.3.4. HUMAN SETTLEMENTS DEVELOPMENT PROJECTS

Table 30: Human Settlements Development Projects

PROGRAMME	PROJECT	WARD	CLUSTER	PROJECT SIZE
COMPLETED PROJECTS				
Informal Settlement Upgrade (urban)	Louisiana	15	7	697
Greenfield	Bhobhoyi Phase 1	20	6	711
Greenfield	KwaNzimakwe KwaLatshoda (PHP)	1	3	1 813
Rural Housing	KwaMavundla Rural Housing	17, 20, 25, 26 & 27	4,6	1004
Rural Housing	Vukuzithathe Phase1 (Nkulu & Mbeni)	33 and 36	1	1116
Rural Housing	Vukuzithanthe Phase 2 (Dlovinga)	31, 33 &36	1	1000
Rural Housing	KwaNyuswa Phase 1 (Mahlabathini & Thonjeni	34	1	1000
Sukuma Sakhe	KwaMadlala	14	7	51
Emergency Assistance	June 2008 Disaster Housing	Various	Various	98
Emergency Assistance	Disaster Housing (Brocon)	Various	Various	38
SETTLEMENT UPGRADING PROGRAM				
Urban	Masinenge	3	4	882
Urban	Mkholombe	20	6	1000
Urban	Bhobhoyi (Phase 11)	20	6	1098
Rural	KwaMadlala	14	4, 6 & 7	1104
Rural	Oshabeni (Phase (1)	4 and 12	7	502
Rural	KwaNdwalane: Phase 1	24 and portions of wards 3, 20, 21, 22, and 23	4 & 5 & 6	1 000

Rural	KwaNdwalane (Phase 2)	Portions of wards 20, 21, 22, and 23	5 & 6	1 000
Rural	Gamalakhe (insitu- upgrade)	Portions of wards 25, 26, 27, and 28	4 & 5	2000
Rural	KwaXolo	7 and 9	2	1000
Rural	KwaXolo (Phase 2)	5, 8, and 29	2 &4	1100
Rural	KwaNzimakwe (phase 1)	8, 10 and 11	2 & 3	1000
Rural	KwaNyuswa Phase 2 - WoSiyane /Nkulu	34	**1**	**1000**
Rural	KwaNyuswa Phase 2 - Blose	35	**1**	**1000**
Rural	Mthimude Phase 2- Hlomedini /Bhosiki	35	**1**	**1000**
Rural	Mthimude Phase 2- Shibe	35	**1**	**1000**
Rural	Vukuzithathe Phase 3- Ngawusheni / Bdlazi	30	**1**	**1000**
Rural	Vukuzithathe Phase 3- Bandlana /Shobashobane	30,31 and 33	**1**	**1000**
Rural	Mthimude Phase 1	36	**1**	**1000**
GREENFIELD				
Greenfield	Merlewood mixed income housing	17	6	228
Greenfield	Lot 7 Albersville	12	7	40
MIDDLE INCOME HOUSING				
Greenfield	Merlewood Middle Income housing	17	6	187
RECTIFICATION – CURRENT PROJECTS				
Rectification - Pre- 1994	Gamalakhe Rectification	26 and 28	4	273
OTHER MEDIUM OF HOUSING PROVISION				
IRDP- Mixed Income Housing	Marburg settlement (5344)	20	**6**	**144**
IRDP- Mixed income Housing	Disposal of Council owned Services Sites	12,17 and 18	**6 & 7**	**350**
IRDP-Mixed Income Housing	Lot 1561- Shelly Beach	3	**4**	**300**
IRDP Mixed income Housing	Portion 15 (of 17) Portion 16 (of7)and the remainder of 7 of the farm Success no 7108	22	**5**	**281**

11.3.5. CLIMATE CHANGE PHENOMENON ON HUMAN SETTLEMENTS

The Municipal area is diverse not just in terms of population and biodiversity, but also in terms of its human settlements. Urban rural and costal human settlements face particular environmental and social challenges. The projected impacts of climate change on urban settlements are complex and diverse.

Table 31: Some Key Impacts on Human Settlements

CLIMATE CHANGE PHENOMENON	CONSEQUENCES FOR HUMAN SETTLEMENTS
Heat waves and drought	Increase water demand, water quality problems, increase risk of heat related morality especially for the elderly , chronic sick for young and poor, reduction in quality of life for people without appropriate housing
Intense precipitation events and severe storms	Adverse effects on quality of surface and ground water, contamination of water supply, Increase risk of death, injury, loss of property, and diseases. Displacement of families and migration to urban areas. Pressure on urban and rural infrastructure, disruption of water supplies including transportation.
Sea level rise and storm surges	Decrease in freshwater availability due to salt –water intrusion. Loss of property and livelihood, and challenges with risk cover to property.

11.3.5.1. IMPACT ON URBAN SETTLEMENTS

Increased costs of water, liquid fuels and electricity as industry inputs. Increase cost of labour linked to food, energy, water and transport costs. Direct impacts of weather on construction, electricity generation and other industries, resulting in loss of productivity. Increased risk of lack of water delivery as a result of increased demand because of higher temperatures and drying conditions. Increased population size in urban and peri-urban areas, leading to increased pressure on service delivery and competition for resources, as a result of migration from rural areas affected by climate change. Increased disruptions to transport infrastructure (roads, rails, bridges, airports,) as a result of extreme weather events. Increased risk of extreme weather events to already vulnerable informal settlements, that are often unplanned, and without extensive service or infrastructure.

11.3.5.2. IMPACT ON RURAL SETTLEMENTS

Reduced productivity of subsistence farmlands as a result of rising temperatures, unreliable rainfall, and water scarcity. Increased vulnerability to water shortages because of increased evaporation, changes in rainfall, damage to infrastructure from floods and storm surges, and reduction in groundwater recharge. Reduced availability of natural resources on which many rural communities depend, because of diminished biodiversity in already degraded ecosystems. Physical isolation of rural communities as a result poor rural roads and increased flooding and erosion. Reduced food security, particularly of subsistence farmers, and resultant increase in malnutrition. Increased migration from rural settlements to urban and peri-urban settlements.

11.3.5.3. IMPACT ON COASTAL SETTLEMENTS

Increased loss of property and damage to infrastructure. Increased disruptions to basic services as increasing groundwater salinity accelerates leeching of toxins from landfills threatening drinking water, and rising seas and storm surges result in backwash" though sewage and wastewater systems causing damage and hazardous pollution. Increased groundwater salinity threatening smallholder and families who depend on vulnerable aquifers for irrigation of coastal farmlands. Reduced income from tourism as a result of reduced marine recreational opportunities and increased impact on tourism supporting infrastructure, such as beach access roads.

11.3.5.4. IMPACT ON HUMAN MIGRATION AND CONFLICT

Large flows of people both from rural areas to urban, and between urban (or peri-urban) areas. Climate-related food insecurity, service incapacity, extreme weather events and water security could lead to increased migration. Migration is likely to be experienced from both other Municipal areas and Provinces. Climate change will accentuate the existing trend towards urbanization due to the negative impacts of climate change on rural livelihoods.

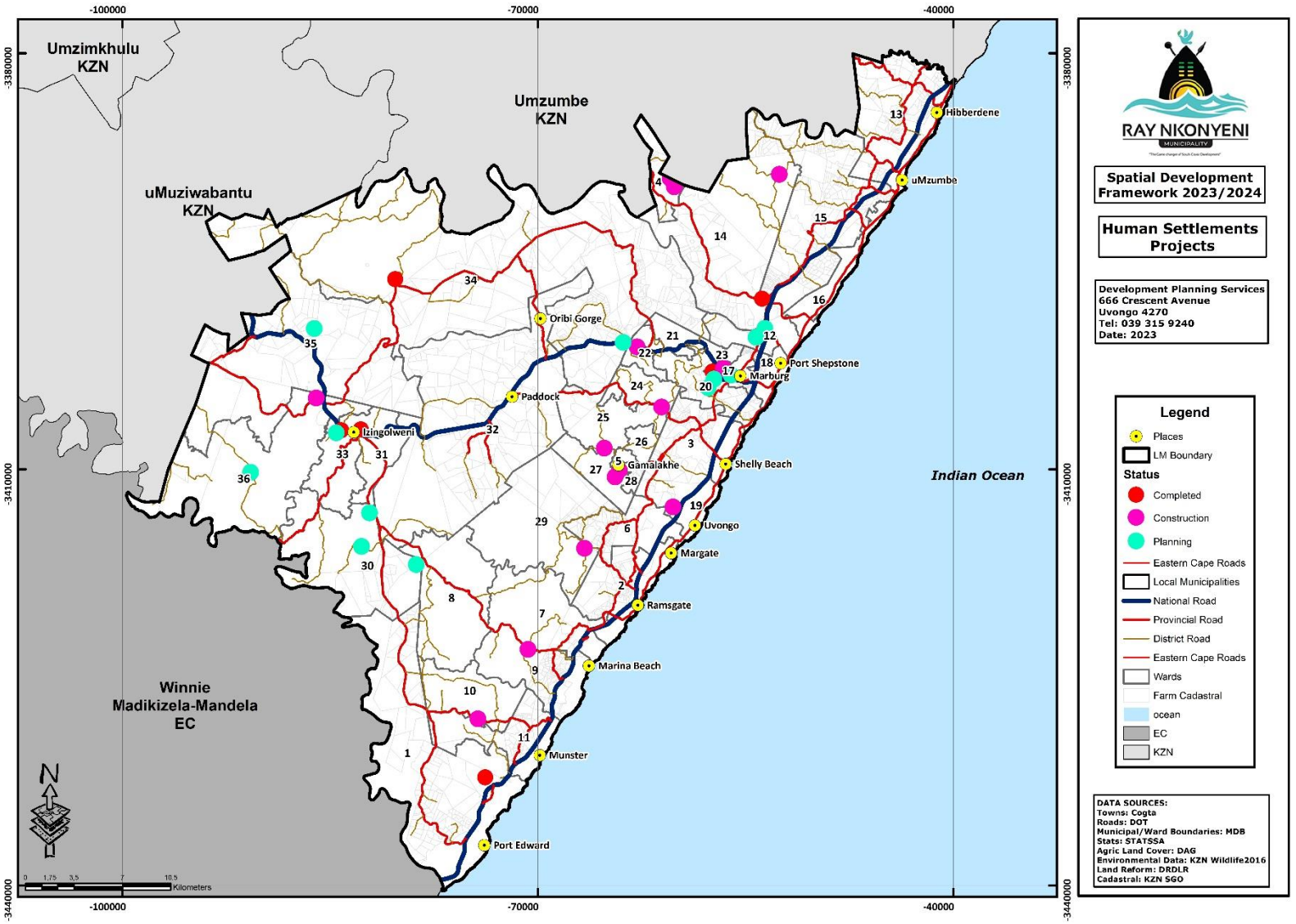
Therefore, spatial planning, design and funding for Human Settlement Programmes & Projects should be guided by environmental constraints created by climate change.

11.3.6. LAND FOR FUTURE HUMAN SETTLEMENTS

PROPOSED USAGE	OWNER/SELLER/ AGENT	PROPERTY DESCRIPTION	PROPOSED DEVELOPMENT
Future housing developments (different density and typologies)	Mr Dammont	Portion 15 (of 7), Portion 16 (of 7) and Remainder of 7 of the Farm Success No. 7108 – (Twin Stream Estate Pty (Ltd.)	The property measures 25.22 hectares. The site has already obtained DFA. The property can yield 281 residential sites, 1 multi-use retail (commercial site), 7 public open spaces, 1 crèche, 1 worship site, 1 parking site and 11 public roads. ***The PDoHS has acquired this land parcel for the Municipality and is registered in the name of the Municipality***
Future housing developments (different density and typologies)	Mr NV Chetty	Portion 8 (of 4) of the Farm Louisiana No. 3239, Portion 46 (of 7) of the farm Louisiana No. 3239 and Portion 34 of the Farm Sanderstead No. 15566 –	The property measures 88.35 hectares. The property can yield 557 residential sites, 1 worship site, 1 education site, 1 crèche, 1 commercial site, 5 public open spaces and 7 conservation sites. ***The PDoHS has acquired this land parcel , registered in the name of the State***
Future housing developments (different density and typologies)	Ugu District Municipality	Erf 2554 Marburg and Rem 1627 – (Ugu District Municipality)	As this stage there is no approved layout plans
Integrated Residential Housing Programme (mixed income housing)	Mr Frik Pieterse Mr MM Gumede	Portion 1 of Lot 7 Marburg Settlement 5344 - (Mr Frik Pieterse) Lot 5 Marburg Settlement No. 5214 – (Mr MM Gumede)	The site has been planned, surveyed, and serviced. The property yields 164 sites which have been serviced of which 20 sites will be considered for Military Veterans. The property measures 40.46 hectares

			The PDoHS has acquired this land parcel. Registered in the name of the State
Integrated Residential Housing Programme (mixed income housing)	Mr Tony Kay	Consolidated Lot 1561 Shelly Beach. – (Mr Tony Kay). The property is located 6 km from the town of Port Shepstone towards Shelly Beach, 500m from Esayidi FET College's Oslo Beach Campus; it is next to South Coast Mall, 2km from Shelly Beach Industrial Area, and 400m from the proposed High-tech College. The property is situated right in the heart of Shelly Beach area.	The site has been planned, surveyed, and serviced The property measures 88 hectares. - The ROD and DFA are both in place and the Township is Registered - The property can yield 335 residential sites plus 200 to 300 flats. But by rezoning two of the four phases to General Residential 3, you can reduce the number of sites to 180 but build an extra 678 flats to create a mixed-use development e.g. Conubia in the North Coast of KwaZulu Natal Province -There is no commercial site on the property, 5 private open spaces, 1 proposed crèche, 1 proposed place of worship, and 5 private roads - The property is serviced with Roads & Storm water, Water, Electricity & Sewer - Development can start immediately - The Development will create about 1000 jobs during construction and 3000 permanent jobs post construction. ***A portion of the development site is to be acquired for General Residential development with regard to high density development***
Integrated Residential Housing Programme (mixed income housing)	Parry Anthuriums cc T/A/Orgi Nursery	Erf 21, Portion 1, Margate (1.4758 hectares). Remainder of Eft 21, Margate, (4407-meter square). Remainder of Erf 2709, Margate (1384-meter Square)	Site will be required for extension of Masinenge slums Clearance Housing Project. Still to be undertaken- Feasibility study/valuation/bulk infrastructure/ planning/funding.

Future housing developments (different density and typologies)	Mr Chinnasami	The farm Lot 1 Marburg Settlement No, 5213 (20 2343 Hectares)	Still to be undertaken- Feasibility study/valuation/bulk infrastructure/ planning/funding.
Future housing developments (different density and typologies)	Mr SG &HA Moodley	Remainder – Remainder of Erf 2177, Marburg (15198 hectares)	Still to be undertaken- Feasibility study/valuation/bulk infrastructure/ planning/funding.



Map 30: Housing Projects

11.3.7. LAND RELEASE

Land identification exercise should be undertaken to identify, map and assess all strategically located land that is suitable for housing development. This is in addition to the land that is subject of the current and planned housing projects. The exercise should be based on the following criteria:

- ✓ Ownership of land.
- ✓ Restrictive conditions of title and other encumbrances.
- ✓ Current land use and existing zoning.
- ✓ Size and potential yield for different housing products.
- ✓ Availability of services within the site.
- ✓ Location in relation to employment and other urban opportunities.
- ✓ Market value of the land as determined by the municipality for rating purposes.
- ✓ Geotechnical, topographical and other environmental conditions.
- ✓ The use of the land for housing purposes should be in accordance with IDP and the associated sector plans.

This exercise should be supported by a land release policy clearly stating the manner in which the municipality will acquire, allocate land and release it for development. In some instances, this may include entering into collaborative initiatives with the private sector (e.g. private public partnerships).

11.3.8. HOUSING DEVELOPMENT AND DELIVERY

A comprehensive housing strategy should be followed in the development of sustainable human settlements. Particular focus should be paid on integrated mixed residential development and slums clearance within urban areas while the focus on rural areas should be the eradication of inadequate housing. Rural settlements should be prioritised for the development of human settlements through the rural housing subsidy scheme.

11.3.9. INTEGRATED MIXED RESIDENTIAL DEVELOPMENT

This involves the following strategic approaches:

- ✓ Identification of vacant strategic located land parcels to undertake BNG projects and Mixed Residential Development;
- ✓ To facilitate the provision of bulk infrastructure and services within the sites earmarked for future integrated residential development; and
- ✓ To package mixed residential (low, middle and upmarket) housing projects involving the Department of Human Settlements and Private Sector (Banks).

11.3.10. SLUMS CLEARANCE

The informal settlements are:

- ✓ Bhobhoyi Phase 2 with 1100 households.
- ✓ Louisiana with 1000 households.
- ✓ Masinenge with 1542 households.
- ✓ Mkholombe with 1600 households.

The key driver for informal settlement establishment in the municipality is primarily to access livelihood opportunities within the available urban areas. The location of the primary informal settlement areas such as Mkholombe close to Port Shepstone and Masinenge close to Margate and Uvongo attest to this. The predominant settlement pattern is one of very dense informal settlement in areas (65-100 du/ha) close to the towns with more sparse, although still dense rural settlements areas, just of the main coastal line and in the Ingonyama Trust Land areas. The following spatial planning directives will be applied in the implementation of slums clearance projects:

- ✓ Mapping and assessment of informal settlements to establish whether they can be upgraded Insitu or requires relocation.
- ✓ Develop and introduce a land invasion policy as a means to prevent development of new and expansion of the existing informal settlements.

11.3.11. RURAL HOUSING: SUSTAINABLE DENSELY AND SPARSELY POPULATED RURAL SETTLEMENTS

The government's rural housing assistance programme has been designed to complement the realisation of the objectives of Integrated and Sustainable Human Settlements. The rural housing assistance programme needs, or demand based and designed to provide housing and infrastructure assistance within the specific circumstances. The KwaZulu-Natal Draft Rural Land Use Norms and Standards suggested the following approaches in terms of sustaining rural settlements:

- ✓ Sustaining Densely Populated Rural Settlements: (a) Prioritized for settlement plan (b) Stronger ties between Land Use Managers and Land Allocators (c) Settlement edge: drawn up (d) Advanced Services i.e. waterborne sewerage (e) **Stringent controls i.e. prohibiting on-site/ home burial** (f) Nodal/ Densification Forecasting Plans. This designation has been prioritized for densely populated settlements which are KwaXolo (i.e. Gcilima, Enkulu and Duzane), KwaNdwalane/ Nsimbini (i.e. Murchison Flats, Boboyi, Madakane and Nyandezulu) and KwaMavundla (i.e. Thafeni and Nsangwini).
- ✓ Sustaining Sparsely Populated Rural Settlements: (a) Agri-village promotion (b) protection of patches for subsistence agriculture (c) grazing land management (d) Rudimentary services and 'country lifestyle' allowed (e) On-site burial allowed. This designation has been prioritized for KwaXolo (i.e. Dumezulu, Thulawayeka, Mbecuka and Nkampini), KwaMadlala (i.e. Sentombi, Cabhane and Mambili), Oribi Flats, Paddock, Bhosiki and KwaLushaba (i.e. Mgolobi).
- ✓ Enforcement of proper farmworker housing: (a) Location: within the farm or the nearby traditional council area if commuting is possible (b) Role of Owner: the farm owner shall engage local municipality with an intent to provide housing for workers (c) **No workers should be accommodated in shacks, stables, wooden cabins, storerooms or informal dwellings** not approved by council and (d) the farmworker subsidy can be used as an instrument in the event whereby the farm owner agree to a partial subdivision or (e) the farmer will be liable to provide housing to his/ her workers should subdivision of his farm be viewed as an undesirable option.

11.3.12. AREAS FOR FUTURE HOUSING

The areas that have been identified for future integrated residential developments are as follows:

- ✓ Marburg settlement (5344);
- ✓ Lot 1561- Shelly Beach; and
- ✓ Portion 15 (of 17) Portion 16 (of 7) and the remainder of 7 of the farm Success no 7108.

Further sites have been identified for social housing which are:-

- ✓ Erf 1675 Uvongo;
- ✓ Rem 26 of Erf 4939 & 4941;
- ✓ Marburg Erf 2319;
- ✓ Marburg Rem 1627;
- ✓ Erf 2309 Oslo Beach;
- ✓ Erf 1735 Rathbonville; and
- ✓ Erf 137 Port Shepstone.

11.3.13. RESTRUCTURING ZONES

The Municipal Council granted approval for the extended boundary demarcation regarding the already approved Restructuring Zones of Marburg, Protea Park and Uvongo. The extended boundaries will now include areas such as:

- Marburg: Umbango, Marburg, Merlewood, Portion of Port Shepstone, portion of Margate and non-urban areas
- Protea Park: Albersville, Umtentweni, Port Shepstone CDB, and Sea Park.
- Uvongo: Portion of Port Shepstone, Oslo Beach, Shelly Beach and Uvongo.

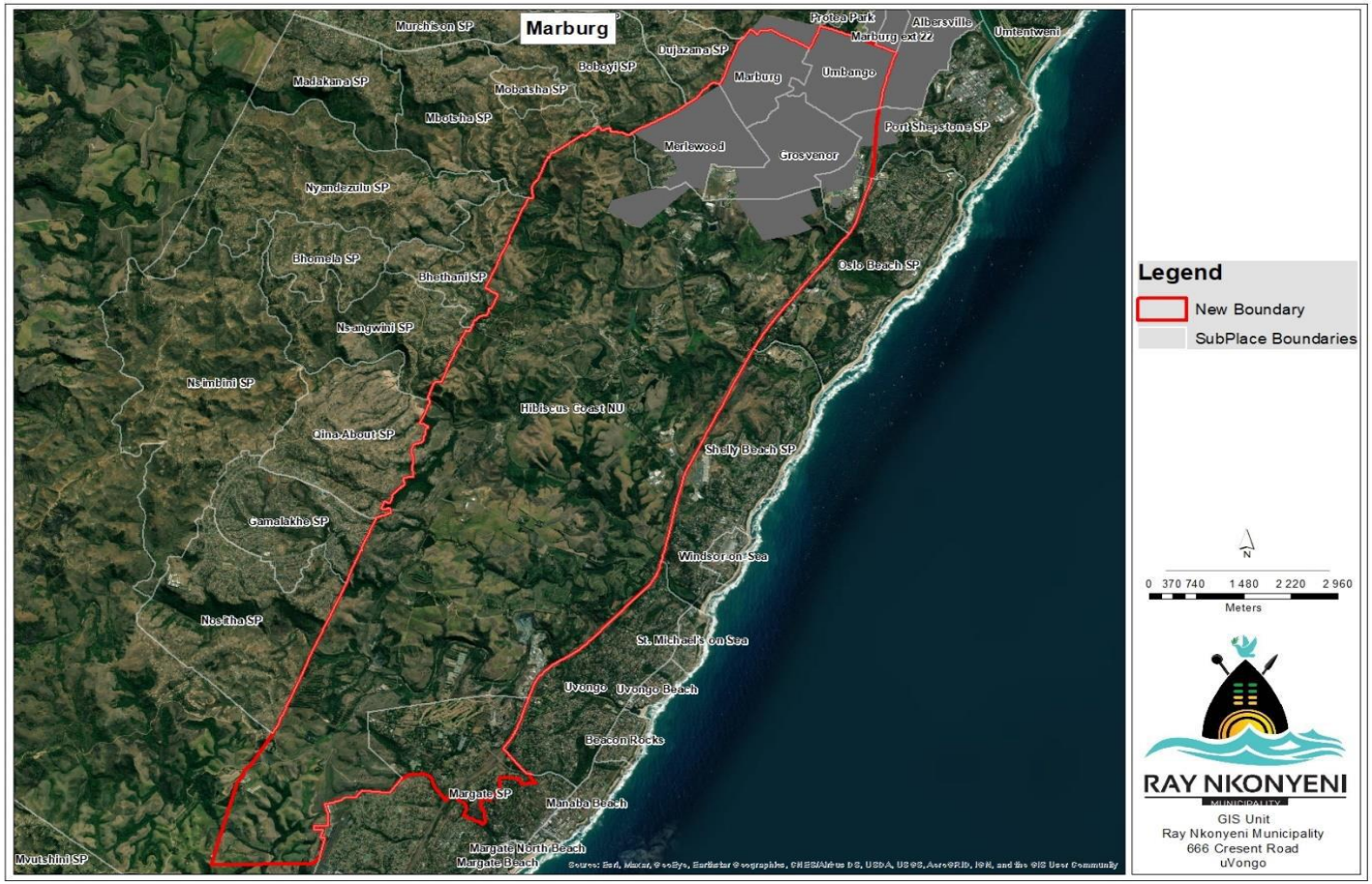


Figure 32: Marburg

Figure 33: Protea Park

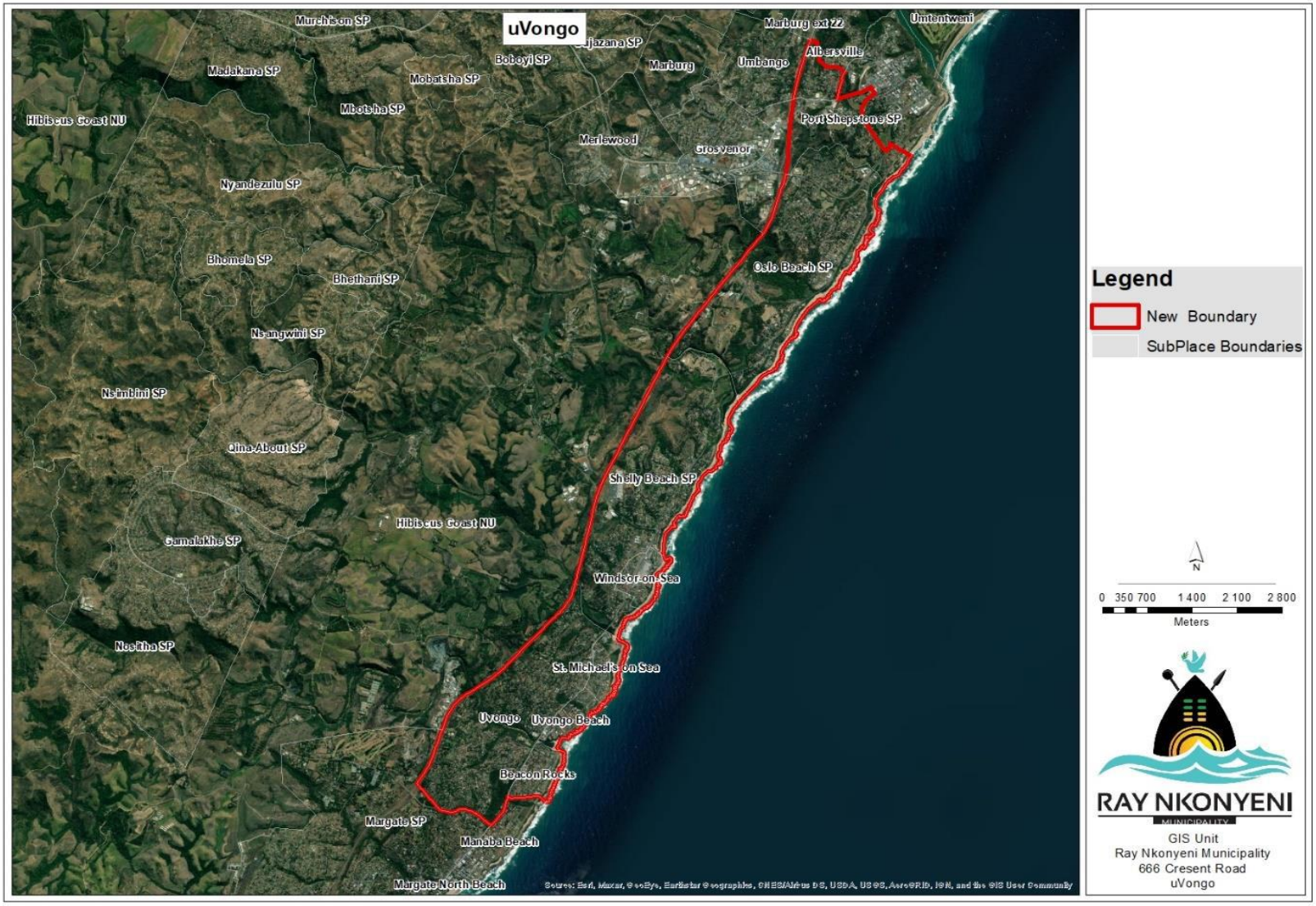


Figure 34: Uvongo

The following sites were identified for Social Housing (Rental) within the 5-year Provincial Department of Human Settlements Roll Out Programme:

Table 32: Department of Human Settlements Roll Out Programme

PROPERTY DESCIPTION	EXTENT	CURRENT ZONING	INTENDED REZONING	POTENTIAL YIELD
Lot 26 of 4939, Marburg	24.264 ha	Residential only 5	Residential High Impact 3	1213 units
Lot 29 of 4941, Marburg	11,234 ha	Residential only 5	Residential High Impact 3	936 units
Erf 1675. Uvongo	1.4925 ha	Residential only 5	Residential High Impact 3	124 units
Total				2273 housing opportunities

The following sites were identified for Social Housing (Rental / other) on Municipal Owned Properties with an Appointed Implementing Agent

Table 33: Protea Park (White City) - Restructuring Zone

PROTEA PARK (WHITE CITY) – RESTRUCTURING ZONE		
AREA	**PROPERTY DESCRIPTION**	**POTENTIAL YIELD**
ERF 2686	Marburg (Area 1)	150 units
Erven 2560-2564	Area 2A	15 units
Erven 2565-2625	Area 2B	166 units
Erven Remainder of 2377, 2439 and PTs 0-6 of 2440	Area 3A	257 units
Erven 2514 -2537, Marburg (Merlewood)	Area 4	120 units
Ervens 2542 – 2549, Marburg (Merlewood)	Area 5	55 units
Social Rental / mixed income housing		763 units(approx.)

11.4. LAND CARE AND AGRARIAN TRANSFORMATION

11.4.1. PROTECTION OF AGRICULTURAL LAND

The available large-scale agricultural land will need to be protected from being encroached by settlements; this can be done through proper zoning of these land parcels to prevent loss of good agricultural and production potential. Along with government, rural authorities can play a significant role towards achieving this such that they need to be involved (in their capacity as custodians of land) in relevant workshops or meetings to ensure that agricultural land is protected and only utilized for sustainable agricultural production. Poor resource (veld) management such as overstocking, the development of land for settlement (mainly in land reform projects) and other non-agricultural uses has led to the loss of significant areas of good agricultural land leaving land degraded and unproductive. The Department of Agriculture, Environmental Affairs and Rural Development has a responsibility to protect agricultural land from development that leads to its alienation from its primary purpose or to diminished productivity. Thus, the protection of good agricultural land within Ray Nkonyeni Local Municipality should be based on the following policy principles: -

- ✓ Any proposal for non-agricultural development on agricultural land should be subject to an application made to, and assessed by, the Department of Agriculture in terms of the Sub-division of Agricultural Land Act, (Act No. 70 of 1970).
- ✓ The preparation of planning schemes should include an evaluation of alternative forms of development, and significant weight should be given to those strategies which minimise the impacts on good quality agricultural land.
- ✓ The Land Use Scheme should aim to minimise cases where incompatible uses are located adjacent to agricultural operations in a manner that inhibits normal farming practice. Where such instances do arise, measures to amend potential conflicts should be devised.
- ✓ The land use scheme should provide for a hierarchy of agricultural zones based on the agricultural development potential and impact of non-agricultural activities on agricultural land. Non-agricultural activities such as agri-tourism, game farms with themed estates or lodges, resort developments, etc. should be located on land with low agricultural potential.

Agricultural potential should be used to establish agricultural zones in terms of the land use scheme and provide for a continuum of agricultural zones from predominantly agriculture only zones to zones that allows for a mixture of agricultural and non-agricultural uses. The following criteria may be used in this regard: -

- ✓ High potential agricultural land should be used for mainly agricultural activities. However, limited non-agricultural uses may be permitted especially along the corridors and within the designated development nodes. Conservation should form part of a drive to protect and enhance the quality of agricultural land. Irrigated land along the river corridors should be protected equally.
- ✓ Low potential agricultural land should be subjected to tourism and low intensity agricultural uses. Most of it is degraded and prone to soil erosion.

11.4.2. AGRICULTURAL DEVELOPMENT

Ray Nkonyeni Municipality is a predominately rural municipality with most the population dependent on agriculture either as a source of income or food. The municipality also boasts vast lands of relatively good agricultural potential which if fully exploited and properly developed can promote sustainable food production and livelihoods. The promotion of sustainable agricultural development especially among small scale farmers and households is key towards enhancing food security within the municipality and growing potential income for these respective farmers.

Several farming methods can be encouraged to small holder farmers looking to increase their production capacity without having to increase their acreage thus, the relevant infrastructure to support production and capacity building of these farmers will need to take place. Furthermore, promoting collaboration and knowledge sharing between small scale farmers and other agricultural organizations will be needed. Below is a list of strategies that can be promoted to promote the development of agriculture within the municipality:

11.4.2.1. TUNNEL FARMING

It is proposed that tunnel farming be used for the sole purpose of vegetable farming especially for the farmers with very restricted land potential. There are many advantages to using tunnel farming method of cultivating plants, such that, these plants are grown in plastic tunnels in a growth medium other than natural soil. The plants get a constant flow of nutrients as they are dissolved in the irrigated water system thus creating large and high-quality crops. Hydroponic systems are costs effective in that they produce high quality crops, at larger yields and reduces the cost of dealing with soil borne diseases.

Another form of this method fast gaining popularity is the utilization of Aquaponics this system is distinctively different to other systems as it is designed as a self-sustainable system with little to no waste products being released into the environment. Tunnel farming and aquaponics are greatly beneficial in areas with restricted land potential and land size. They allow small scale farmers to adapt to environmental threats associated with climate change, such that, these methods are resilient to the impacts of climate change such as heat stress, flooding, lightning, wind and hail associated with severe storms. Presently, subsistence farmers lack access to information and the resources necessary to adapt to climate change and as such are left vulnerable to its impacts.

11.4.2.2. SMALL SUGARCANE SCHEMES

A relatively large proportion of good agricultural land is currently used for sugarcane plantations within the municipality. Thus, creating an opportunity for the development of sugarcane schemes to promote and grow the small-scale growers within the municipality. This will require government and private sector support. Several land claims exist associated with some of these sugarcane farms and as such should they be successful, beneficiaries will need to be equipped and supported to ensure continuous success of these farms. Ongoing initiative for the rehabilitation of these existing lands under cane, as well as the development of new land to sugarcane such as communal land will be required.

Pursuing for continued productiveness of settled and unsettled land claim farms, will help increase small and medium-scale cane growers. Thus, the development of a sustainable sugar cane out-grower schemes will form key component towards promoting sustainable sugarcane production amongst small scale sugarcane growers within the municipality. As such strategic partnerships involving government and the sugarcane industry participants is much warranted through the provision of agricultural inputs, infrastructure and production and financial support. Furthermore, this provides a great platform for partnerships or collaboration between small-scale farmer groups (including formation of cooperatives) and partnerships involving small-scale farmers and already established commercial farmers which involves knowledge and information sharing, joint ventures between these farmers in marketing of their produce to assist in lowering transaction costs, speeding up spread of knowledge, information and innovation.

11.4.2.3. FOOD GARDENS

While the vast tracks of this land have been encroached by settlements an opportunity still exists to make use of few patches of the available agricultural land within the settlements to respond to food security initiatives. Intensive production on areas of arable land available, such as, areas located along river systems need to be utilized for food production whilst also encouraging the community and households to participate in the initiative to grow food gardens, however, caution will need to be taken in terms of planting too close to the water edge. Nonetheless, all these initiatives identified will require great support and collaboration between the communities, government, and the private sector to succeed. Thus, the initiative by government to build an Agri-park within the district and the associated Farmer Production Support Unit (FPSU) Centres within each Local municipality will greatly benefit Ray Nkonyeni Municipality and more importantly small-scale farmers and communities located within.

11.4.2.4. AGRICULTURAL LAND CARE

Subsistence farming remains a major source of food for many rural households within the municipality and as such, proper land care management should form part of promoting food security and sustainable agriculture considering community-based and indigenous approaches to sustainable food production. Rural communities need natural resources to sustain their livelihood and therefore sustainable land care management is required for these communities to continue and prolong this livelihood. Though current and past planning and

land use management has plagued these areas threatening their livelihoods and survival, sustainable land care management should be the basis of successful agricultural development; therefore, the following table provides a guide adopted from the draft KZN rural norms and standards by the Dept. of Cooperative Governance and Traditional Affairs (CoGTA) to different standards that can be used to achieving this:-

LAND CARE AND AGRICULTURE			
	SITE SELECTION CRITERIA	**LAND SIZE**	**RECOMMENDED PRACTICE**
SUBSISTENCE AGRICULTURE	Land for subsistence agriculture should be located on land with relatively good agricultural potential and strategically located near water catchment areas.	Land for subsistence farming needs to be at least 1000m^2 to accommodate small scale agricultural production.	✓ Adoption of conservation tillage practices. ✓ development of small-scale irrigation systems ✓ Strengthening of community-based activities for farming ✓ Promotion of multiple agriculture to reduce risk of monoculture ✓ the use of contour ploughing and wind breaks; ✓ allowing indigenous plants to grow along the riverbanks instead of ploughing and planting crops right up to the water's edge; ✓ educating communities about the pollution impacts of the use of fertilizers and chemicals on water quality and food safety; ✓ Pathways can be easily eroded when water flows over them. Prevent this by breaking the water flow with logs, stone packs or old tyres; and ✓ Agricultural landowners need to familiarize themselves with those species that pose a threat on their own land and eradicate them.
GRAZING	Consider the suitability of grazing areas. Divide into camps based on herds and carrying capacity. In areas where tilling (ploughing) is impossible.	✓ Land allocation for grazing should meet carrying capacity of grazing area such that 1 livestock unit (LU)/ 2.5 hectares (Ha); ✓ Land for holding livestock should be at 100m2 per household; and	✓ Identification of a site for communal grazing where rotational grazing is compulsory and monitored and/or introduce a controlled grazing system that will regulate the amount of time and grazing that should occur at a place. ✓ proper disposal of manure produced by intensive livestock breeding to prevent water contamination;

		✓ Land for building chicken coup at 50m2 per household	✓ limiting herd sizes or restricting grazing ranges, avoiding overgrazing and the over-use of crop lands; and ✓ The replanting of indigenous plants to ensure that there are always plants growing on the soil. ✓ Alien plant species and bush encroachment control should be done on a regular basis this can be done through the formation of local groups whose purpose is to clear invasive alien plants from public land for the benefit of local communities and their environment.
MANAGING GOOD POTENTIAL AGRICULTURAL LAND	Land identified as good agricultural potential by the Department of Agriculture should be utilized for agricultural purposes only and is not be utilized for settlement purposes.	There is no specific site size this depends on specific area and it's potential.	✓ Empowering traditional leaders in respect of the consequences of allocating land for settlements in agricultural lands; ✓ proper disposal of sewage from human settlements to prevent run-offs to nearby water sources; ✓ organic farming encouraged; and ✓ Stimulating the formation of land care groups.

Source: KZN Rural Norms and Standards Draft, KZN COGTA (2017)

11.5. OPERATION PHAKISA: OCEANS ECONOMY

11.5.1. THE CONCEPT OF OCEAN ECONOMY

Operation Phakisa is an initiative of the South African government which aims to implement priority economic and social programmes better, faster and more effectively. The Operation Phakisa: Oceans Economy was launched by His Excellency President J.G. Zuma, in October 2014. Initially four growth areas were prioritised to contribute to unlocking the economic potential of South Africa's oceans. This was based on their potential contribution to economic growth and job-creation. The following growth areas and corresponding departments were prioritised:-

- ✓ Marine Transport and Manufacturing led by the Department of Transport;
- ✓ Offshore Oil and Gas Exploration led by the Department of Mineral Resources;
- ✓ Aquaculture led by the Department of Agriculture, Forestry and Fisheries; and
- ✓ Marine Protection Services and Ocean Governance led by the Department of Environmental Affairs.

The Department of Agriculture, Forestry and Fisheries is the lead department for the Oceans Economy Aquaculture focus area and its deliverables. The Lab concluded that South Africa's aquaculture sector has a high growth potential due to an increasing demand of fish products due to the increasing global population; increasing income by the middle class in developing countries and more awareness on the dietary benefits offered by fish products. Moreover, the capture fisheries yield has been plateauing over the past decade while aquaculture continues to grow over 7% per annum and it is expected to continue growing at an even a higher rate in the future. The goal is to grow the aquaculture sector in South Africa to play a major role in supplying fish products; an enhanced role in job creation, increased contribution to national income and rural livelihoods. The targets over five years (2014-2019), seeks to grow sector revenue from R0,67 billion to R3 billion; production by 20 000 tons; jobs from 2 227 to 15 000 and to ensure increased participation to support transformation in the sector. During the Lab, twenty four (24) initial catalyst projects were registered on the Aquaculture Lab. Since the Lab more projects have been accepted as part of the Aquaculture Operation Phakisa and to date, thirty two (32) projects are registered. Thirteen projects discussed in detail below are operational and on track in terms of implementation plans. It is now 2 years since the launch of Operation Phakisa.

11.5.2. RAY NKONYENI OCEAN ECONOMY

Ray Nkonyeni Local Municipality is one of the municipalities that has been identified by the National Department of Public Works to implement the development projects associated with Operation Phakisa Programme which was launched by the President the Planning, Monitoring and Evaluation Department in July 2014 with the ultimate goal of boosting economic growth and create jobs. A maximum of five (5) projects were recommended. These include the pre-laboratory harbours and these are: -

- ✓ Hibberdene Waterfront Development;
- ✓ Port Edward Small Fishing and Development Harbour;
- ✓ Port Shepstone Boat building, maintenance, repairs, economic zone; and
- ✓ Shelly Beach Water Theme Park.

Over and above these pre-laboratory harbours, an additional three (3) projects were recommended for implementation under the Operation Phakisa Oceans Economy initiative. These projects include: -

- ✓ Priority 1: Port Shepstone Urban Renewal, Beachfront and John Mason Park Development;
- ✓ Priority 2: Technology Hub; and
- ✓ Priority 3: Margate Urban Renewal.

Recently, the National Department of Public Work have had various engagements with the municipality on the Operation Phakisa Methodology and roadmap with regard to convening of the small craft harbour initiative across the coastal municipalities of South Africa including Ray Nkonyeni Municipality. Such engagements took place in January and February 2017 in which each Municipality provided priority projects to Department of Public Works to be implemented as part of the Operation Phakisa initiative. The Minister of Public Works made an announcement on the 29th of March 2017, during the launching of the identified projects for each Municipality in East London.

11.6. PROPOSED LAND USES

11.6.1. PROPOSED COMMERCIAL

There are proposed future commercial activities within Ray Nkonyeni. These are proposed on the strategic points of all nodal areas. Future commercial land uses are proposed as part of mixed land use zones and future urban expansion. These would include the shopping mall and business parks. The commercial land uses will on the one hand facilitate the expansion of the existing nodes and diversification of the incipient nodes.

11.6.2. RETAINING EXISTING INDUSTRIAL

The current light industries areas will be retained within Izotsha and Marburg industrial areas. These are ideally located on the outskirt of the main settlement areas and are avoiding conflicting land use activities. The intention is to strengthen the industrial sector within Ray Nkonyeni Local Municipality.

11.6.3. PROPOSED MIXED USE

The proposed mixed uses are identified along all nodes. The intention is to encourage commercial, offices and residential. Residential development mainly targets gap housing or middle income housing within the appropriate threshold of the nodes. These will also facilitate expansion of these nodes.

11.6.4. PROPOSED INTEGRATED RESIDENTIAL SETTLEMENTS

The strategically located and prime land parcels within the District, Municipal, Community and Neighbourhood Development Nodes should be unlocked for future integrated residential developments. These land parcels are within the urban areas of the Municipality and should be seen as an opportunity for future housing opportunities which include integrated residential development with diverse typologies.

11.6.5. AGRICULTURE AND ECO-TOURISM

These are generally areas of lower accessibility and higher environmental sensitivity. The general objective is therefore that agricultural activities should continue, and natural resources be conserved. Tourism developments should be limited to natural and culture-based activities, and preferably integrated with farming activities. Large-scale land transformation such as exclusive residential estates shall not be allowed, nor will other forms of accommodation which have no link to the natural resource base and which diminish the agricultural potential and biodiversity value. Land subdivision will also be discouraged, but rural housing projects to accommodate the rural poor and farm and tourism workers will be allowed in appropriate locations. Attention should be paid to the retention of the integrity of rural landscapes.

11.6.6. AGRICULTURAL DEVELOPMENT ONLY

Most of the land in the municipality is utilised for commercial agriculture, and a significant proportion of the land has a very high production potential. Those areas identified through the agricultural assessment as having the highest agricultural potential have been reflected on the Spatial Framework Map as areas of agricultural development only. In general, the subdivision of prime agricultural land is discouraged and the development of this land for non-agricultural purposes should only be allowed if:

- ✓ The land has already been subdivided to such an extent that it is no longer agriculturally viable;
- ✓ The land has already been developed for non-agricultural purposes;
- ✓ The proposed development does not compromise the primary agricultural activity of the property;
- ✓ The proposed development comprises a secondary activity to supplement a landowner's income;
- ✓ It will facilitate the implementation of the Land Reform Programme and Labour Tenant Projects.

Rural housing projects to accommodate the rural poor and farm and tourism workers will be allowed in appropriate locations.

11.6.7. AGRICULTURAL AND LIMITED TOURISM

The high potential irreplaceable agricultural land should not be subdivided or subjected to any non-agricultural land uses. However, such land is at times located along tourism routes. The farms that are located adjacent to the SDF tourism routes can be allowed to transform into Agri-tourism whereby a % of the farm can be used for tourism related development.

11.6.8. FORMALLY CONSERVED

The formally conserved areas will be protected for conservation purposes. These areas should not be subjected to high intensity development. Any proposal that supplements conservation should be subjected to a detailed Environmental Impact Assessment.

11.6.9. ARCHAEOLOGICAL SITES

An archaeological site is a place (or group of physical sites) in which evidence of past activity is preserved (either prehistoric or historic or contemporary), and which has been, or may be, investigated using the discipline of archaeology and represents a part of the archaeological record. Sites may range from those with few or no remains visible above ground, to buildings and other structures still in use. Beyond this, the definition and geographical extent of a "site" can vary widely, depending on the period studied and the theoretical approach of the archaeologist.

There are three sites which are of archaeological significance within Ray Nkonyeni and these are: -

- ✓ **KwaXolo Caves** - The original inhabitants of the KwaZulu-Natal South Coast were the Bushmen or San people. They lived an idyllic life with plenty of game, fish and an idyllic climate with ample fresh water. A far cry from the deserts they would inhabit in later years. A treasure of rock paintings with unique stories to tell a hidden story of years gone by. These caves are still almost inaccessible, which is fortunate, as this has ensured the protection of this valuable natural asset.
- ✓ **The Red Desert (Port Edward)** - The world's smallest desert. This lies some 10 kilometres west of the town of Port Edward and is only 200 m in diameter and 11 hectares in its entirety. Best described as a miniature version of the Arizona Desert, the man high hills and valleys of naked red soil bare stark contrast to the surrounding lush and tropical vegetation. Archaeological artefacts going back millions of years can be found and the locals are pleased this is now an internationally protected heritage site. This peculiar phenomenon is surrounded by myth and legend including stories that this is the site of an alien landing. Truth be told the origins of this desert are found in the location of a Zulu tribe in the 1800's, with vast cattle herds stolen from the Pondo's. The terrain became severely over grazed and subsequently eroded by wind leading to the desertification and an opportunity to study the unique desert ecology.
- ✓ **Petrified Fossil Forest (Port Edward)** - The petrified forest, officially known as the Mzamba Cretaceous Deposits, is a set of famous marine fossil beds exposed in a 10-metre-high cliff that forms a prominent headland about 2,5 km south of the Mtamvuna River. The deposits consist of greyish-brown sandstone as well as limestone rich in fossil material dating back some 80 million years to the Upper Cretaceous period. The lower layers contain numerous tree trunks that have been silicified (converted into silica). Many of these were penetrated by marine worms before silicification was completed. The deposits also include an abundance of marine shells, among them spirally coiled cephalopod ammonites, echinoids (sea urchins) and bivalve shells. When the formation was brought to the attention of the scientific world in 1855, it provided the first evidence of fossils from the Upper Cretaceous. The Cretaceous is a geologic period and system from about 145.5 to 65.5 million years ago. Following on the Jurassic period, when dinosaurs walked the earth, it was a period with a relatively warm climate and high sea level. The oceans and seas were populated with now extinct marine reptiles, ammonites (a bit like octopus and cuttlefish) and rudists (primitive shellfish); and the land by dinosaurs. At the same time, new groups of mammals and birds as well as flowering plants appeared. The Cretaceous ended with one of the largest mass extinctions in Earth history, when many species, including the dinosaurs, pterosaurs, and large marine reptiles, disappeared. The Mzamba Cretaceous

Deposits have long been a protected locality, and fossil hunting and removal at this site are strictly prohibited.

11.6.10. HERITAGE ASSETS AND NATURAL RESOURCES

Worthington (1964 p 2 and 8) defines the term natural resources as *"everything that is derivable for the use of man from any part of the universe".* These include organic and inorganic natural resources. The organic being human beings, animals and plants while the inorganic is land surface (i.e. landscape), rocks (i.e. mineral occurrences and power), air (i.e. climate, nitrogen fixation), water (rivers, natural dams, ocean etc.) and soils. The heritage assets on the other hand is defined as *"assets of historical, artistic or scientific importance that are held to advance preservation, conservation and educational objectives of charities and through public access contribute to the national culture and education either at a national or local level"* (Accounting Standards Board: Discussion Paper, 2006, p18)

The focus of Ray Nkonyeni SDF will be on inorganic heritage resources found within rural areas which may include physical material or substances occurring on land which can be exploited for economic gain as well as heritage assets with all the values deemed necessary for conservation. The example of heritage assets that are found within Ray Nkonyeni are:

- ✓ Amadliza (Graveyard for Amakhozi); and
- ✓ Historical Buildings.

The natural resources that are found include:

- ✓ Aesthetic Historical Mountains and Ridges; and
- ✓ Historical Forestry.

The KwaZulu-Natal Draft Rural Land Use Norms and Standards suggests that these assets and resources should be maintained as follows: -

Table 34: Ray Nkonyeni Heritage Sites

HERITAGE ASSETS	
Idlinza (Graveyard for Amakhosi as local Monuments)	**MAINTENANCE AND PRESERVATION NEEDED**
	Fencing and placement of signage
	Clear the site using only hand trimmers or other hand tools
	Designate dump sites away from monuments/memorials
	Maintain existing pathways
	Do not apply paint to gravestone inscriptions
	Do not burn waste on site or within a memorial.
	Memorial Tombstones should not be cleaned with power washers, sand blasters or with chemical cleaners as these methods enhance the process of decay and will in the long-term speed up the loss of the inscription carved onto the cleaned memorial[2].
	The only safe way to clean a memorial is to wash the stone with water by using a damp cloth and followed by gentle brushing that will result in the removal of bird droppings and other biological growths that may be obscuring the inscription on the memorial[3].
Historical Buildings (Cultural Features)	Monthly / Annually – Annual checking of electrical equipment by professional trades people, Annual pest control treatment, Monthly test of alarm systems and smoke detectors, Monthly filter checks and cleaning for air conditioning unit, Annual inspection of ceilings, floors, paving, plumbing, internal painting, door hinges, hooks and locks. Every two years – Replace of glass where necessary and powder coated finishes applied where necessary.
	Every five years – Internal painting.
	Every ten years – External painting, Replacement of floor coverings, Replacement of guttering and Replacement of electrical wiring.
	Every twenty-five years – roof refurbishments/ replacement.

[2] Guidance for the Care, Conservation and Recording of Historic Graveyards: September 2011 – Second Edition

[3] Guidance for the Care, Conservation and Recording of Historic Graveyards: September 2011 – Second Edition

The KwaZulu-Natal Draft Rural Land Use Norms and Standards also suggest that the Natural Resources should be maintained as follows:-

Table 35: Natural Resources

NATURAL RESOURCES	MAINTENANCE AND PRESERVATION NEEDED
✓ Aesthetic Historical Mountains (topographical features)	Develop the complementary land use and landscape policy for each local area to avoid unacceptable visual intrusion
✓ Historical Rivers and Lakes	Prohibit the encroachment of buildings and structures within all historical sites
✓ Historical Forestry	Disallow the burning of waste, veld fires and setting alight of any material
✓ Ridges and Skylines (geological features)	Discourage extensive water harvesting within the designated historical spot of the rivers and lakes
	Protect wetlands/ watercourses as the drainage of the wetlands will result in increased velocity of runoff and consequent soil erosion
	Adequate vegetation cover should be maintained and unnecessary vegetation removals should be prevented
	Control surface runoff through the development of appropriate
	Introduce measures to control water quality and prevention of pollution of water sources and air quality
	Existing mature trees and other vegetation on site should be retained whenever feasible
	Promote the use of indigenous species

Source: KZN Rural Norms and Standards Draft, KZN COGTA (2017)

11.6.11. ENVIRONMENTAL MANAGEMENT

The environmentally sensitive areas were identified during the situational analysis. Essentially there are serious environmental risks spots with a high level of endangerment in terms of freshwater catchment, wetlands exposure, critically endangered as well as vulnerable vegetation and soil erosion. The need exists to put measures in-place in terms of conserving and managing this environment. These areas are a high priority in terms of environmental management with intent to avoid pollution and degradation due to irresponsible development and land uses. More stringent measures are applied when assessing any land use proposal within the vicinity of this designation. Essentially, the key goal is to promote conservation related land usage within these areas. The formally protected areas within Ray Nkonyeni Municipality are as follows:-

Table 36: Protected Areas

SITE	DATE PROCLAIMED	EXTENT (HA)
Oribi Gorge Nature Reserve	1950	1745,7
Skyline Nature Reserve	1986	17,1
Mbubazi Nature Reserve	1986	2022,9
Mehlomnyama Nature Reserve	1908	160,6
Umtamvuna Nature Reserve	1971	2653
Mpenjanti Nature Reserve	1985	94,9
Trafalgar Marine Reserve	1979	552

Source: Ugu Bio-diversity Sector Plan (2014)

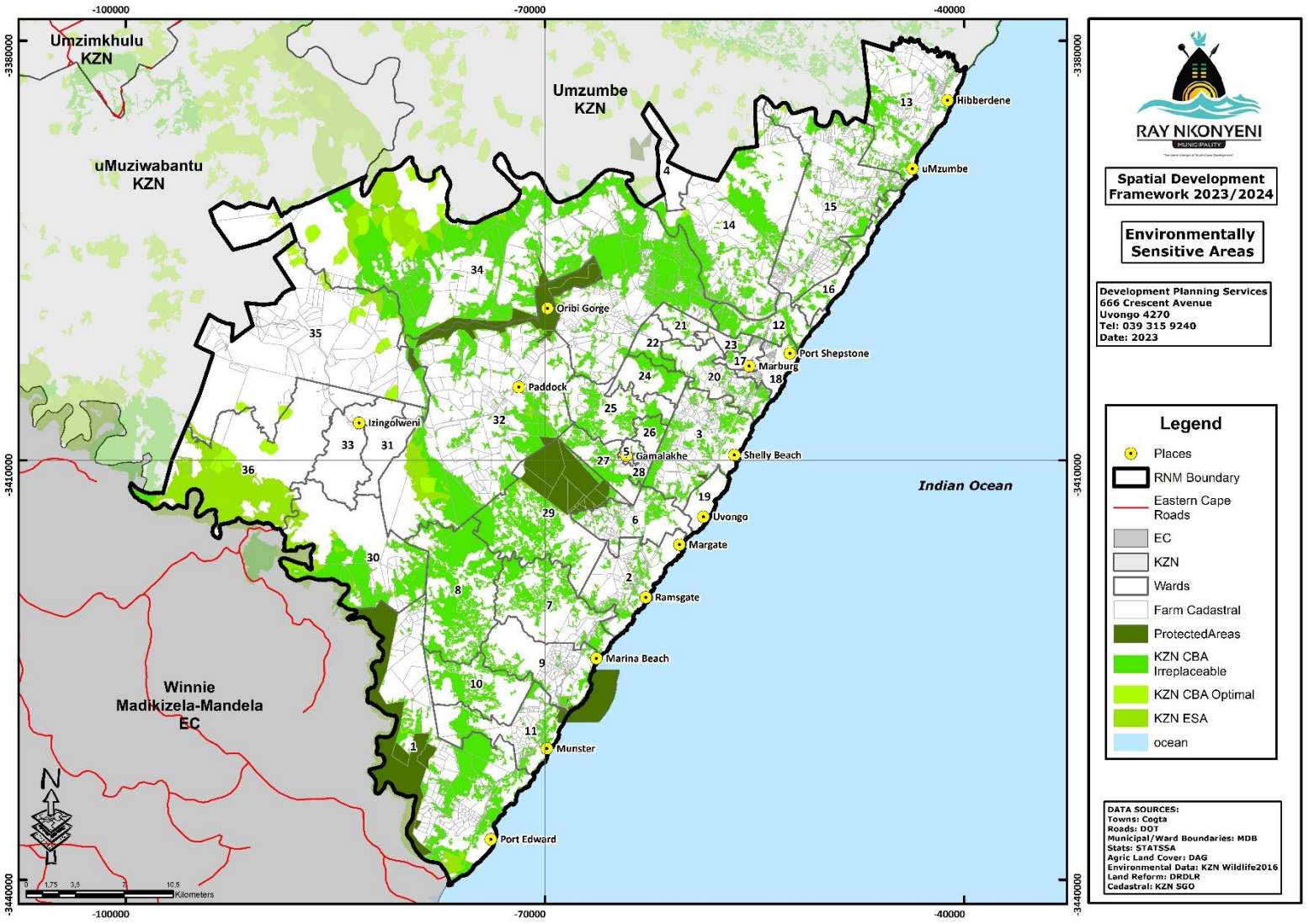
The Municipality has also environmental areas which are protected and under the stewardship programme. Such areas include the Red Dessert in Port Edward area and Rossmin which has a biodiversity agreement through the stewardship programme.

There are few Ecological Support Areas (or ESAs) which are found within Ray Nkonyeni Municipality. These play an important role in supporting the ecological functioning of critical biodiversity areas in delivering the ecosystem and buffering protected areas. ESAs include landscape, local ecological corridors that allow for connectivity along altitudinal gradients between the coast and inland, west-east corridors along the coastal belt. The aquatic ESAs within Ray Nkonyeni include the following:-

Table 37: Environmental Buffers

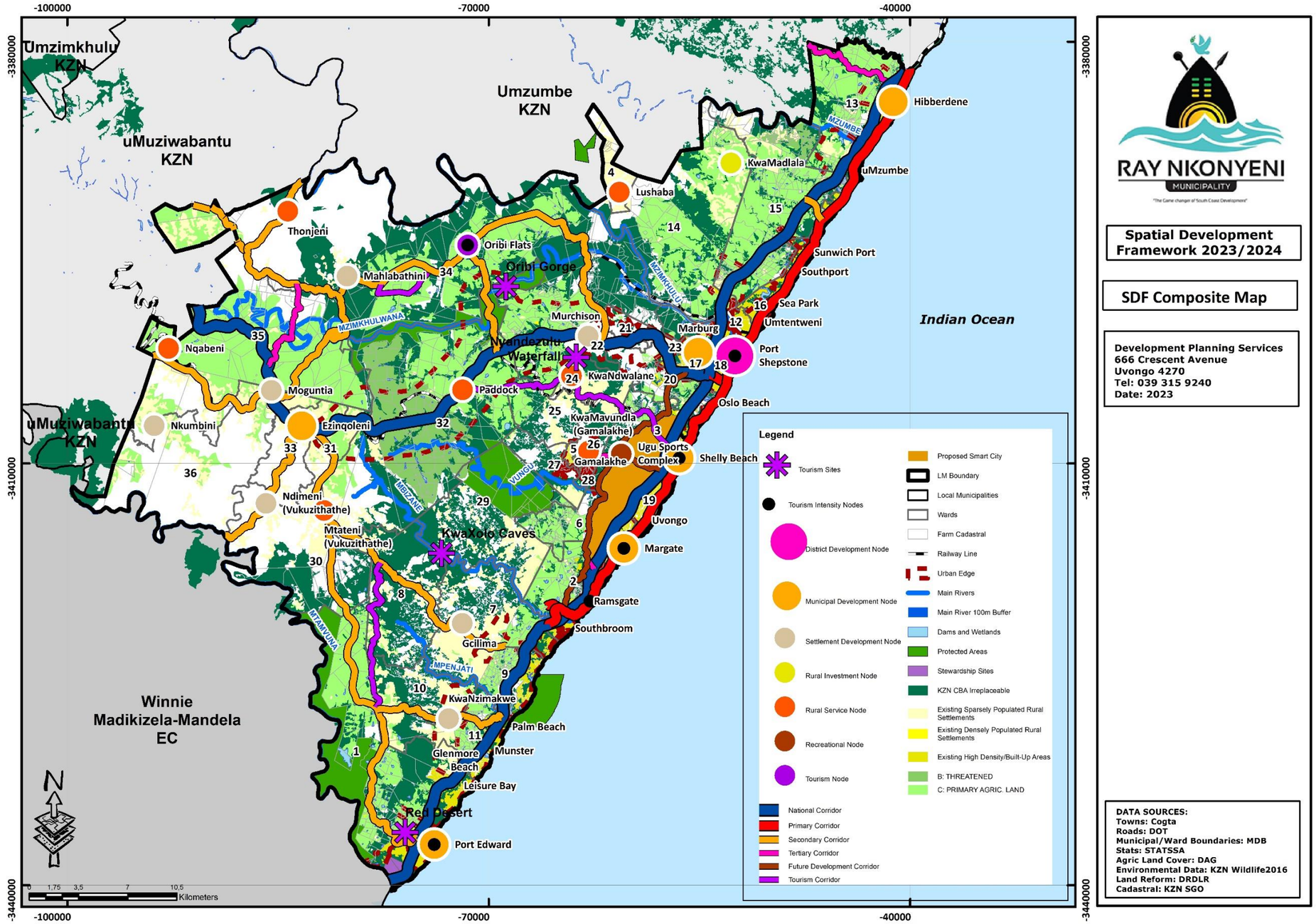
ECOLOGICAL SUPPORT AREAS	REQUIREMENT
Freshwater Systematic Conservation Assessment (FSCA) Wetlands	100m
CBA Perennial Rivers, KZN Flagship Rivers and National Flagship Rivers	70m
Non Perennial Rivers	70m
Freshwater Ecosystem Priority Areas (FEPA) Priority Wetlands and KZN Priority Wetlands	500m

Source: Ugu Bio-diversity Sector Plan (2014)



Map 31: Environmental Elements

Map 32: Ray Nkonyeni SDF Review 2023 - 2027

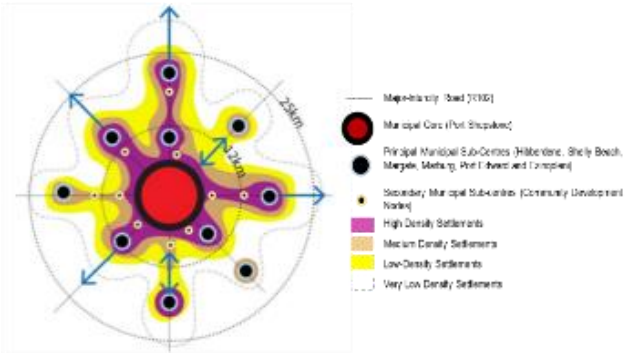


11.7. FUTURE DEVELOPMENT DIRECTION

11.7.1. COMPACT INTEGRATED DEVEVELOPMENT DIRECTION

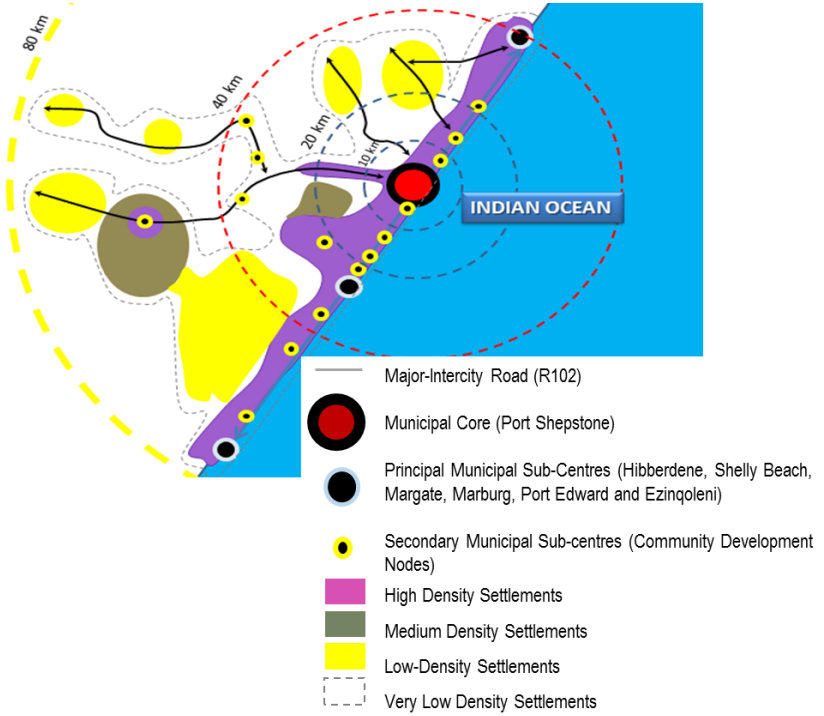
The spatial transformation vision of the SDF seeks to create a spatially just municipality based on a compact polycentric growth model. The model is based on an exercise testing three development scenarios, each hypothesising the growth of Ray Nkonyeni from 348 553 people today to 478 788 people by 2036. The first model tested describes a sprawled scenario with dispersed growth. The second describes a 'linear development' scenario where future development occurs along an expansive public transport network (corridor development) linking peripheral marginalised areas of the Municipality, through vast development corridors to the inner town. The third scenario is a compact polycentric model which concentrates growth in a compact urban core, around transformation areas and key urban and transit-oriented development nodes.

Figure 35: Polycentric Development Model



The compact polycentric development model performed significantly better than the other two in terms of economic, environmental and social indicators. Therefore, the spatial vision of the SDF is a compact polycentric Municipality. Here the inner town, Port Shepstone would form the strong urban core linked by efficient public transport to dense, mixed use (residential and commercial), sub-centres, situated within a protected and integrated natural environment. The development model above is a diagram of a traditional polycentric Municipality with a strong core, connected to economic sub centres by efficient public transport, with high housing densities surrounding cores and gradually lower densities further from cores (i.e. Rural Areas).

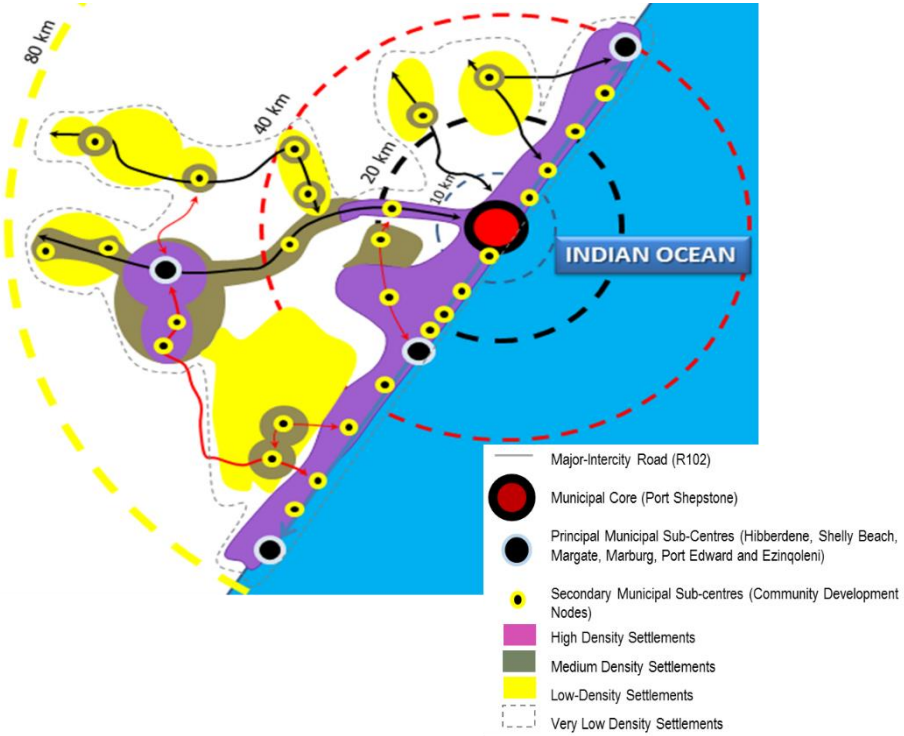
Figure 36: Current Reality in Ray Nkonyeni



Ray Nkonyeni presently displays the opposite of this polycentric urban model with separated land uses and people living far from work opportunities (Figure 36). The Port Shepstone core does not perform as the strong, structuring centre it should be.

High density residential areas (the 'rural settlements') are separated from urban economic centres and movement structures of the area. This pattern of development results in high intensities connected by effective public transport and a more logical and efficient density gradient radiating outward from cores. The nodal strategy and the transformation areas developed in this SDF present the hierarchy of nodes to be supported for intensification.

Figure 37: Future Spatial Form of Ray Nkonyeni



social, economic and environmental costs. This SDF thus proposes a shift to a more efficient and inclusive urban logic of compact polycentricity (Figure 3) with a focus on the CBD/ inner town as the core node of Ray Nkonyeni, surrounded by mixed use nodes of various

The future polycentric Ray Nkonyeni will bring jobs to residential areas and housing opportunities to job centres rather than merely transporting people between the two. It will create complete nodes where people can live work and play that are efficiently connected by public transport. It will bridge spatial and social barriers and build a framework for a spatially just municipal area.

11.7.2. DESIRABLE GROWTH PATH

The following proposal is made in terms of direction for future growth: -

- ✓ Outward expansion of the nodes. This should involves linking the existing nodes through activity or mobility route in a manner that promotes infill and interface development. This should be prioritized for District, Municipal and Community Development Nodes; and
- ✓ The existing nodes are still low in terms of densification. Inward densification could be encouraged within the District and Municipal Development Nodes. However, this should be supported provided that there is sufficient infrastructure capacity to warrant it.

11.7.3. UNDESIRABLE DIRECTION

The following proposal is made in terms of direction for future growth:

- ✓ Some of the nodes on the northern part of the municipality are surrounded by agricultural land. Expansion of these nodes to high potential agricultural land would be undesirable.
- ✓ Expansion of the nodes to environmentally sensitive areas is prohibited. This includes expansion to KZN CBA Irreplaceable zones and KZN ESA zones.

11.8. DEVELOPMENT GROWTH EDGES

The situational analysis has shown that the RNM population will increase in the next 25 years to approximately 478 788 at 1.6% growth rate. This will result in approximately 125 997 households. These projections depict high level of urbanisation which is expected to continue for the near future.

Given the increase in population growth prospects and the fact that this will result in urbanisation which may provide the only element to engineer spatial change, the process needs to be managed with great circumspection. Spatial growth recognises a number of important elements. The management of spatial growth is structured around the spatial containment of growth by strengthening nodes and improving selected networks as development corridors and activity spines.

There are two Edges that have been identified within Ray Nkonyeni Municipal Area. These cover the following areas:

- ✓ Coastal urban boundary; and
- ✓ Rural Settlement edges.

The administrative logic for the demarcation of this urban edge was mainly influenced by the *Provincial Spatial Planning Guideline 5: Defining Limits on Settlement Expansion: The issue of the Urban Edge* produced in July 2009. These guidelines state that:

There is no 'scientific' way of defining these containment edges: they require strong administrative actions to defend them. A number of factors contribute to the delineation which are characteristics of the natural environment (natural barriers such as water courses, steep slopes, vegetation of significance and so on), central purpose of these edges is to compact urban development in order to achieve greater urban efficiencies (an effective edge should be as close to the existing built-up area as possible), should not follow existing cadastral boundaries (strong straight geometric edge not wavy lines) and should be reinforced through the creation of fire-breaks and more intensive forms of agriculture which should be encouraged to occur hard against the edge. Suburban and leap-frog' sprawl should be discouraged. As far as is possible, new development should be contiguous with the existing built edge. (Department of Co-operative Government and Traditional Affairs: 2009, p8-10).

The proposed urban edges have incorporated the existing built up areas which are mostly covered by the Urban Planning Schemes of the Municipality. These edges have also incorporated important land parcels that will act the role for infill development requirements and expansion of existing urban areas. The important environmental management areas have also been incorporated for proper management against urban conurbation.

The Department of Rural Development and Land Reform has further refined this study by suggesting the following primary factors when demarcating the urban edges:

- ✓ Growth pressures;
- ✓ Potential for growth deflection;
- ✓ Densification;
- ✓ Protection of high agricultural land;
- ✓ Infrastructure capacity; and
- ✓ Fiscal capacity and fiscal strength.

The secondary factors when demarcating the urban edge are identified as follows:

- ✓ Land monopolies within the potential urban growth boundary;
- ✓ Fractured ownership pattern outside the potential urban growth boundary; and
- ✓ Deferred areas outside the urban growth boundary.

A settlement edge by virtue of its purpose should include only enough land to accommodate realistic growth expectations for the short term. The settlement edge can always be expanded but once set and development is taking place, it is practically impossible to shrink the boundaries thereof.

The determination of a settlement edge is highly influenced by the following fundamental factors: -

- Major Rivers and their floodlines demarcation
- Steep land;
- Green Areas viz. Formal Conservation Areas, Areas of biodiversity for Protection
- High Quality Soils to protect Food Resources/ high agricultural potential area

The tertiary factor is institutional capacity. It is acknowledged that managing growth requires sophisticated governing structures, policies and procedures. The capacity to monitor land and demands as well as produce plans that combines infrastructure planning with urban spatial planning requires a great of institutional sophistication.

11.9. FUTURE RAY NKONYENI SMART CITY DEVELOPMENT CONCEPT

Ray Nkonyeni Municipality has embarked on a journey of developing a Smart City which can be defined as a "city that is high-tech intensive and advanced, connecting people, and information and city elements using new technologies in order to create a competitive and innovative city. It takes a holistic approach to employing information technologies with real-time analysis that encourages sustainable economic development".

11.9.1. FUTURE DEVELOPMENT CONCEPT

Proposed zones have been identified along R61 and P200 (Along transportation routes) and a concept has been developed based on the following guiding principles:

- **Corridor Development**
  - Associated with a system of transport facilities on key routes that work together as an integrated system to facilitate ease of movement.
  - However, not all regional routes are the same in terms of the intensity of use and ability to attract investment, services, economic activities and settlement.
  - Generally, larger routes linking generators of movement and investment have a greater generative capacity than smaller routes. It thus follows that regional facilities and services should gravitate towards these areas.
- **Integration of Built-Form and Open Spaces**
  - The intention with the built environment should be the creation of large continuous precincts of built form, rather than it is occurring in spatially discreet pockets or cells. This is necessary to obtain economies of agglomeration. At places, the continuity of the fabric should be systematically broken so as to ensure equitable access to green spaces and other opportunities.
  - Ray Nkonyeni Municipality comprises of rivers, wetlands, agricultural farms and nature reserves that need to be protected and preserved. Land development within the municipality will be undertaken in an economically, socially and environmentally sustainable manner.
- **Tourism**
  - The municipality is known for its tourism assets, there is scope for better utilization of opportunities. This will have to take place bearing in mind that such development is not detrimental to the natural environment. Tourism activities should be in accordance with the image of the tourism features of the municipality.
- **Promoting Sustainable Human Settlements**
  - There is the need to rationalize housing typologies in accessible locations (i.e. in proximity to social amenities, jobs and transportation networks. Therefore the proposed housing is middle to high income residential.
- **Technology Hub**
  - RNM has established a technology hub. Technology hubs also known as science parks and seen as support structures and enablers of knowledge economies which allow alignment of innovation efforts between industry, academia and government, thus creating a strong and vibrant regional innovation system.

11.9.2. PROPOSED ZONES FOR RNM SMART CITY

ZONE	FUTURE PROPOSAL AREAS
Medium Impact Mixed Use (MM) Zones – Zone which sets aside land along major transport and communications corridors for the full range of retail, offices, service and light industrial, residential and community facilities and excluding noxious and general industry.	Paddock along the N2 Munster
Education (CE) Zones – A zone which allows for the development of all educational facilities.	Izotsha and Umtentweni off ramp
A residential estate and small holding zone sets aside land for housing and related urban-scale agriculture where the number and magnitude of ancillary land use types are limited to provide for local every day employment and service needs	Izotsha, Shelly Beach
Low Impact Industry (IL) Zones – This zone defines opportunities to interface low impact industries in relation to residential areas to facilitate local economic development and employment opportunities and can also be used as a buffer or interface with other industrial zones. This zone will accommodate a mix of light and service industry and warehousing.	Marburg and Paddock (Industrial) Ramsgate off ramp and Port Edward (Logistics)
Public garage: This zone is intended to provide for the continued use, enhancement, and new development of Public Garages where vehicle servicing, fuelling or washing and cleaning of vehicles occurs.	Umzumbe and Ramsgate off ramp
Agriculture Zones is to provide for agricultural land uses and to insure that this development occurs in a manner which protects the area's natural and topographic character and identity, environmental sensitivities, aesthetic qualities, and the public health, safety, and general welfare	Along P200 near Sweetdale
Suburban Office Zones – provide for office development as the primary developmental focus in suburban and peripheral locations, adjacent to shopping centres or a mixed-use core, or as independent zones.	Along Izotsha Road
Place of Public Amusement – A building or land used for public entertainment.	Gamalakhe

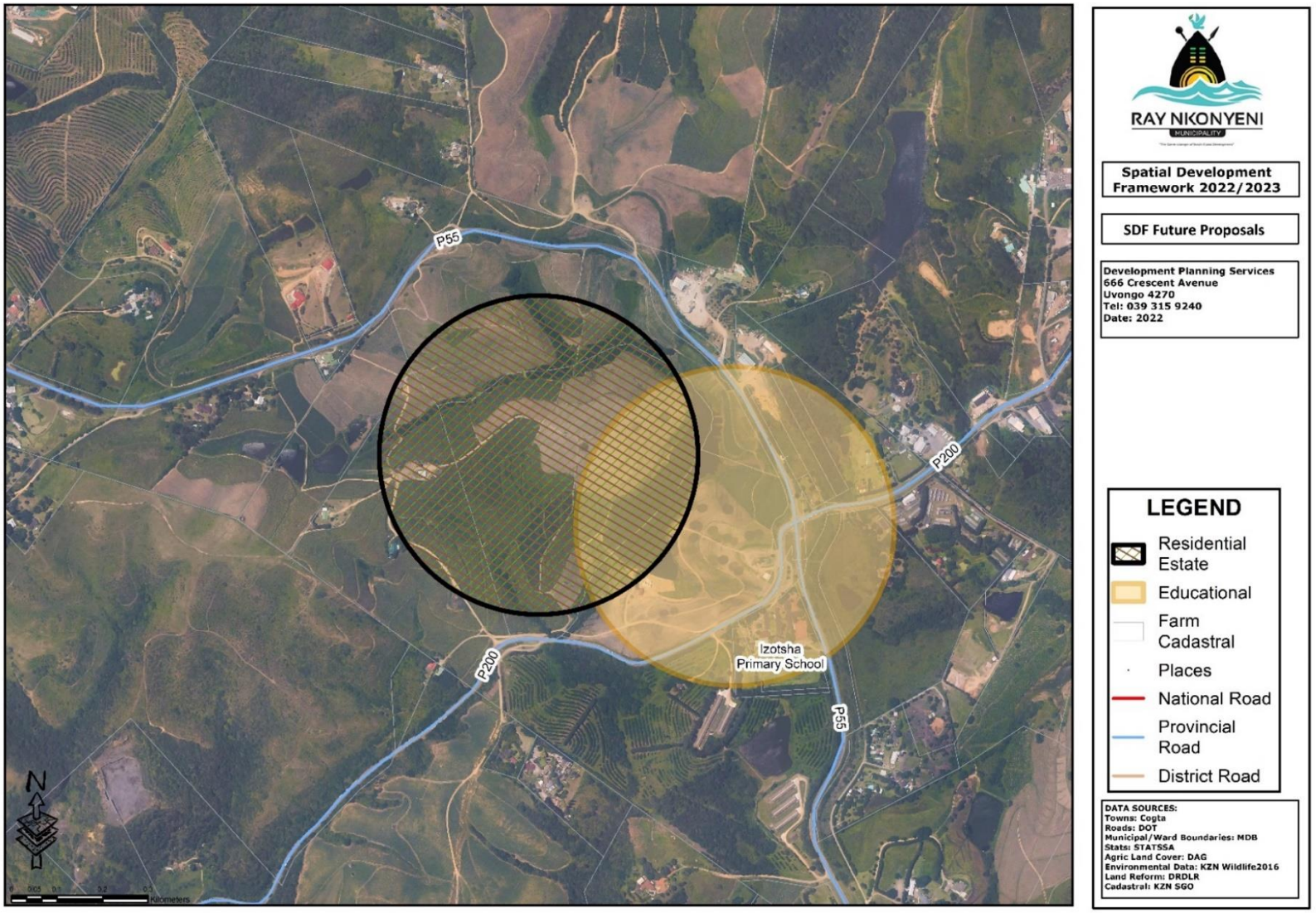


Figure 38: Izotsha Potential Sites

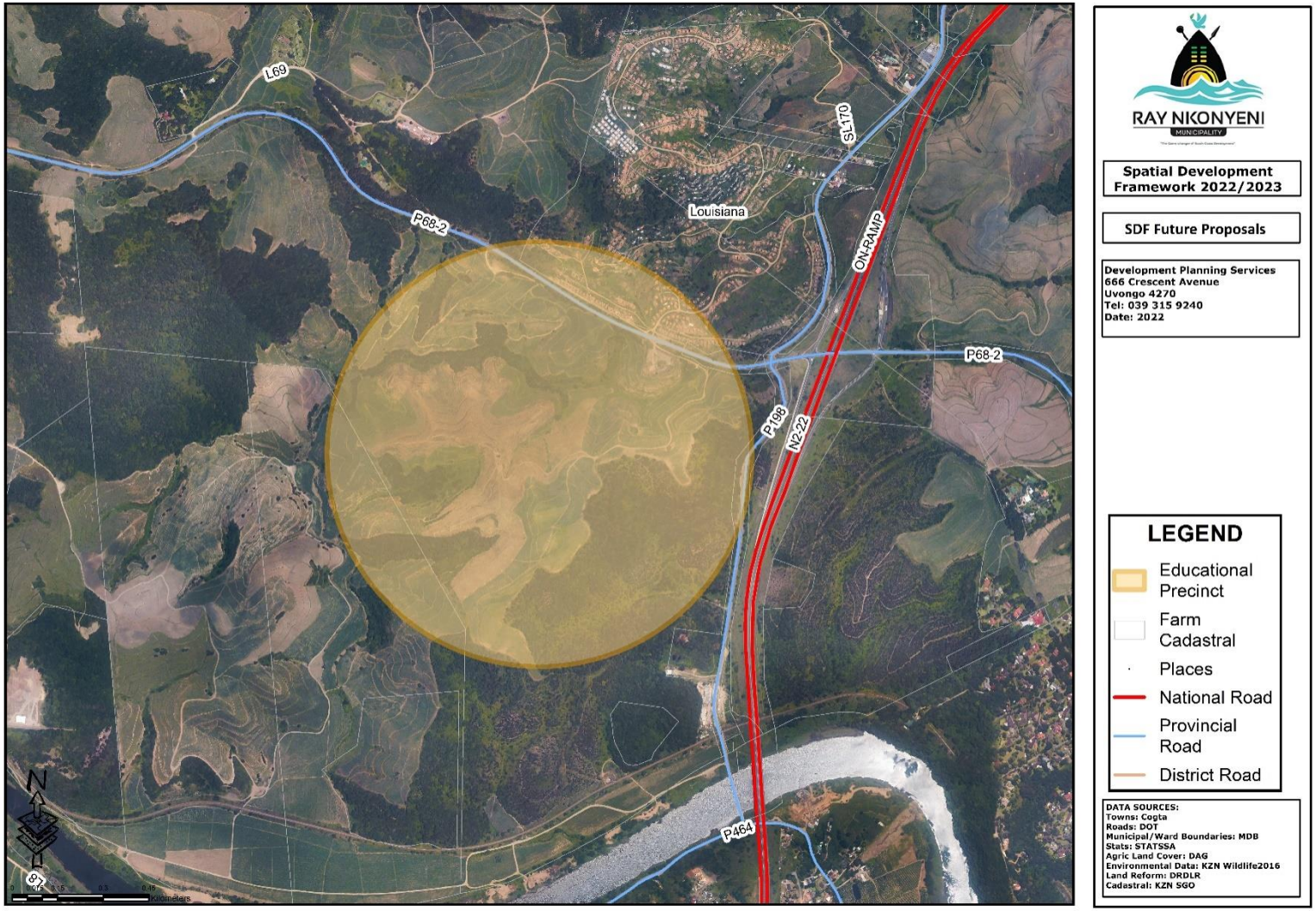


Figure 39: Umtentweni Off-ramp Potential Site

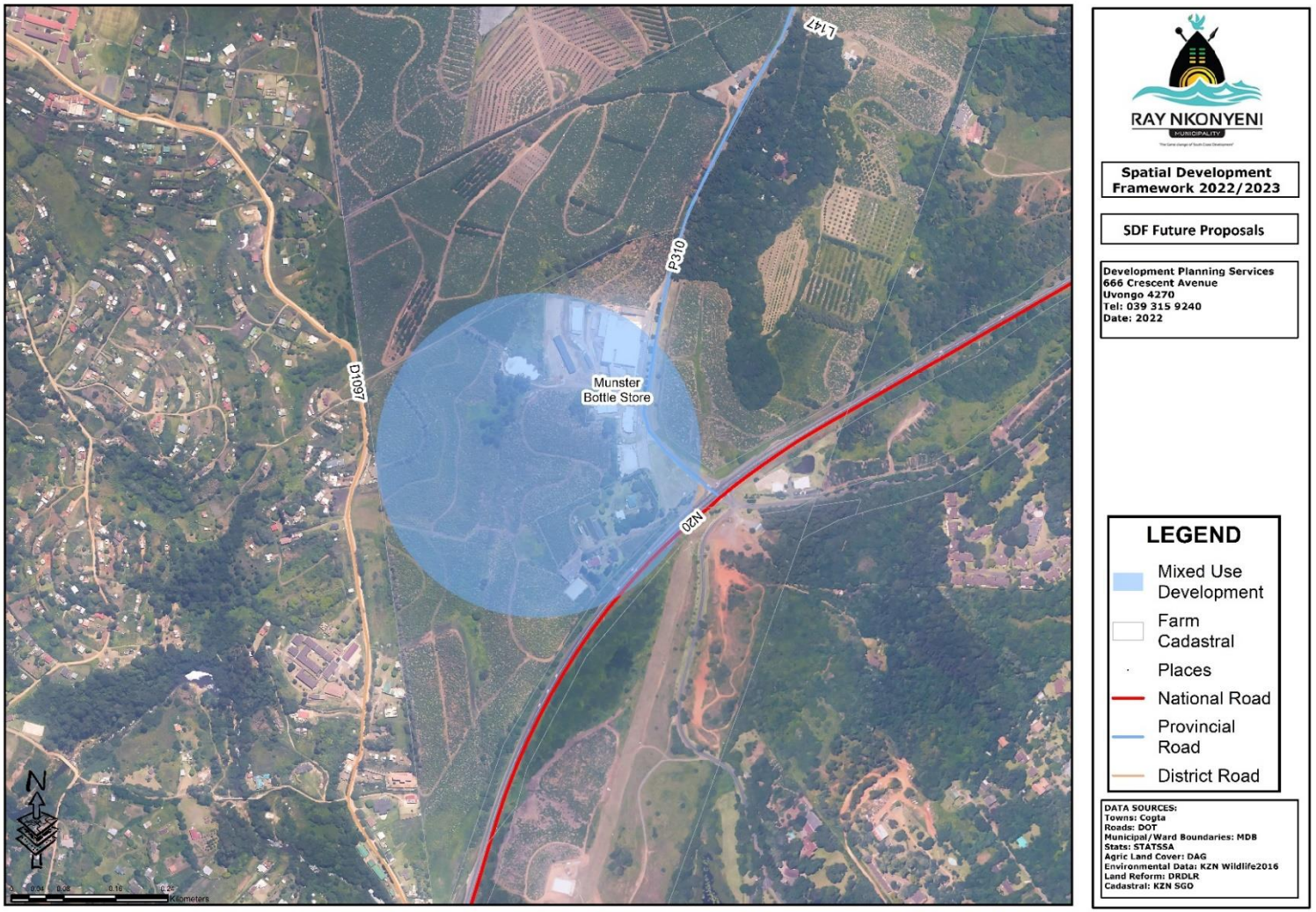


Figure 40: Munster Potential Site

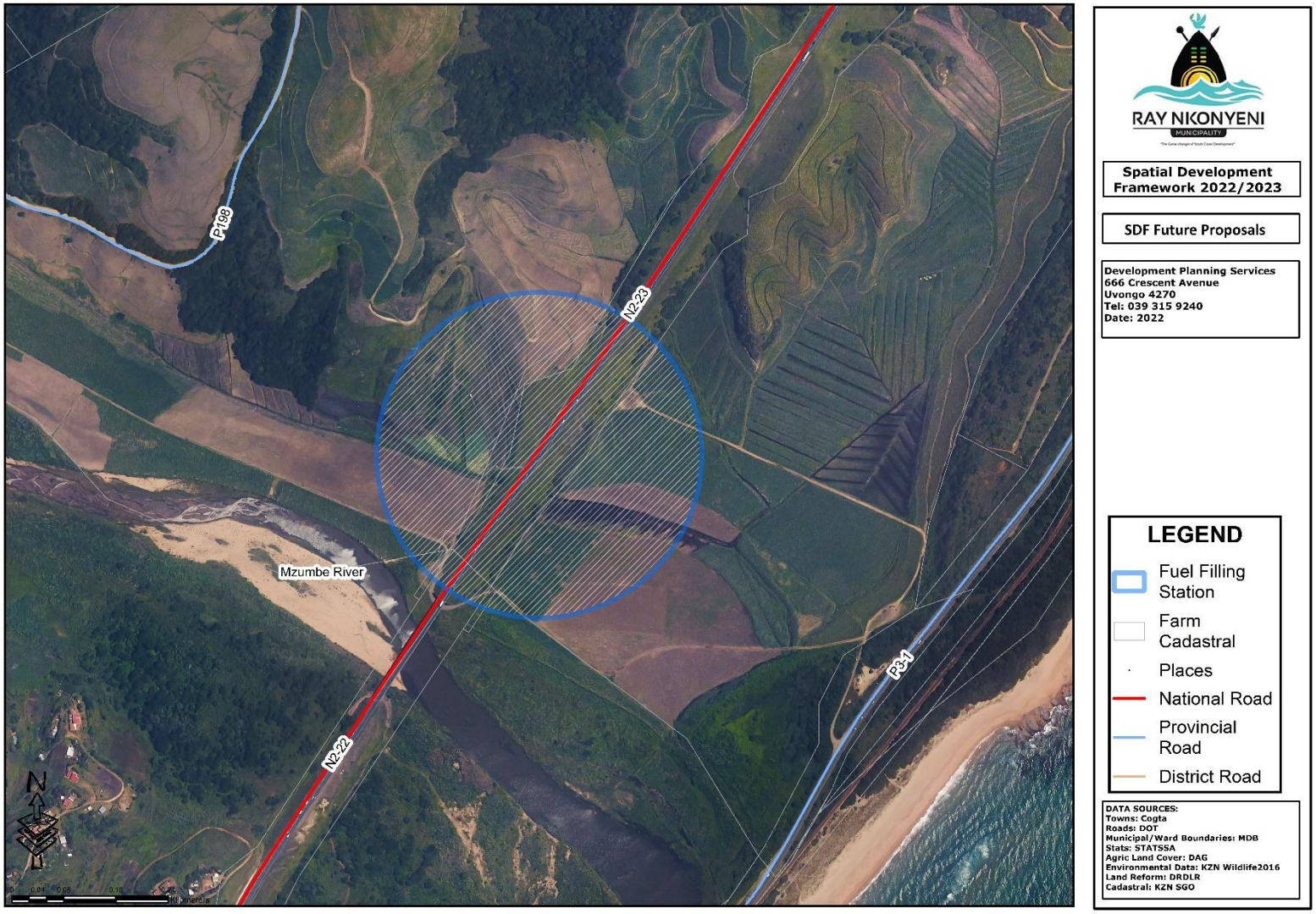


Figure 41: Entaba (Umzumbe) River Potential Site

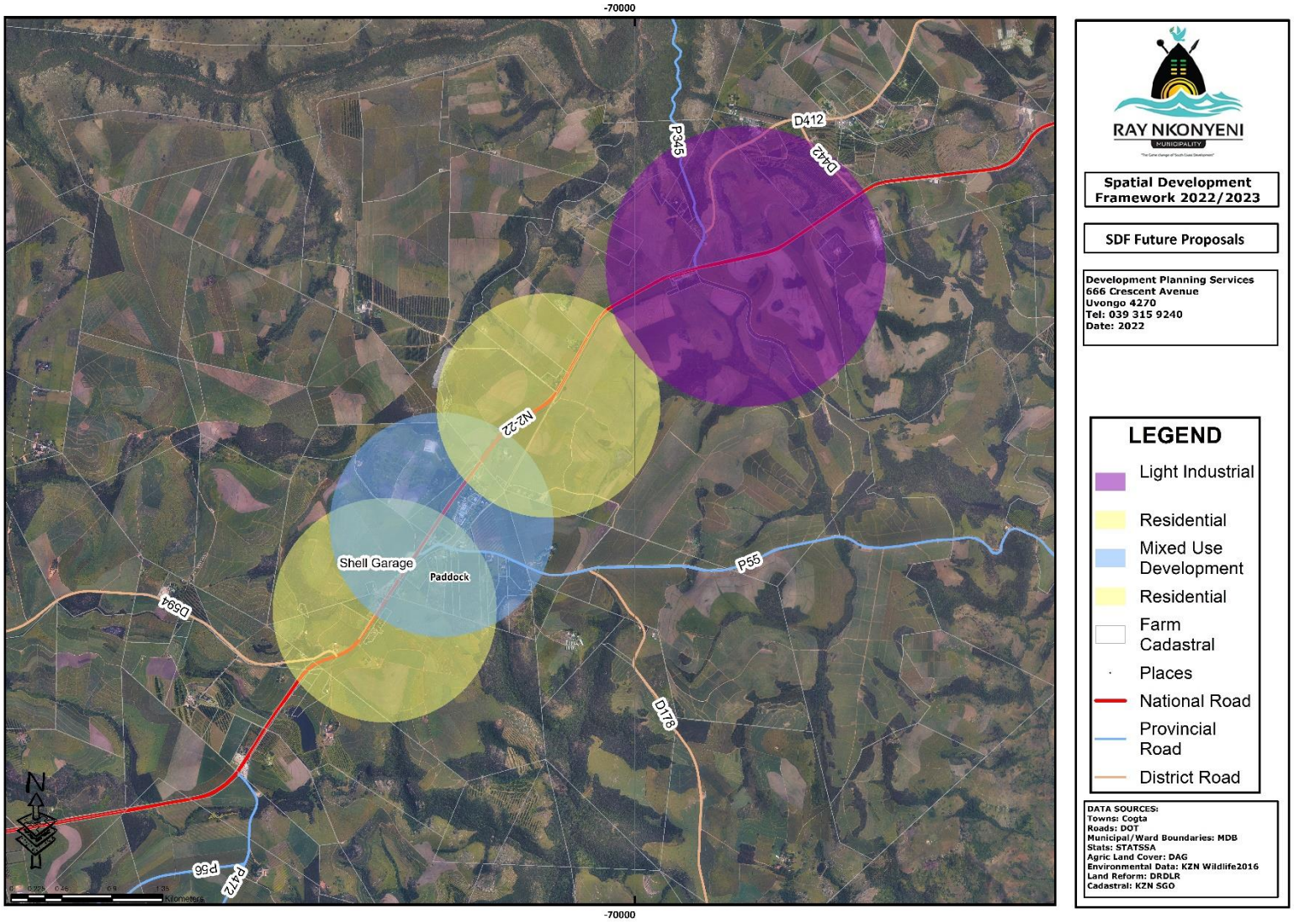


Figure 42: Paddock Potential sites

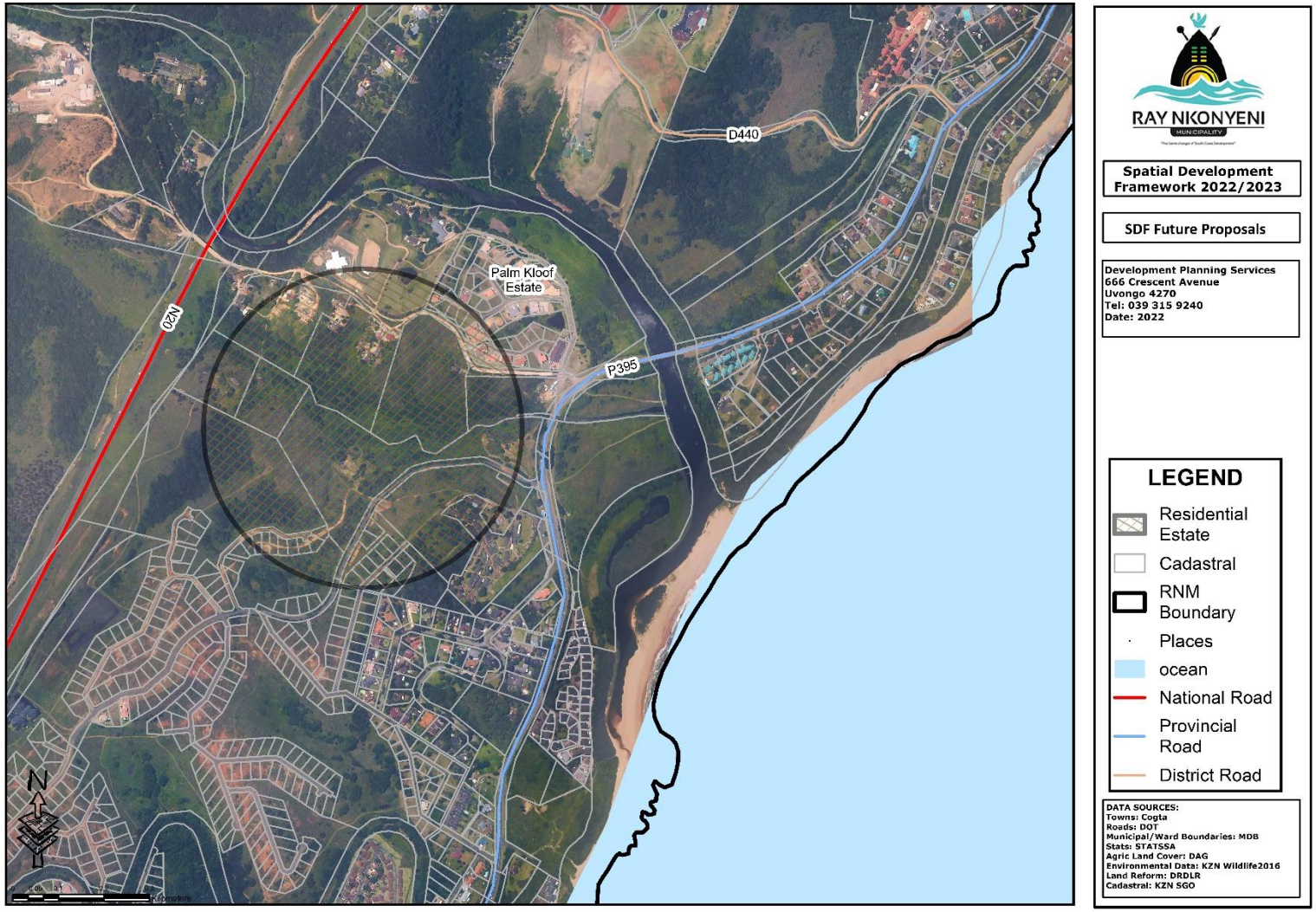


Figure 43: Shelly Beach Potential Site

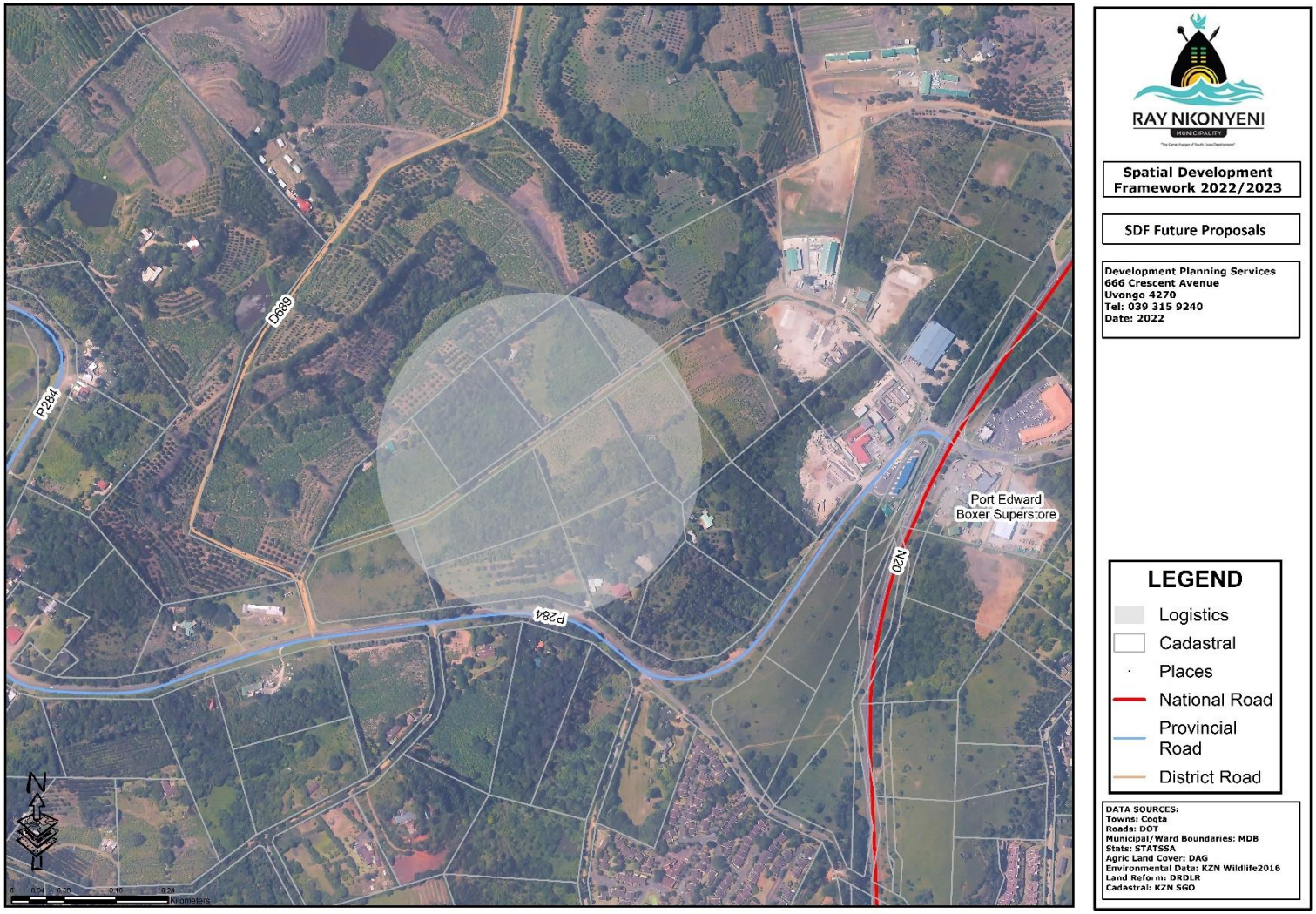


Figure 44: Port Edward Potential Site

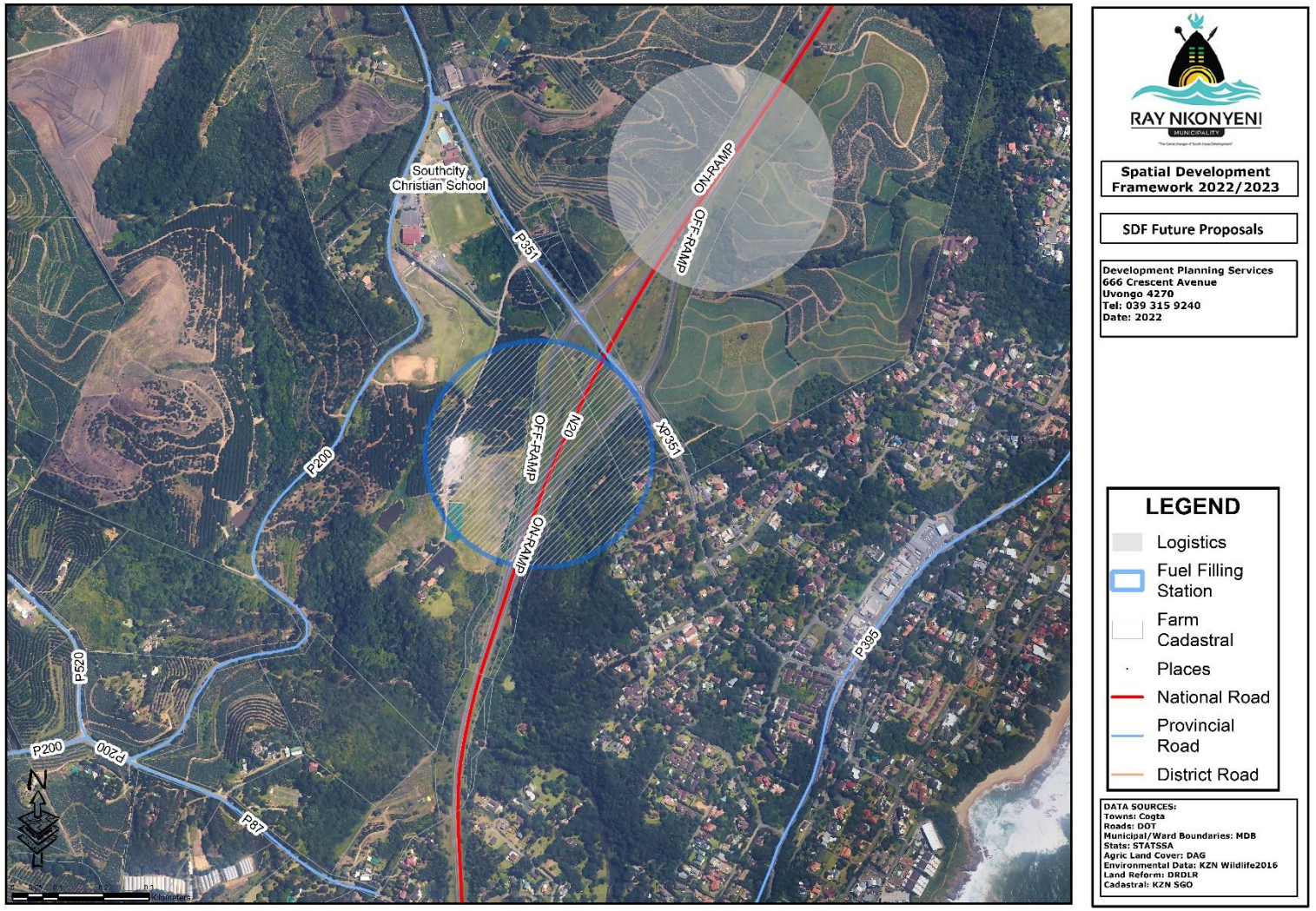


Figure 45: Ramsgate Off ramp Potential Sites

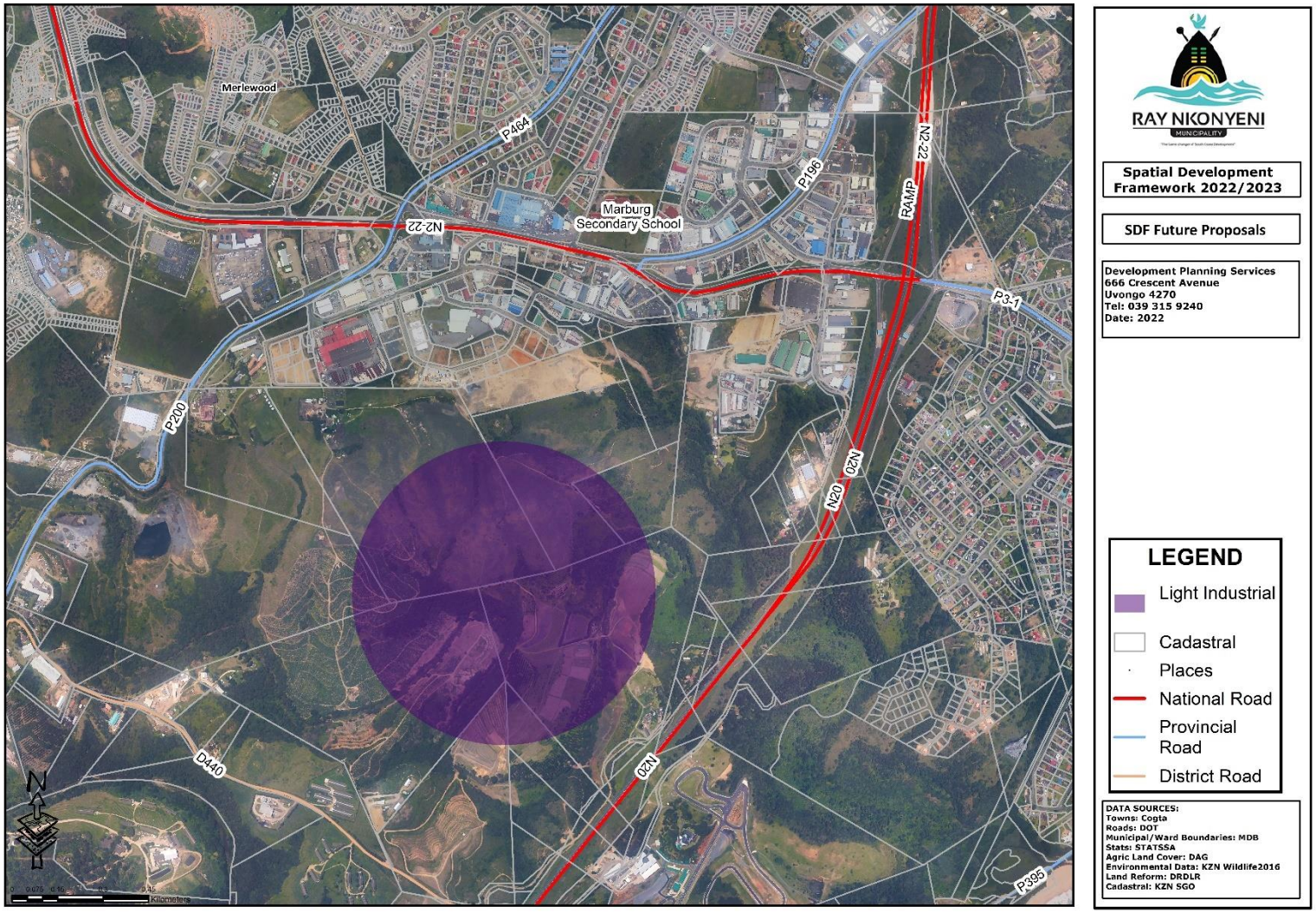


Figure 46: Marburg Potential Site

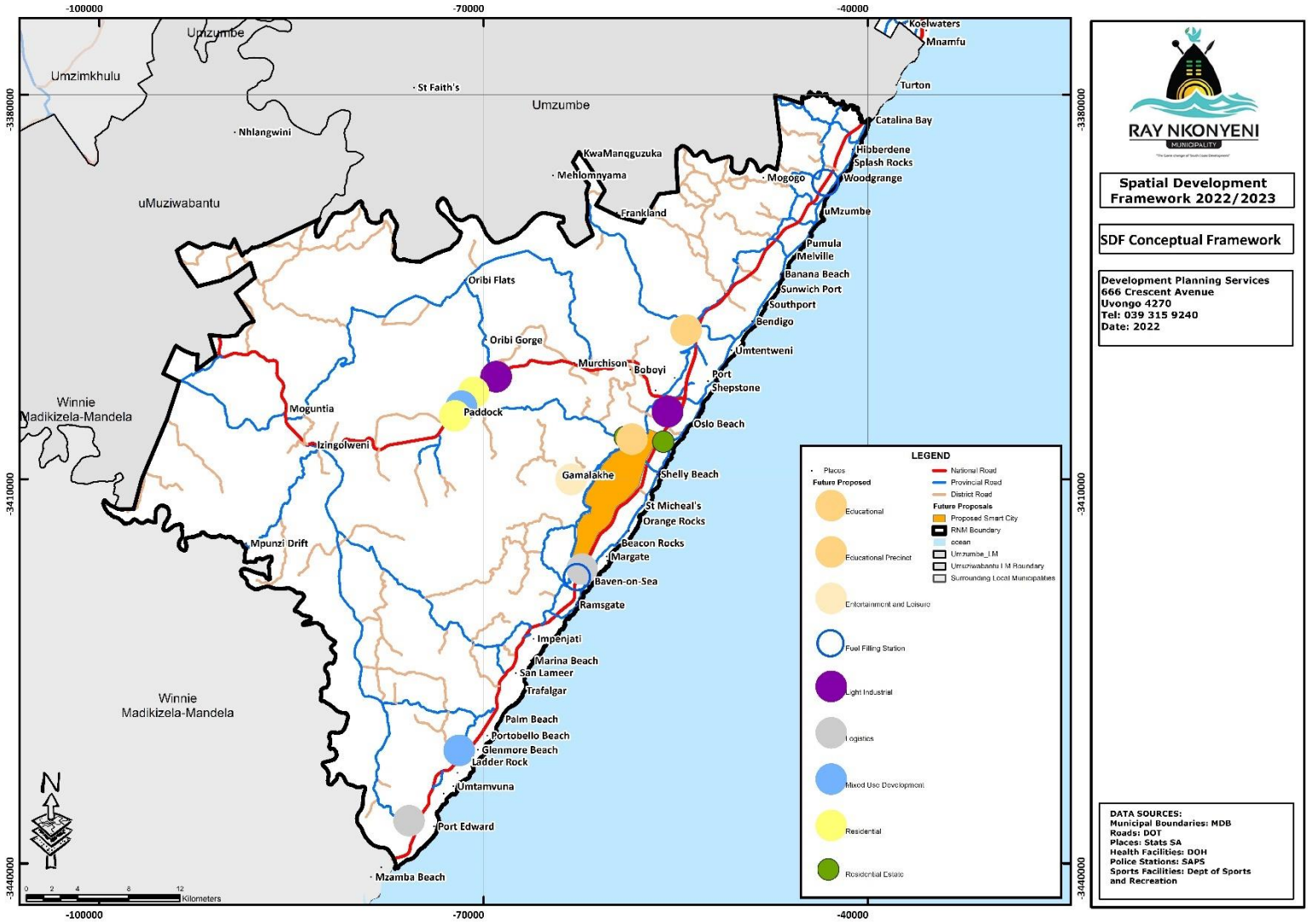


Figure 47: Proposed Future Zones

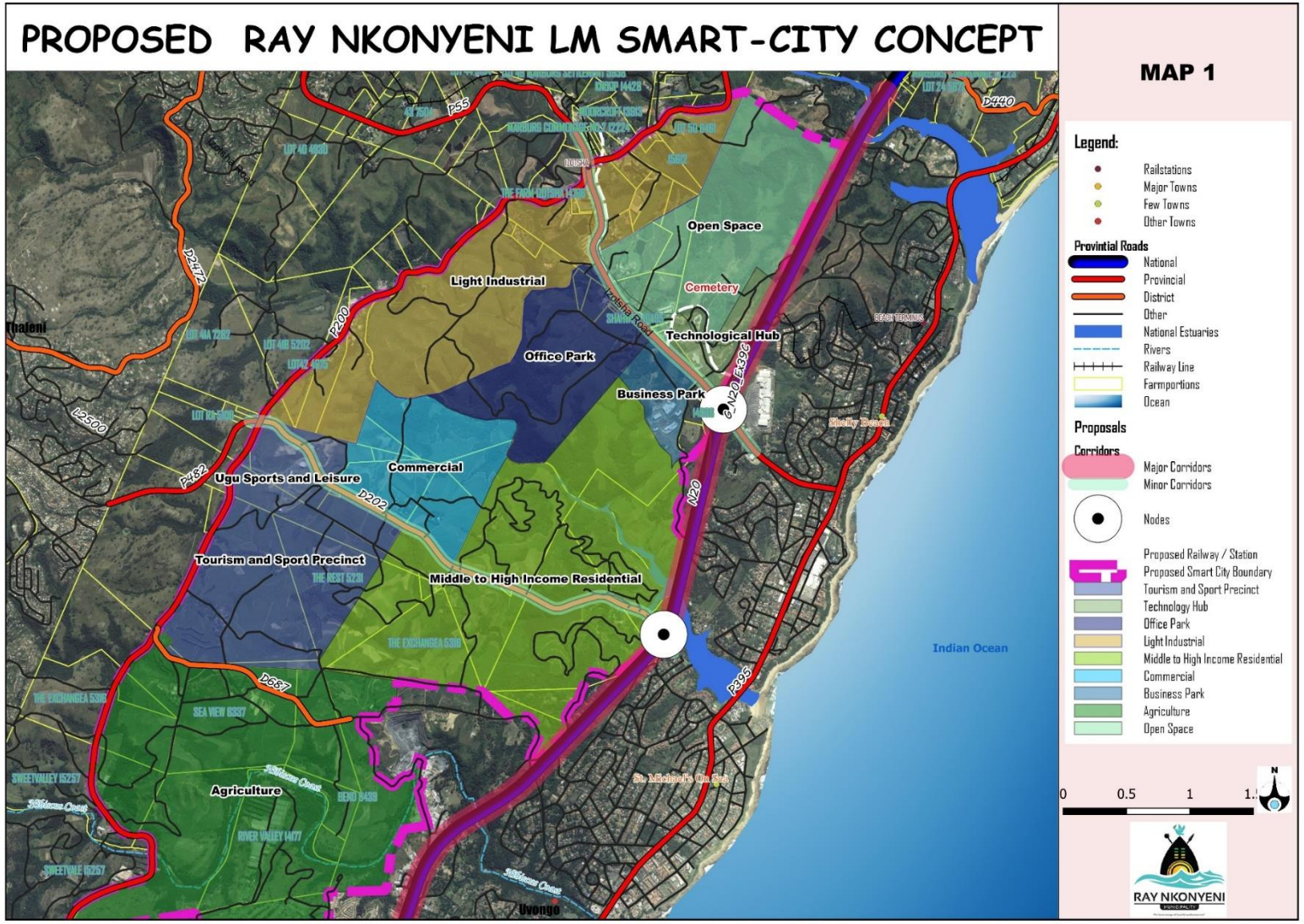


Figure 48: Proposed RNM Smart City Concept

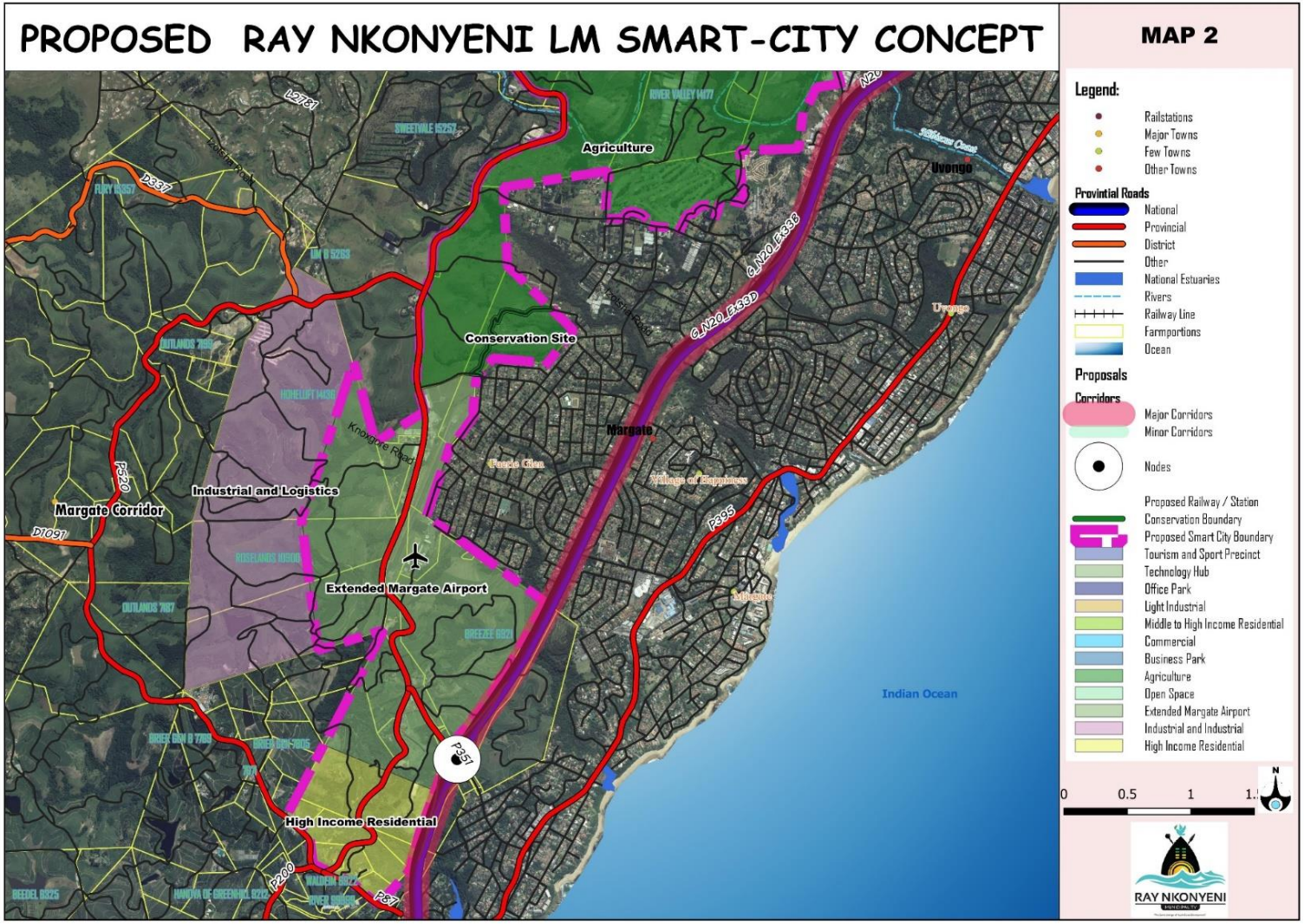


Figure 49: Proposed RNM Smart City Concept

11.10. PROPOSED PORT SHEPSTONE PRECINCT PLAN

Port Shepstone was selected through a thorough prioritisation process as KZN's first small town to be targeted for planning and investment support in terms of the Small Town Regeneration Programme. To this effect, Ray Nkonyeni Municipality (RNM) has received an allocation from National Treasury under the Neighbourhood Development Partnership Grant (NDPG) for the implementation of the Programme in Port Shepstone. The overall concept has been refined into an overall investment plan for the study area, with specific projects and interventions aimed at realising the concept.

The key investment responses are mostly government-led, based on the analysis of the potential of the private sector market in the profiling of the study area. The government investment in the study area should lay the foundation for the future development of the study area to fulfil a more prominent role in the region. The key investment responses are summarised as follows:

A- Development of the Intermodal Transport Facility and Government Precinct, complemented by higher density social housing around these facilities. This includes the extension of roads and provision of additional private parking facilities.

B- Development of commercial nodes, extended parking and upgraded ablution facilities along the beach front, with a focus on the lighthouse area and the Stages Restaurant / Transnet Land area at the main swimming beach.

C- Study area-wide upgrades, extensions and changes to the internal movement network. The main interventions are the extension of Reynolds St to the beach, upgrading of Nelson Mandela Dr, Robinson St and Dick King Dr, as well as connecting the lighthouse area with Sugar Mill Rd. Provision is also made for additional smaller transport stops for minibus taxis, metered taxis and private long distance bus services.

D- Upgrade of Settlers Park including small commercial facilities.

E- Incentive areas for private sector residential infill and densification, which may be part of mixed use developments.

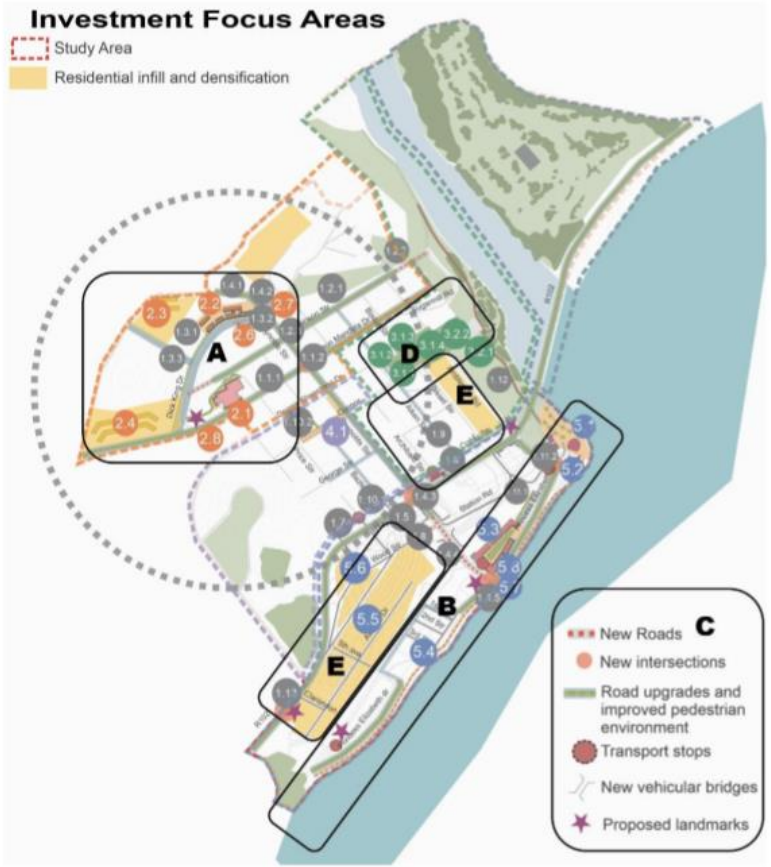


Figure 50: Investment Focus Area

11.11. DENSIFICATION

Densification is a spatial structuring tool that can positively contribute to sustainable urban growth, should it be applied accordingly. Densification is broadly defined as 'the increased use of space, both horizontally and vertically, within existing areas/properties and new developments, accompanied by an increased number of units and/or population threshold'. Incremental densification, in turn, denotes the following:

- ✓ Small-scale densification that has a relatively low impact on the character of an area, e.g. the subdivision of a residential property or construction of a second dwelling; and
- ✓ Densification is not an end in itself, but a means of improving the sustainability of the city as well as the vitality of urban precincts. It is a relative indicator of the intensity of development and the population thresholds that could support economic activity, public transport services and the like.

Densification can contribute to the creation of good-quality, efficient and sustainable urban environments in a number of ways, including the following: -

- ✓ Densification reduces the consumption of valuable/non-renewable resources.
- ✓ By encouraging development upwards rather than outwards, densification helps reduce the consumption of valuable resources such as agricultural land, areas of mineral potential, aquifer recharge areas and valuable biodiversity areas. It can also reduce the consumption of non-renewable fuels by lessening car dependence.
- ✓ Densification supports the development of a viable public transport system.
- ✓ Higher densities, accompanied by increased population thresholds and mixed-use development, support the efficient functioning and viable provision of public transport services, especially on major line-haul routes for mass and rapid transit.
- ✓ Higher densities in appropriate locations, especially those close to urban opportunities (services, facilities, jobs) and public transport, help rationalize the housing pattern in the city, also improve access to the city's amenities and facilities. They help reduce travel distances and times, as well as the associated costs.

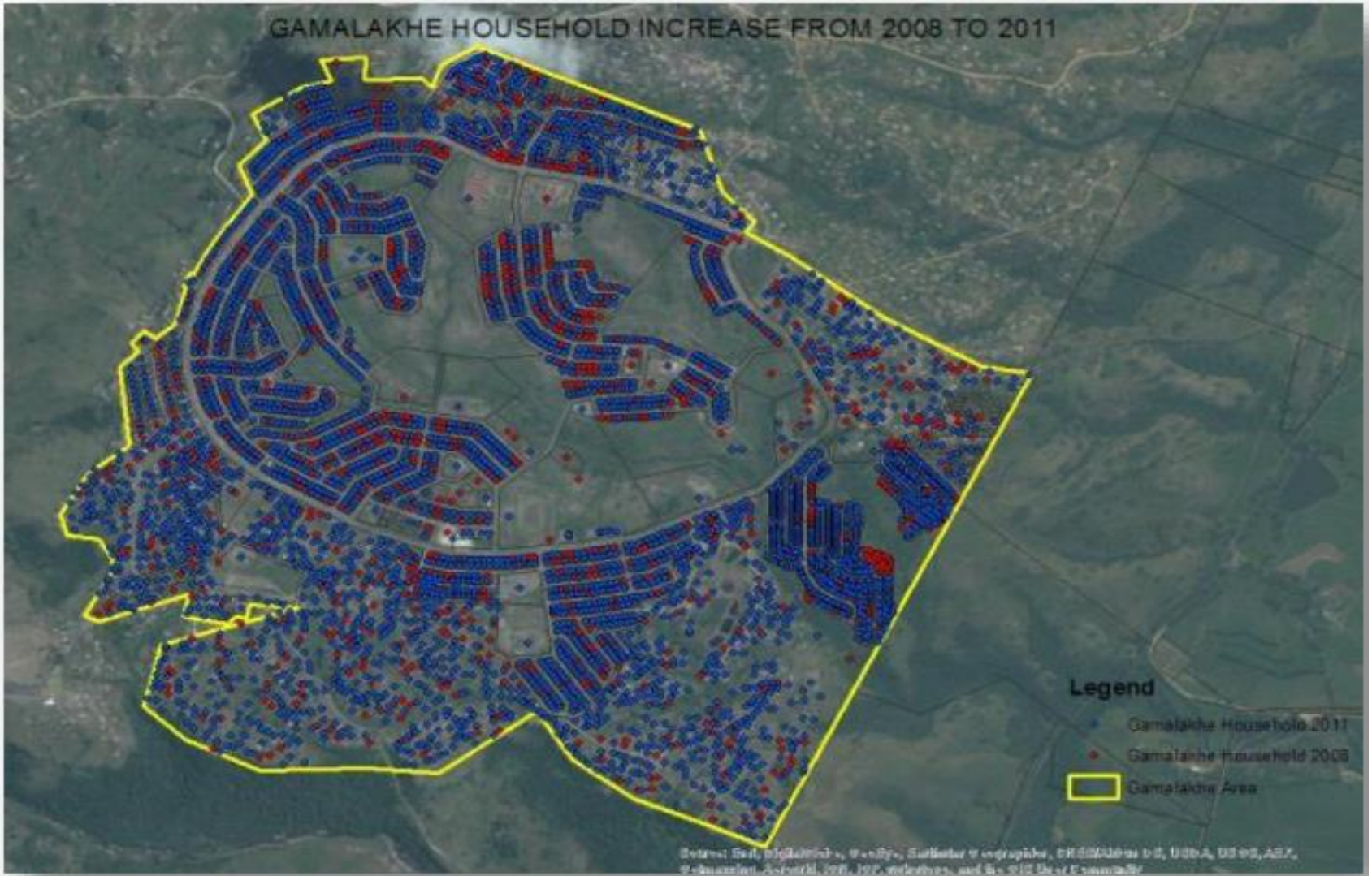
Higher densities, accompanied by increased population thresholds, create sufficient consumers to generate the development of economic opportunities, social facilities and services, it also enable the cost-effective provision and optimal use of infrastructure; especially where there is excess service capacity or where increased thresholds are required to provide services and infrastructure.

- ✓ Densification improves housing patterns and choice of house type;
- ✓ Densification contributes to urban place-making and improves safety;
- ✓ Appropriately designed and located higher densities (in terms of form, scale, height, orientation) can provide an opportunity for place-making, the creation of attractive and safe urban environments, particularly those in proximity to public spaces (both natural and built).

11.11.1. GAMALAKHE DENSIFICATION MONITORING

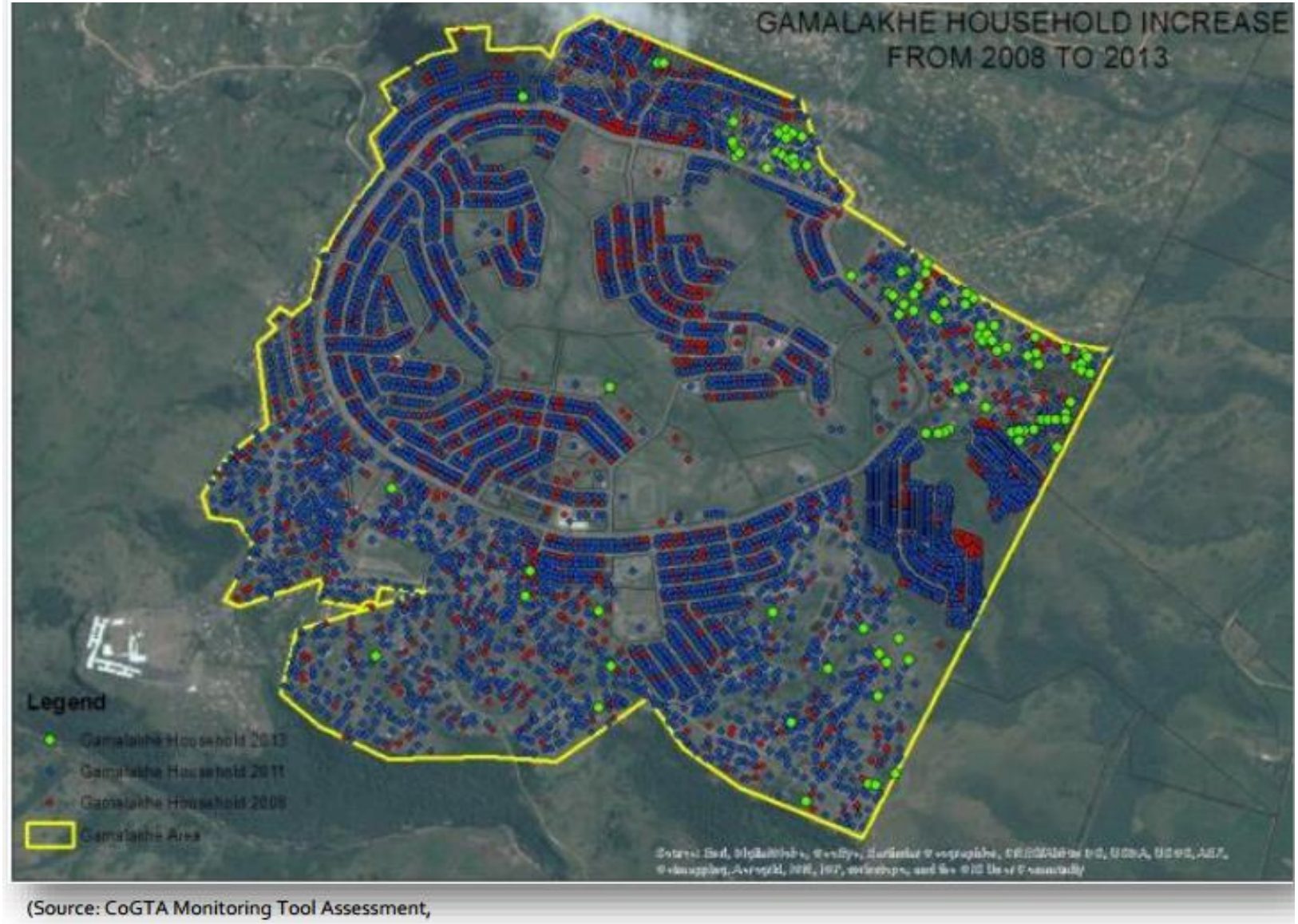
Gamalakhe Township was used as an example for the use of densification monitoring tool. This involved mapping and showing household increase between 2008 and 2011. The proposed areas identified are 614 Hectares. The household density increased from 1.05du/ha in 2008 to 5.37du/ha in 2011.

Figure 51: Gamalakhe Density 2008-2011



(Source: CoGTA Monitoring Tool Assessment, 2015)

Figure 52: Gamalakhe LAP 2008-2013



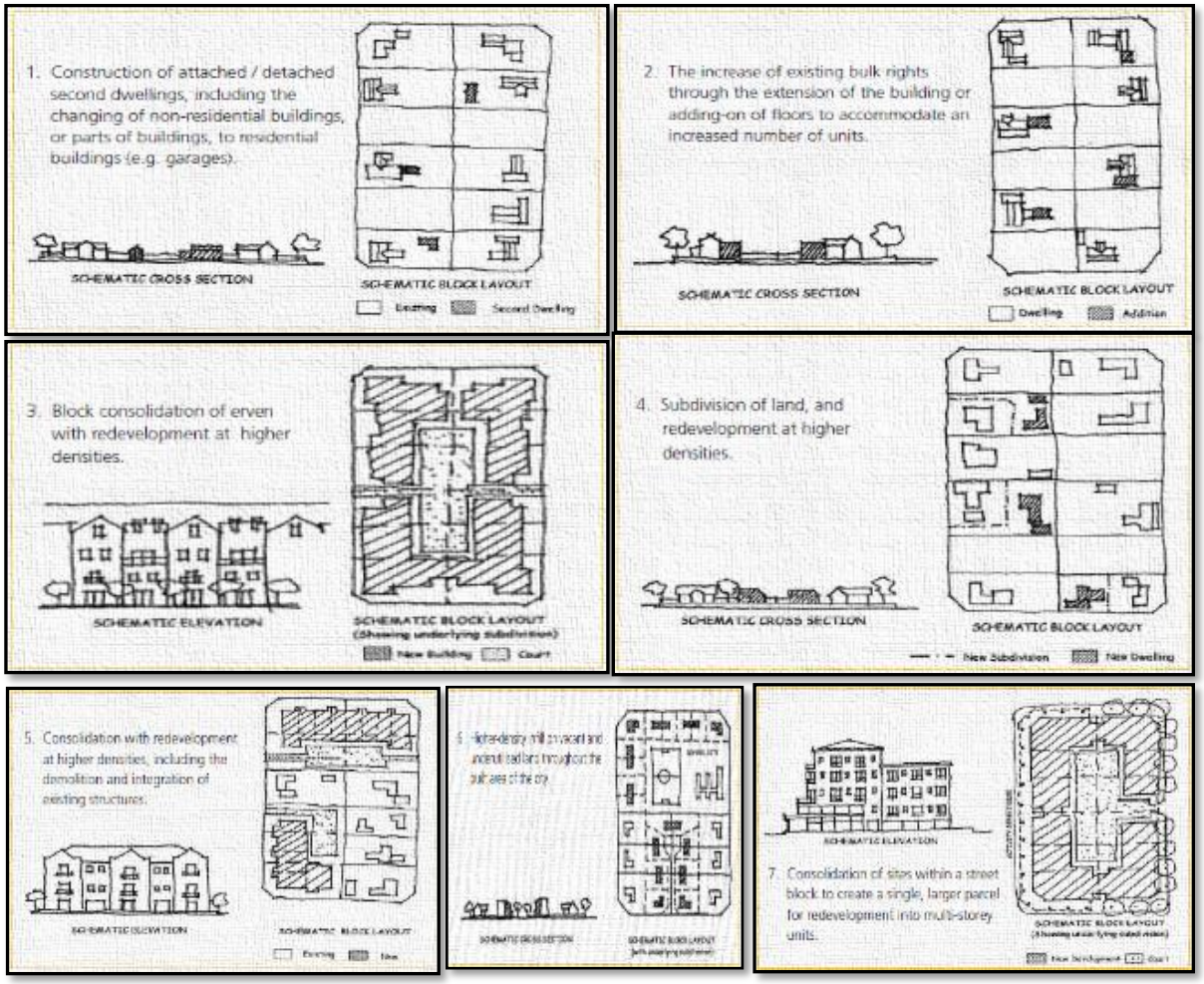
(Source: CoGTA Monitoring Tool Assessment,

11.11.2. DENSIFICATION MODELS

The key elements of densification are the promotion of compact, integrated and efficient urban form. This can be attained by limiting urban sprawl, by promoting higher densities, infill, re-development in and around the urban core and other activity nodes also by the promotion of mixed-use activity corridors linking otherwise isolated and non-functional areas with a focus of public transport. Vacant land within the central area provides infill opportunities to make use of existing services and to strengthen internal development. Vacant land beyond the central area provides opportunities for linking and integrating peripheral areas. The different methods for achieving densification can occur through: -

- ✓ Conversion of existing building (sometimes vacant/derelict) to other uses;
- ✓ Subdivision of large pieces of land to encourage higher densities;
- ✓ Cluster development on large parcels of land through a consolidation process;
- ✓ New development on vacant or under-utilized land at higher densities;
- ✓ Allowing additional units to be developed on a single piece of land;
- ✓ Infill development on vacant or underutilized parcels of land at higher densities. A range of infill processes may include transfer of development rights, land exchanges, land consolidation, public housing projects and so forth; and
- ✓ Allowing additional units to be developed on a single piece of land.

Figure 53: Densification Models



11.11.3. SPATIAL LOCATION AND DENSITY PARAMETERS

Table 38: Proposed Spatial Location Criteria and Density Parameters

SPATIAL LOCATION CRITERIA AND DENSITY PARAMETERS			
Targeted Areas	Description of the Spatial Area/Structure	Targeted Locations/Areas	Density Guidelines at the Locations
SPATIAL STRUCTURING ELEMENT			
District Development Node	Urban nodes characterised by a very high intensity, mix and clustering of urban activities or land use at points of very high accessibility, exposure, convenience and urban opportunity. Examples: Port Shepstone	Generally within and abutting the defined node or CBD area. Particularly in the vicinity of public transport routes, interchanges and stations, near civic precincts, public open space and where there is a diverse, concentrated mix of land uses, activities and services	100–375 du/ ha (net) 4 to 15 storeys
Municipal Development Node	Urban nodes characterised by a medium intensity, mix and clustering of urban activities or land use at points of good accessibility, exposure, convenience and urban opportunity. They tend to serve district or suburb-level needs. Examples: Marburg, Margate, Ezinqoleni, Port Edward and Shelly Beach	Generally within and abutting the node with a focus on public transport routes, interchanges and stations, next to civic precincts, public open space, and where there is a diverse and concentrated mix of land uses, activities and services	75–175 du/ ha (net) 3 to 7 storeys
INCREMENTAL DENSIFICATION			
Community and Neigbourhood Development Nodes	All single, residentialzoned areas	Areas that are identified as the Community Development Nodes or Neighbourhood Development Node. E.g. Gamalakhe, Southbroom, Ramsgate, Uvongo, Southport etc.	Second dwellings (Rights of surrounding properties are not negatively affected)
AFFORDABLE HOUSING AREA			
Specific Residential areas	Within areas of focused public-sector investment, e.g. subsidised housing	Informed by spatial structure locations	80-300 du/ha (net) 1 to 4 storeys.
SPATIAL STRUCTURING ELEMENTS			
Development Route	Major district movement routes, including linehaul public transport. Mixed land uses and higher density development tend to be nodal, with access provided at intersections, and generally linked to parallel and connecting side routes. Development routes may include short stretches of 'activity route' –type	Particularly near points of direct access, transport intersections and interchanges, places of intense mixed-use and nodal activity ('activity route' character) and next to or part of commercial complexes	75-175 du/ha (net) 3-7 storeys

	development. Examples: N2, R102, R61 routes		
Activity route	Significant routes, characterised by strip and nodal urban development along sections of the route. Activity routes are generally supported by a mix of land uses and higher-density urban development. Activity routes are characterised by direct access and interrupted movement flows, especially at bus and taxi stops and traffic lights.	Generally near the activity route, but particularly near public transport interchanges and stations, mixed-use areas and concentrated activity, business/ commercial nodes, and public institutions and facilities including open space	100–375 du/ha (net) 4 to 15 storeys
Activity street	Local routes characterised by continuous development, including mixed land use, linear commercial and business developments, light industry, institutions and social facilities. Activity streets are characterised by direct access and interrupted movement flows, especially at bus and taxi stops and traffic lights.	Generally near the activity street, but particularly near public transport stops, stations and route intersections, in mixed-use areas and concentrated activity, local business/ commercial nodes, and at public institutions and facilities including open space	35–100 du/ ha (net) Townhouses – 4 storeys

12. IMPLEMENTATION PLAN

12.1.LAND USE MANAGEMENT FRAMEWORK

A land use framework is one of the components of the land use management system of a municipality. The primary aim of the Land Use Management Framework (LUMF) is to bridge the gap between the Integrated Development Plan and the detailed requirements of land use management applied at municipal level. Although it is not a legal requirement, it is an important aspect of spatial planning. It provides for the refinement of the SDF, identification of areas that require different levels of detail in terms of land use schemes and the formulation of broad principles to guide the development of land use schemes. It enables development control, at differing levels of complexity, to extend over rural areas, and giving property owners, developers and the authorities a clear point of reference from which to manage the conservation and development of land.

The latter, referring to a set of actions required by a municipality to manage land and includes different components, such as a SDF, Land Use Framework, Scheme, Valuation and rating system, ownership and tenure, infrastructure and services etc. A land use framework provides for the linkage between the Spatial Development Framework (SDF) and the Scheme. It in effect, bridges this gap by providing additional information and guidelines that can assist the municipality in decision-making processes, while a Scheme is under preparation.

12.2.LAND USE MANAGEMENT SCHEME

The Spatial Planning and Land Use Management Act, Act No 16 of 2013 (SPLUMA), requires all municipalities in the province to develop and introduce wall-to-wall Land Use Schemes throughout their area of jurisdiction. This has to take place within 5 years from the promulgation of SPLUMA which implies that the target is now 2018. According to the Municipal Systems Act, a Land Use Scheme is a key component of the Integrated Development Plan (IDP).

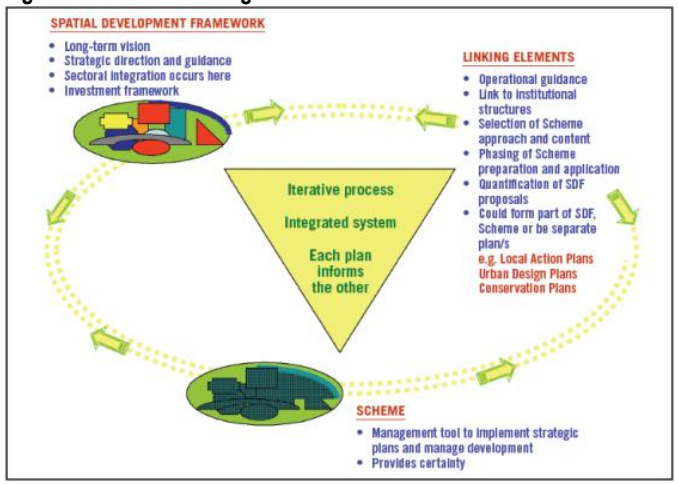
Ray Nkonyeni Local Municipality has developed a Single Land Use Scheme (Wall-to-Wall) which was **completed and adopted in November 2019.**

12.2.1. LINKAGE BETWEEN THE SPATIAL DEVELOPMENT FRAMEWORK, LAND USE FRAMEWORK AND THE SCHEME

As mentioned previously, the Land Use Framework is a bridging/ linking element that provides a linkage between strategic planning (SDF) and statutory planning (Scheme). As such, the SDF provides strategic direction, the Linking Elements provide more detailed spatial plans and the Schemes provide the statutory basis for land use decision-making. The relationship between the SDF, Land Use Framework and Scheme is indicated in figure below. The main functions of developing a Land Use Framework for Ray Nkonyeni Municipality are as follows: -

a) To translate strategic objectives contained in the IDP and SDF to a level that will provide spatial representation;
b) Quantification to guide the preparation of the Scheme;
c) To provide institutional guidance that takes account of existing governance structures (e.g. involving Traditional Council in some areas of land use decision-making);
d) To provide an indication of timing and phasing of development;
e) To guide the preparation of a Scheme for the area;
f) Guide planning decisions in the Municipality (together with the SDF on which this Framework is based) in the interim period when the different phases of the Scheme are being prepared.

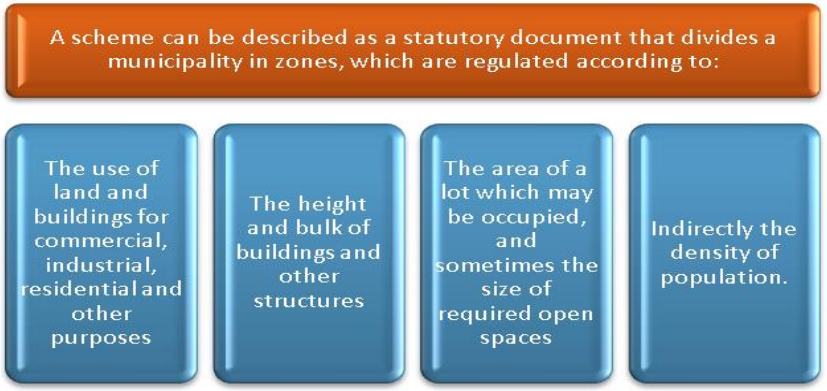
Figure 54: SDF/ LUMS Alignment



12.3.PURPOSE OF A SCHEME

The KwaZulu-Natal Guidelines for the Preparation of Schemes defines a scheme as:-

Figure 55: Scheme Description



Source: KZN Land Use Management Guidelines for the Preparation of Schemes for Municipalities – Update 2011

"a tool used by a municipality to guide and manage development according to the vision, strategies and policies of the Integrated Development Plan and Spatial Development Framework, and in the interest of the general public to promote sustainable development and quality of life."

There are a number of reasons for the preparation of Schemes. Firstly, a municipality must satisfy the legal requirements emanating from both the Municipal Systems Act and the SPLUMA, which require a municipality to prepare a Scheme as part of an Integrated Development Plan (IDP). Secondly, the municipality has a responsibility to encourage harmonious development within its area of jurisdiction. This includes the protection of property rights and ensuring that development occurs in a compatible manner. In addition, scheme will promote sustainable land use and assist the municipality and other role-players to address environmental management issues. As indicated on Figure above, the scheme divides a municipal area into zones and regulates the use of land and buildings on the one hand, and the nature, extent and texture of development on the other. Ray Nkonyeni Local Municipality scheme will therefore: -

a) Indicate what may or may not occur on particular areas of land.
b) Provide land use certainty and boost investor confidence.
c) Promote amenity, efficient land use practice and reserve land for essential services.
d) Resolve conflict between different land uses and control negative externalities.
e) Enable mix of convenient land usage, efficient movement processes and promote economic development.
f) Protect natural and cultural resources and land with high agricultural production potential.
g) Provide for public involvement in land management decision processes.
h) Provide for sound local regulation and enforcement procedures.
i) Accord recognition to indigenous and local spatial knowledge, land use practices land allocation practices.
j) Facilitate social justice and equitable regulation of contested spaces.
k) Reserve land for future uses where the need for location and extent is not certain at present.

12.3.1. ADMINISTRATION OF THE SCHEME

The municipal officials must administer the Scheme, while final decision-making rest with the Council. The current, structure of Ray Nkonyeni makes provision for three positions that are responsible for the scheme and these are: -

1. Head of Department Development Planning Services (HOD) – the section 57 Manager has an overall responsibility of the scheme.

2. Manager for Town Planning – is a full-time (permanent) manager who reports to the HOD. He is responsible for managing the development and maintenance of the scheme.

3. Senior Town Planners x3 (Land Use Planning) – these are full-time planners who are responsible for the scrutiny of development applications and advising the applicants.

4. Town Planning Technicians x2 (Spatial Planning and Land Use Planning) – these are full-time junior planners who are responsible for the day to day management of the scheme and SDF monitoring.

5. GIS Specialist x1 – is a full-time officer who is responsible for spatial data administration, editing and processing.

Given the size of the municipality, this can be considered to be sufficient capacity to implement and maintain the land use management scheme.

12.3.2. KEY ELEMENTS OF LAND USE MANAGEMENT

The adopted Ray Nkonyeni Wall-to-Wall Scheme will puts forward management of the following areas: -

12.3.2.1. URBAN TOWNS AND TOWNSHIPS

There are a number of urban settlements within Ray Nkonyeni which are located along the coast and within the inland. These include suburban areas of Port Shepstone, Marburg, Margate, Port Edward and Hibberdene. The other urban areas that are located within the inland and these are Gamalakhe Township, Ezinqoleni and Merlewood. The coastal urban settlements are mostly located along N2 and R61. These are developed into towns due to the high level of visibility and accessibility. The inland urban settlements tend to be mainly residential areas with limited commercial activities within these.

12.3.2.2. COASTAL AREAS

The coastal strip of Ray Nkonyeni is used as swimming beaches, fishing, harvesting of marine animals and plants, and recreation. The municipality also identified the coast as a potential opportunity for promoting tourism. This resource must therefore be protected from harm in order to ensure that continued use of these resources can be guaranteed over time.

12.3.2.3. HIGH POTENTIAL AGRICULTURAL LAND

Generally, any land considered to have potential for any form of agricultural activity would require some form of management mechanism to be applied. The idea is to ensure that such land is not used inappropriately for other undesirable land uses, particularly in light of promoting food security in South Africa. Of importance is also the need to guard high

potential agricultural land which often faces pressure from physical development. All agricultural land, particularly, those with high agricultural land and those currently under agricultural activity are to be adequately guarded as an invaluable scarce resource that must be managed appropriately. The Municipality`s benefits from resource protection may include:

- Continual food production towards food security; and
- Development of agricultural opportunities that support local livelihoods such as Local Economic Development (LED) projects.

12.3.2.4. ECO- TOURISM AREAS

There are certain environmental areas within the Municipality with the inherent potential to contribute to Local Economic Development. As such, the environmental conditions that prevail to make these high potential tourism areas must be conserved and properly managed.

12.3.2.5. ENVIRONMENTAL AREAS

There are six conservation areas within and surrounding the Municipal area. These areas include Mpenjati, Umtamvuna, Mbubazi, Skyline, Trafalgar Marine and Oribi Gorge Nature Reserves. These areas are protected in terms of the environmental conservation legislations, the SDF proposed a 5km buffer from the boundaries of the reserves. The conservation and management of these areas would require coordination between key stakeholders such as Ray Nkonyeni Municipality, Ugu District Municipality, the Department of Agriculture and Environmental Affairs, Ezemvelo KZN Wildlife and Landowners.

12.3.2.6. WATER RESOURCES

The SDF noted that there are numerous and substantial east-westerly running river valleys within the Ray Nkonyeni Municipaliy. Note that the steep sided valleys of several rivers, such as the Mzimkhulu, Mbizana and Mtamvuma. The 1:50 year and 1: 100-year flood line is required for major developments to take place. Although this has not been undertaken at the municipal scale as it is done on a project by project basis, the SDF has identified a need to guide against development that affect rivers and wetlands. The SDF therefore recommended that a 32m confidence buffer should be reserved for environmental service. The width of the river corridor is dependent on the local situation, for example the condition of stream, and may extend beyond the statutory 32m. Note that for particular activities within 32 meters of the edge of a stream, environmental authorisation is required from the relevant environmental authorities (NEMA EIA regulations, 2010)

12.3.2.7. ESTUARY MANAGEMENT

Ray Nkonyeni has a number of Estuaries. These comprise the unique zone where rivers meet the sea. They are highly variable systems that may experience water chemistry fluctuations, depending on tidal strength and river flow. There are eleven estuaries in the area which have been identified as provincial conservation priorities and these are Boboyi, Damba, Fafa, Mbizana, Mpenjanti, Mtamvuna, Mtentweni, Mtwalume, Mzimkhulu, Vungu and Zotsha. The seaward boundary of the estuary is the high watermark and the upstream boundary is the point where the system is no longer subject to tidal action or has no trace of salinity. The outer perimeter of estuaries is taken as the 5m height contour.

12.3.2.8. RURAL SETTLEMENTS

Settlements growth, if not planned and managed appropriately can have negative implications for environmentally sensitive areas, adjacent agricultural land and access to services. Future residential settlements should be encouraged to locate within nodal areas identified in the SDF. In areas where public-funded housing projects occur, it is essential that these projects are executed in an integrated manner, taking into consideration availability of basic services and infrastructure in support of building liveable and sustainable human settlements. Where necessary, housing projects should be phased in conjunction with basic services provision to minimise the occurrence of abandonment by beneficiaries.

12.3.3. DEVELOPMENT RIGHTS MANAGEMENT MECHANISMS

12.3.3.1. POLICY BASED MECHANISMS

A land-use rights policy is essentially an expression of the government's perception of the direction to be taken on major issues related to land use and the proposed allocation of the municipal land resources over a fixed period of time. It has a production and a conservation component. A sound land-use policy is effectively part of the enabling environment and should cover all uses of land. To achieve the policy objective of sustainable production and conservation of natural resources, Ray Nkonyeni Municipality should pursue strategies which actively promote forms of land use which are both attractive to the people and sustainable in terms of their impacts on land resources. This will have to be developed through a participatory, integrated and iterative process which promotes greater likelihood of achieving implementation. The policy-based mechanisms for land use management which can be applied in Ray Nkonyeni Municipality include but not limited to:-

-Rural Densification Policy;

-Integrated Public Transport Management Policy;

-Agricultural Development Policy;

-Climate Change Policy;

-Informal Trading Policy, etc.

These policies will therefore play a significant role in ensuring enforcement and promoting sustainable human settlements.

12.3.3.2. REGULATORY BASED MECHANISMS

This refers to land use management mechanism which uses statutory instruments based on an applicable legislation to regulate land use activities by lawfully conferring land use rights in terms of a Land Use Scheme. As mentioned before that the Ray Nkonyeni Municipality has adopted a Land Use Scheme as per Section 24 (1) of the Spatial Planning and Land Use Management Act, 2013 (Act No. 16 of 2013), the following SDF guidelines were taken into consideration. These guidelines will also need to be taken into consideration during the review or the formulation of a new scheme, when amalgamating with the Ezinqoleni Local Municipality.

12.3.4. PROPOSED LAND USE ZONES

Broad land use typologies for the Ray Nkonyeni Land Use Framework are suggested in table 1 on the overleaf. It is suggested that a more prescriptive/ regulatory approach is required where important resources (e.g. high potential agricultural land and important environmental service areas) need to be protected and where pressure for development is higher such that the Municipality needs clear regulations to manage this development e.g. a potential urban settlement where there is or may be a demand for commercial and industrial development sites. A policy-orientated approach would be suitable for areas where there is less pressure for development.

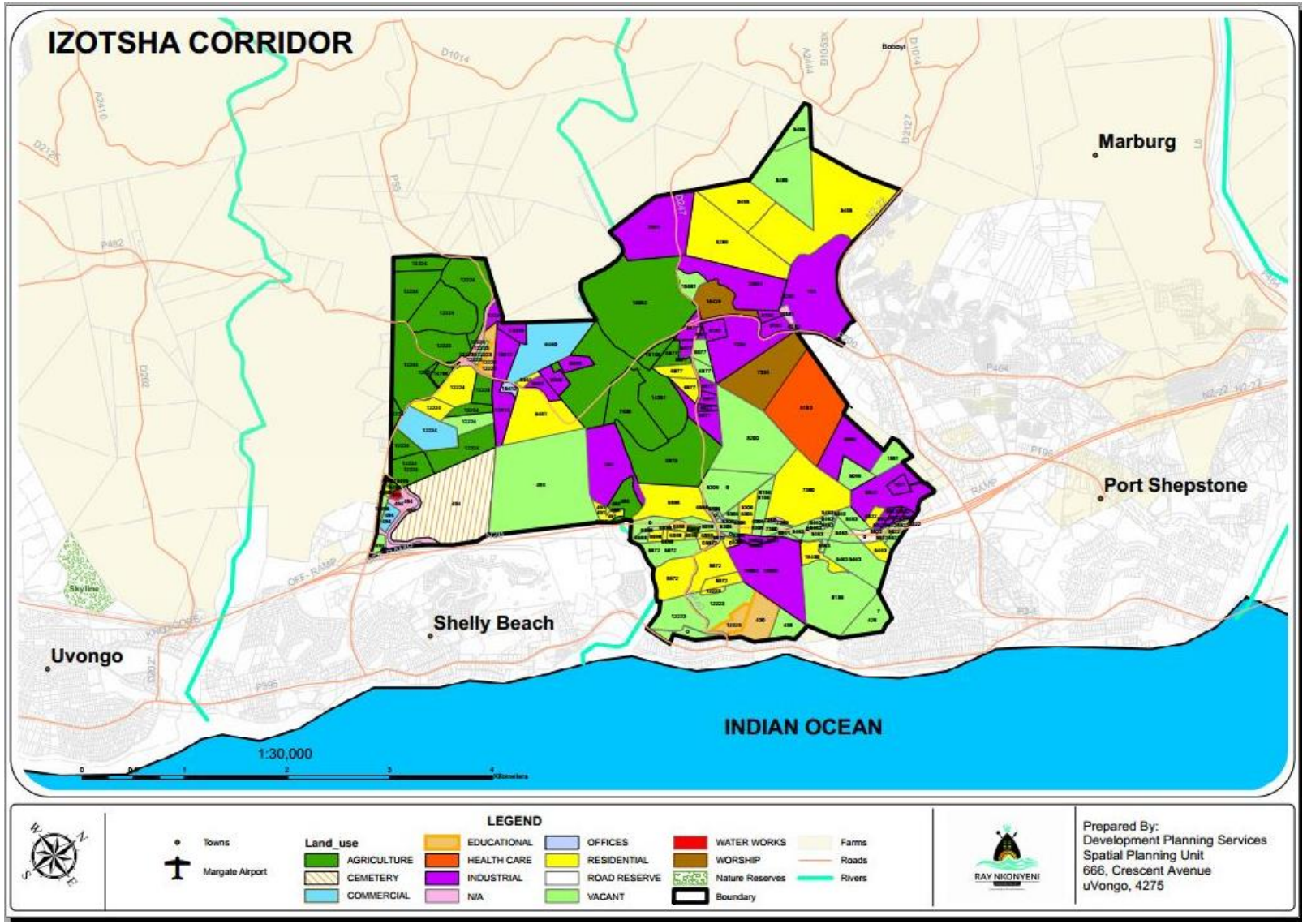
12.3.4.1. SHORTENED LAND USE DEVELOPMENT PROCEDURES

Ray Nkonyeni Local Municipality is one of the growing Municipalities within the KwaZulu-Natal province. As such, it is always faced with demand for development which require in some cases for shorten land use development procedures to be applied. The main areas which such procedures have already been applied is areas of economic and tourism development which play a significant role in the economic growth of the Municipality. Such areas are identified in the Single Land Use Scheme Development of the Municipality and include the following: -

a) Izotsha Corridor

This corridor is located on the west-southern part of Port Shepstone. It is intended to facilitate the expansion of the town through industrial, commercial, Community Urban Town Centre and residential developments.

This area is partially developed with few industrial, warehouses, agricultural and residential activities. The key issues that needs to be addressed with this proposed corridor are: -



Taking into account these issued. The figure below is proposed to address the land use problems along the Izotsha Corridor which is subject to investigation in the current Ray Nkonyeni Single Land Use Scheme development.

Figure 56: Proposed Land Use Zonings for the Izotsha Corridor

Table 39: Broad Land Use Management Categories

Parent Zone	Possible Zone	Statement of Intent	Scheme Approach	Existing and Future Land Use
Mixed Use Zones	1. Core Mixed Use Zones 2. Medium Impact Mixed Use Zones 3. Low Impact Mixed Use Zones 4. Suburban Office Zones	Areas that provide for a range of business, commercial and office uses; and may include residential with varying degrees of mix. Uses are compatible and generally do not breach the level of amenity contemplated by the zone.	Development pressure will ultimately be greatest in these nodes thus a more prescriptive approach is required.	5. Business 6. Commercial Workshop 7. Garage 8. Hotel 9. Guest Lodge 10. Launderette 11. Parking Garage 12. Professional Office 13. Public Office 14. Restaurant 15. Service Industrial Building 16. Service Station 17. Shop 18. Storage Warehouse
Industrial Zones	19. Medium Impact Industry Zone 20. Low Impact Industry Zones 21. Quarrying and Mining Zone	This zone will be used to designate and manage a range of industrial activities – from light industrial with limited impact on surrounding land uses to hazardous or noxious industry with high-impact and must be separated from other uses. This set of zones would include agricultural industry.	To promote a mix of industrial uses that provides the Municipal area with a sound, diverse industrial base. To promote high standards of site planning and landscape design for industrial developments within the Municipal area.	22. Business 23. General Industrial Building 24. Light Industrial Building 25. Professional Office 26. Service Industrial Building 27. Storage Warehouse 28. Wholesale Warehouse 29. Professional Office

Civic and Social Zones	30. Education Zones 31. Institutions and Worship Zones 32. Public Buildings Zone 33. Utility Facility (Reservation)	To provide appropriate areas for civic and social facilities, and public offices for public administration or government functions, including education, health, pension offices, museums, libraries, community halls, prisons, juvenile facilities, cemeteries and crematoria. To provide for uses and buildings associated with public and private service providers.	To provide social facilities and services across different parts of the municipality.	34. Crèche 35. Dwelling House 36. Educational Building 37. Residential Building 38. Educational Building 39. Institution 40. Veterinary Clinic 41. Retirement Village 42. Place of Worship 43. Place of Public Assembly
Residential Zones	44. Residential Only Zones 45. Residential Medium Impact Zones 46. Residential High Impact Zones 47. Tourist Residential Zone 48.	To provide a range of dwelling unit densities (i.e. low-density estate, single-family detached and attached, multi-family, and housing for special needs) which meet the diverse economic and social needs of the residents, and which are consistent with the Integrated Development Plan and appropriate standards of public health, safety, welfare and aesthetics;	To protect the amenity and the integrity of the various residential neighbourhoods and zones from undesirable land uses and activities.	49. Dwelling House 50. Agricultural Land 51. Residential Building 52. Home Garden 53. Medium Density Housing 54. Bed and Breakfast 55. Boarding House 56. Guest House 57. Guest Lodge 58. Hotel 59. Private Recreation Area 60. Self-Catering Units or Rooms 61. Boarding House 62. Holiday Park

Imizi (Homestead/ Rural Residential)	63. Imizi/ Rural/ Transitional Settlement (RTS) Zone 1	To provide for densely populated rural settlements which are located within 5km Radius to SDF Nodes and Corridors.	To promote proper growth of rural residential areas in terms of servicing needs and amenity.	64. Dwelling 65. Cattle Kraal 66. Chicken Coop 67. Granaries 68. Additional granny flat
	69. Imizi/ Rural/ Transitional Settlement (RTS) Zone 2	To provide for sparsely populated rural settlements which are located within a radius beyond 10km from SDF Nodes and Corridors.	To promote and protect the agri-village lifestyle, sense of place and amenity of the rural areas.	70. Dwelling 71. Cattle Kraal 72. Chicken Coop 73. Granaries 74. Additional units 75. On-site burial 76. On-site waste disposal pit
	77. Traditional Royal Residency/ Isigodlo	To provide for the traditional palace for Isilo or Amakhosi. It is often used for royal residency, administrative and recreational (cultural festivities) purposes in most rural areas and some regulations are crucial to consider in relation to these.	To cater for royal cultural and religious needs.	78. Royal residency 79. Dwelling 80. Administrative 81. Recreational and traditional/ cultural festivities (virginity testing) 82. Royal gathering/ Meeting Place
Agriculture Zones	83. Commercial (Agriculture 1) 84. Small Holding (Agriculture 2)	To provide for agricultural land uses. This protection is obtained by ensuring that development does not create soil erosion, silting of lower slopes, land slide damage, flooding problems, and severe cutting or scarring, since any proposed non-agricultural use or development and certain agriculturally related activities will be subject to prior assessment.	To protect high potential agricultural land from non-agricultural activities and transformation towards degradation.	85. Agricultural Building 86. Agricultural Land 87. Tunnels/ Hydroponics 88. Dip Tanks
	89. Subsistence Farming	To provide for livestock breeding, grazing, ploughing and veld management at a smaller scale.	To protect land from degradation due to poor farming methods.	90. All-Season Grazing Land (Amadlelo)

				91. Winter Grazing Camps (Amakhaphelo) 92. Izinkambi 93. Dip Tank (Idiphu) 94. Insimu 95. Isivande
Environmental Service Zones	96. Active Open Space 97. Private Conservation 98. Public Open Space	Areas that provide environmental and recreational services that are essential to the sustainable development of the Municipality. These include areas requiring preservation and conservation as they provide ecosystem services, are unique natural landscapes, viewpoints, areas of ecological, historical and/or cultural importance, biodiversity, and/or have unique, rare or endangered habitats or species.	Given the environmental sensitivity of these areas and their importance to the sustainable development of the area a more prescriptive approach to land use management would be required.	99. Recreation 100. Cultural 101. Gas regulation 102. Climate regulation 103. Disturbance regulation e.g. flood control 104. Water regulation 105. Water supply 106. Erosion control 107. Soil formation 108. Nutrient cycling 109. Waste treatment 110. Pollination 111. Biological control 112. Refugia i.e. habitat for resident and migratory population e.g. nursery for fish. 113. Food production 114. Raw materials 115. Genetic resources

	116. Cultural and Heritage Open Space	To preserve the natural and cultural open spaces from land use intrusion and degradation.	To ensure that the cultural open spaces remain vacant and undisturbed.	117. Isigcawu (Meeting Places and Traditional Trials) 118. Amagquma (Hilly Areas that are communicating (views) 119. Amahlathi Emvelo (Indigenous Forests for Wood harvesting, Wild fruit harvesting and Hunting areas) 120. Imithombo/ Iziphethu (Waterbodies and Wetlands where fishing and agricultural water collection can be done) 121. Isishozi (Lightning prone areas that are kept vacant)
Coastal management	122. Coastal management 123. Sea shore 124. Estuary Management	Provides for the management and development of land located within the low and high water mark, as defined in the Sea Shores Act, along the coast including, inter alia, bathing, shore angling, deep-sea angling, jet skiing, surfing, boogie boarding, kite-surfing, construction of tidal pools and the erection of shark nets. The purpose of the zone is to ensure that permitted activities do not impact negatively on ecosystems, marine and coastal, fauna and flora, within these areas.	Given the environmental Sensitivity of the coastal strip a more prescriptive approach to land use management would be required.	125. Recreation 126. Park 127. Beachfront 128. Private Beach
Transport	129. Roads 130. Road reserves 131. Railway line 132. Landing strip 133. Bus and taxi rank 134. Railway station 135. Public parking	The provision of land for the full range of road infrastructures within rural and urban areas to ensure an optimal road transport network can be constructed and maintained.	Regulations with respect to roads will focus on issues of access onto roads and the use of road reserves for trading on some areas. Regulations relating to taxi and bus ranks would need to be specific to these uses and more prescriptive as these uses can have a high impact on neighbours.	136. Existing Roads 137. Future Roads 138. Taxi/Bus Rank

12.3.5. SCHEME APPROACH

A wall-to-wall scheme will cover the entire Ray Nkonyeni Municipality and provide certainty to land users and land development applicants irrespective of location. The municipality has developed a comprehensive scheme with a range of zones some of which may not apply in less developed areas. The following broad categories were used in developing the scheme: -

a) Urban which includes all areas that fall within the urban edge as delineated in this SDF.

b) Areas that are subject to the Sub-division of Agricultural Land Act, Act No. 70 of 1970.

c) Rural settlements located on communal land, state land and/or privately owned land.

Rural land use policies were developed to guide land use management on agricultural land and rural settlements. It is suggested that a more prescriptive/ regulatory approach is required where important resources (e.g. high potential agricultural land and important environmental service areas) need to be protected and where pressure for development is higher such that the Municipality needs clear regulations to manage this development e.g. a potential urban settlement where there is or may be a demand for commercial and industrial development sites. A policy-orientated approach would be suitable for areas where there is less pressure for development.

13. CAPITAL INVESTMENT FRAMEWORK

13.1. BACKGROUND

A Capital Investment Framework (CIF) is considered to be a very important component of the Spatial Development Framework (SDF). CIF is a sound step towards a more systematic approach to infrastructure planning and coordination. These key goals of this component are as follows: -

a) Spatial budgeting – which involves mapping of the capital infrastructure projects that are approved by the IDP. This assists to determine whether the development trajectory that is advocated by the IDP is in harmony with the spatial development vision that is suggested by the SDF.

b) Intensify spatial objectives with infrastructure proposals – the SDF identifies a number of spatial development proposals for further economic development and investments within the area but these proposals will be meaningless if the supporting infrastructure has not been planned for in tandem with the overall SDF. The CIF provides an opportunity to relook at these proposals in line with infrastructure requirements.

c) Comparison of areas of greatest needs and where services or infrastructure proposals are directed to – this is intended to establish if the areas that encounters backlogs are receiving attention to address that. There are areas within the municipal area which suffers from historical and institutional neglect from benefiting from services. It is the role of a developmental government to be pro-active at developing these areas. This is part of the reconstruction and developmental mandate.

The normative aims and objectives are: -

a) To inform public and private sector investment decision-making.
b) To influence municipal capital infrastructure project allocation.
c) To serve as a strategic infrastructure guide for economic infrastructure priority areas.
d) To map out all service delivery priority areas.
e) To identify all major infrastructure priority areas including the projects currently underway.
f) To determine if spatial proposal can be resourced by sufficient infrastructure resources.
g) To integrate Capital Investment Framework with the IDP.

14. CAPITAL EXPENDITURE FRAMEWORK

National Department of Cooperative Governance and Traditional Affairs (DCOG) through the Integrated Urban Development Framework/Grant has initiated a process of grant reforms with metropolitan cities supported by National Treasury, Intermediate City Municipalities by COGTA and small towns by SALGA. The IUDG is a fiscal framework that introduces the consolidation and performance orientation and mainstreaming of infrastructure grant funding. It is also to ensure budget is strictly aligned to plans of Council. The programme is a monitoring system based on the Capital Expenditure Framework (CEF) that is aligned to the Municipality's Spatial Development Framework. Following successful application, Ray Nkonyeni Municipality was identified as one of 08 Intermediate Cities countrywide to participate in the Integrated Urban Development Grant (IUDG).

Ray Nkonyeni Municipality has therefore prepared a Business Plan that contains a three-year Capital Programme which is aligned with a 10-year Capital Expenditure Framework in order to qualify for the IUDG stream. This framework includes all the investment plans that fall within the mandate of the municipality and is funded by the municipality and includes own funding, grants received as well as borrowing raised by the municipality itself.

All the necessary IUDG milestones have been carried and a final IUDG Report has been completed (Attached as an Annexure)

15. SIPS PROJECTS

Table 40: SIPS Projects

No.	PROJECT	LOCATION	KEY CHALLENGE	SPLUMA PRINCIPLE	PGDS GOALS	IDP STRTEGIC OBJECTIVES	PROGRAMMES	PROPOSED SDF STRATEGY	NSSD STRATEGIC PRIORITY	PERFOMANCE INDICATOR
S2: CORRIDOR DEVELOPMENT										
1.1	Main Harding Road	Port Shepstone	Lack of Integrated Transport Hub in the Municipality.	Spatial Sustainability/ Spatial Efficiency	Goal 4	To promote and enhance development planning, spatial planning and land use management	SIP 2	Create a hierarchy of integrated public transport services related to the accessibility grid.	Strategic Priority 1	Completed and functional Integrated Taxi Rank
1.2	Nelson Mandela Drive	Port Shepstone	Lack of Integrated Transport Hub in the Municipality.	Spatial Sustainability/ Spatial Efficiency	Goal 4	To promote and enhance development planning, spatial planning, and land use management	SIP 2	Create a hierarchy of integrated public transport services related to the accessibility grid.	Strategic Priority 1	Completed and functional Integrated Taxi Rank
S3: NODAL DEVELOPMENT SERVICES CENTRES										
	N/A									
S4: CONTINUUM OF SUSTAINABLE HUMAN SETTLEMENTS										
2.1	Rural Housing Development	Hlomendlini/ Vukuzithathe/ KwaMthimude/ KwaXolo/	Backlog in Service Delivery	Spatial Sustainability	Goal 3	To improve access to adequate shelter in the form of sustainable	Breaking New Ground	Redress existing imbalances in the distribution of different types of residential development and avoid creating new imbalances.	Strategic Priority 4	Number of housing units completed

		KwaMadlala/KwaNzimakwe / Gamalakhe / Oshabeni / KwaNyuswa				human settlements				
2.2	Slum Clearance Projects	Mkholombe / Masinenge /						Transform townships and informal settlements into economically and socially integrated neighbourhoods		
	Restructuring zones	Marburg / Protea Park/ Uvongo						To facilitate the provision of social housing for citizens who are in needed of rental housing opportunities.		
2.3	Urban Housing Projects	KwaNzimakwe/ Gamalakhe / Bhobhoyi/ Merlewood						Encourage public/private partnerships to develop integrated human settlements and diversify housing delivery.		
S5: PROTECTION OF AGRICULTURAL LAND										
3.1.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
S6: SERVICE AND SOCIAL INFRASTRUCTURE										
4.1.	Water and Stormwater Services and Management	Rural and urban	Backlog in Service Delivery	Spatial Sustainability/ Spatial Justice	Goal 4	To address infrastructure backlogs and extend access to basic services	SIP 6, 18	Ensure that new urban development is supported by appropriate basic infrastructure and services	Strategic Priority 4	Completed Water Supply and Stormwater Projects
4.2.	Electrification Projects	Ward 26, 30,31,32,33,34,35,36					SIP 6, 8, 9 &10		Strategic Priority 3	Completed Electricity Projects and Infrastructure

4.3	Community Halls	Ward 6, 8, 36, 25, 28, 36								Constructed Community Halls
S7: UNLOCKING ECONOMIC POTENTIAL										
5.1	Upgrade of Margate Airport and Runway	Margate	Unsustainable Economic Growth	Spatial Efficiency/ Spatial Justice/ Spatial Sustainability	Goal 1 & 7	To promote strategic and transformative release of land to foster inclusive economic development	SIP 2	Encourage area specialisation and the development of a diverse, mutually supportive system of economic areas	Strategic Priority 1	Upgraded Airport Runway
S8: SUSTAINABLE INTEGRATED SPATIAL PLANNING SYSTEM										
6.1	Smart City Strategy	Entire Municipality	Inadequate regulatory policies to direct development in the Municipality	Good Administration/ Spatial Equity	Goal 6 & 7	To promote and uphold principles of transparency, accountability, good governance, and legal compliance	SIP 7	Facilitate urban development and direct the phasing of urban growth through deliberate and integrated use of planning, infrastructure provision, and the regulatory and fiscal authority of all spheres of government.	Strategic Priority 1	Completed regulatory plans which have been adopted by Council.
6.2	Port Edward / Ezingolweni Corridor Plan									
6.3	Oribi Gorge Precinct Plan									
6.4	SDF Reviewed									

16. SUSTAINABILITY ASSESSMENT

The achievement of the sustainability outcomes as reflected in the Framework for Sustainability will depend on a number of key enabling factors which must be reflected in the Municipality's Capital Investment Framework. These factors include the following:

a) A clear commitment from Council to make support sustainable policies;

b) Capacity to align the Sustainability Framework with existing institutional structures, systems, processes and procedures;

c) Commitment from national and provincial government departments to assist and support the municipality and to strengthen their capacity to implement the Sustainability Framework;

d) Commitment from provincial government to support the municipality in implementation and to monitor progress in achieving the Sustainability Framework;

e) Commitment from Traditional Leaders and capacity to assist the municipality in sustainable land use management; and

f) An informed citizenry.

The realisation of sustainability outcomes also has a time factor and there must be on-going monitoring and evaluation to track progress, review strategies and design new action plans at specified intervals. The Framework for Sustainability serves as a constant monitoring and evaluation guide that should be used by all role-players with an interest in Ray Nkonyeni Local Municipality. To this end every programme and/or project proposal in the area must be assessed against the sustainability criteria. If a programme and/or project is likely to result in significant environmental impacts appropriate mitigation measures must be identified to minimise or avoid harmful environmental impacts.

Table 41: Ray Nkonyeni SDF Sustainability Assessment with the National Strategy for Sustainable Development (NSSD)

NSSD 1 STRATEGIC PRIORITY 1: ENHANCING SYSTEMS FOR INTEGRATED PLANNING AND IMPLEMENTATION	
Key Environmental Issue: Limited Capacity and Systems for Integrated Planning and Implementation to achieve Sustainable Development	Integration into Ray Nkonyeni SDF
Insufficient intergovernmental co-operation and co-ordination for effective environmental governance; Poor monitoring and evaluation systems to assess progress towards sustainability; Insufficient resources and capacity made available for environmental management; Limited integration of sustainability into development planning.	
Sustainability Objective	
Enhanced and effective environmental governance, institutional structures and systems to achieve integrated planning and implementation.	
Sustainability Criteria	
Environmental sustainability criteria are integrated into Policies, Plans, Projects and decision making.	Yes
Co-operative environmental governance structures and mechanisms promote integrated planning and ensure efficient and effective implementation of environmental functions and responsibilities.	Yes
Financial resources and capacity enable the implementation and management of environmental functions and responsibilities.	Yes
Municipal capital investment projects comply with relevant environmental legislative requirements.	Yes
Communities are informed, empowered and involved in the process of democratic environmental governance.	Yes
Access to environmental information is facilitated and encouraged.	Yes
Monitoring and evaluation systems assess and report on the progress towards sustainability.	Yes

NSSD 1 STRATEGIC PRIORITY 2: SUSTAINING OUR ECOSYSTEMS AND USING NATURAL RESOURCES EFFICIENTLY

Key Environmental Issue: The Degradation of Land and Natural Resources	Integration into Ray Nkonyeni SDF
Inappropriate land use and poor land management is resulting in land degradation, the loss of natural resources and reduced potential for the provision of ecosystem goods and life support services. This includes the loss of agriculturally productive land and a decline in biodiversity which has significant social and economic impact.	
Sustainability Objective	
The use of natural capital is compatible with the maintenance of ecosystem functionality and natural resources are protected and restored.	
Sustainability Criteria	
Areas identified as being essential for the persistence of biodiversity and for the provision of ecosystem goods and services are valued, protected and continually enhanced.	Yes
Degraded areas are identified, rehabilitated and managed to promote land productivity	Partially
High potential agricultural land is protected and rehabilitated for sustainable agricultural production.	Yes
Agricultural production is enhanced and increased through environmentally sustainable agricultural practices.	Yes
Areas of geotechnical, geological or instability risks are identified and avoided in land development.	Yes
Compact land development patterns use land efficiently.	Yes
Key Environmental Issue: Excessive Water Demand Exceeds Available Supply	Yes
Current water demand from the Mzimkhulu River is exceeding sustainable levels and is stressing the aquatic ecosystems. Rapid urban & industrial expansion and population growth is increasing demands and this is compounded by inefficient water use and wastage. Degraded catchments and aquatic ecosystems diminish the ability of the natural systems to sustainably supply water. Dams and inter basin-transfer schemes increase costs of providing water to the	Integration into Ray Nkonyeni SDF
consumers and negatively impact on overall river health and natural systems	
Sustainability Objective	
The ability of aquatic resources to provide water is maintained within the limits of sustainability.	
Sustainability Criteria	
Wetland areas, streams and rivers are protected, rehabilitated and managed to maintain ecological functioning.	Yes
Flood prone areas are managed to promote ecosystem goods and services, to minimise flood risks and impacts.	Yes
Water demand management results in minimised water loss and optimised water conservation.	Partially
Everyone has access to the minimum supplies of potable water needed to maintain their health and well-being.	Partially
Catchment and river management policies and guidelines integrated into land use and development planning.	Yes
Equitable and fair access to water supplies is provided for all water users.	Partially
Key Environmental Issue: Reduced Water Quality	Integration into Ray Nkonyeni SDF
Land degradation, Industrial effluent, and, poor sewerage, solid waste and storm-water management are impacting on water and aquatic ecosystem quality. This is resulting in declining social and economic conditions including increased health risks and costs; decreased river health; increased water treatment costs; increased risk of liability to the Municipality; increased water charges; and, decreased investor interest.	
Sustainability Objective	

Water quality in all aquatic ecosystems in the District is significantly improved and maintained.	
Sustainability Criteria	
Bacteria and pathogens in all aquatic systems do not pose a significant risk to health and wellbeing.	Investigation required
Nutrient concentrations and loads in all aquatic systems reverse current unacceptable trends of eutrophication.	Investigation required
Aquatic ecosystems are in a functional and healthy state.	Investigation required

NSSD 1 STRATEGIC PRIORITY 3: TOWARDS A GREEN ECONOMY	
Key Environmental Issue: Economic Growth that is not Linked to Sustainable Resource Use and Environmental Impact	Integration into Ray Nkonyeni SDF
Resource and ecosystem degradation due to over-exploitation of natural capital. Persistent poverty, unemployment, social dependency and inequality. An economy that is based on intensive resource consumption is depleting non-renewable and renewable resources beyond sustainable levels.	
Sustainability Objective	
Economic goals based on ecological sustainability and built on a culture that recognises that socio-economic systems are dependent on and embedded in ecosystems.	
Sustainability Criteria	
An environmentally sustainable economy promotes distributional equity, is resource efficient and provides for the rehabilitation and sustainable management of natural capital.	Yes
Absolute poverty is eradicated and the wealth gap is reduced.	Partially
A low-carbon economy that relies on clean, renewable and efficient energy sources and transport options.	Partially
A resource efficient economy that optimises its use of water while significantly reducing waste generation.	Partially
An equitable and broad range of employment opportunities exist that provide people with an income to support themselves and their families.	Partially

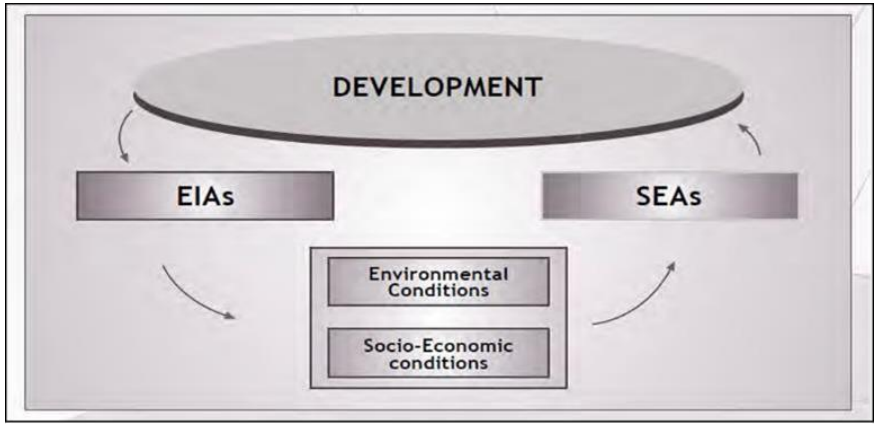
NSSD 1 STRATEGIC PRIORITY 4: BUILDING SUSTAINABLE COMMUNITIES	
Key Environmental Issue: Inefficient Spatial Planning and Urban Design; Inadequate Provision of Basic Services Including Water, Sanitation and Waste Management; and, Insufficient Recognition of Cultural Heritage	Integration into Ray Nkonyeni SDF
Rapid population growth and urbanisation increases pressures on Municipalities to sustainably supply services. A large number of poverty stricken people live in informal settlements which are detrimental to their health and well-being. Safe, clean and pleasant environments are not being provided. Increased demand for development is placing pressure on the optimal use of land and the provision of sustainable services and infrastructure. Urban design does not optimise resources efficiency particularly in relation to electricity usage, water and sewer provision, waste management and accessibility of public transport. The lack of equitable and universal access to basic services such as effective waste removal and the provision of appropriate sanitation and water services impact on human health and well-being and result in a deterioration of the quality of life. Waste recycling initiatives are not easily accessible to the majority of people in the Municipality. Limited recognition of both natural and social heritage resources and of the spiritual, cultural and economic value of cultural heritage sites. Eurocentric biased knowledge of cultural heritage and insufficient data for all elements of cultural heritage undermines social cohesion and understanding.	
Sustainability Objective	
Environmentally sustainable communities are established where development is informed by social needs and the improvement of the quality of life and does not compromise the natural environment and cultural heritage.	
Sustainability Criteria	
Environmental sustainability and ecosystem goods and services are integrated into development planning.	Yes
Sustainable municipal bulk service infrastructure and facilities are available, maintained and managed, to sustainably meet the needs of residents and business.	Yes
All residents have appropriate, secure and affordable housing and access to basic services in order to meet their basic needs and to live with dignity.	Partially
Communities vulnerable to environmental risk are identified and strategies are in place to minimise these risks.	Yes

Environmental justice and equity must be pursued so as to ensure that environmental impacts do not unfairly discriminate against any person or community.	Yes
Community services, facilities, community parks and open spaces are accessible to all people.	Yes
An efficient, safe, integrated and convenient network of public transport, bicycle routes and pedestrian access is provided.	Partially
Safe, clean and pleasant environments are provided to protect and enhance human health and well-being and improve overall quality of life.	Yes
Resources use is minimised through energy efficiency, reduced water demand, efficient waste management and the provision of accessible public transport.	Partially
Cultural and natural resources and sense of place are protected and maintained.	Yes
Indigenous ecological and cultural knowledge is developed and integrated into planning and management processes.	Yes

NSSD 1 STRATEGIC PRIORITY 5: RESPONDING EFFECTIVELY TO CLIMATE CHANGE	
Key Environmental Issue: Localised Poor Air Quality and Greenhouse Gas Emissions Contributing to Climate Change	Integration into Ray Nkonyeni SDF
There is a number of manufacturing industries within the municipality, particularly in the two major industrial basins in Uvongo and Marburg which contribute greatly to gas emissions. The N2 experiences high levels of traffic, with usage varying between the different motor vehicle types, i.e. Buses, trucks, motor vehicles, etc. This produces the highest pollutants relating to motor vehicles. A decrease in natural capital diminishes the municipality`s ability to sequestrate carbon and mitigate predicted climate change impacts.	
Sustainability Objective	
Air quality is significantly improved, Greenhouse gas concentrations are reduced and there is resilience to climate change within communities and ecosystems.	
Sustainability Criteria	
Ambient air quality standards for the protection of human health and well-being and natural systems are maintained.	Partially
A low-carbon economy is achieved through energy efficiency, the use of alternative technology and reducing the dependence on fossil fuels.	Partially
Greenhouse Gas emissions are reduced to levels in line with Cabinet approved targets.	Partially
Natural systems are restored and maintained to be suitable for the sequestration of carbon and mitigate for climate change.	Partially
Climate change adaptation strategies effectively build and sustain social, economic and environmental resilience to climate change.	Partially

16.1.STRATEGIC ENVIRONMENTAL ASSESSMENT (SEA)

The Ray Nkonyeni has developed Strategic Environmental Assessment Plan. The purpose of the Strategic Environmental Assessment (SEA) is to in inform the identification of environmental opportunities and constraints and how these impact on and are impacted on by development and land use patterns. There are several differences between an Environmental Impact Assessment (EIA) and SEA that assist in understanding the role of each. In an EIA the impact of a development on the environment is identified, however, in an SEA the opportunities and constraints that the environment poses for development in general is identified.



In this way, the SEA will aid in identifying land that belongs to one of three categories:

- Conservation zones – cannot be developed
- Conservation with low impact development zones – can be developed with certain types of development and with authorisation
- Development zones – can be developed.

The SEA will be prepared to:

- Address the causes of environmental impacts rather than simply treating the symptoms of environmental degradation;
- Assist in the integration of the concept of sustainability and strategic decision-making through, for example, the determination of limits of acceptable change and the identification of sustainability targets and indicators, ensuring that development is within sustainable limits;
- Talk to and provide context for lower levels of planning and decision-making within the Municipality;
- Be based on the participation of the public, non-governmental organisations and other institutions within the Municipality very early in its development process.

The interim report assessed the status quo of the RNLM, by reporting on the following aspects;

- Define the Vision, as well as the theme/subject matter in terms of economic development, tourism and agriculture;
- Undertake Spatial Analysis and Synthesis that includes the current state of the environment in the study area, and existing information and reports related thereto, to develop an overview of strategic issues, including:
    - Locality and Extent
    - Topography
    - Geology
    - Climate and Air Quality
    - Biodiversity
    - Water resources (surface hydrology) –
    - Floodlines – 1:100 and 1:50 year floodlines where available;
    - Land use patterns;
    - Water and Waste-water management; Solid waste management.
    - Social
    - Economic

16.1.1. VISION AND MISSION OF SEA

According to the Ray Nkonyeni Municipality Spatial Development Framework (2017), RNLM has rivers, wetlands, agricultural farms and nature reserves that need to be protected and preserved. Land development within the municipality must be undertaken in an economically, socially and environmentally sustainable manner, and with the following acknowledged as key interventions for spatial transformation:

- protection and enhancement of the environmentally sensitive areas;
- protection and optimal utilization of good agricultural and;
- Creation of an integrated open space system in an urban context; and
- Enhancement of the aesthetic quality of the environment.

Environmentally sensitive areas provide opportunities for eco- tourism, agriculture and sports and recreation. Similarly, ecological zones such as wetlands, areas where there are endemic species, scenic areas, etc., provides opportunities for environmental conservation and tourism development, and should not be subjected to development pressure.

The SDF (2017) also strongly emphasized the importance of the preservation on agricultural land within the municipality. It was noted that substantial amount of land is generally classified as having high and good potential for agriculture. It is important to note high potential agricultural land has become a scarce and a deteriorating resource. Therefore, the

strategic development of this municipality will need to take cognisance of the network of agriculturally viable land.

16.1.2. APPROACH AND METHODOLOGY OF SEA

A number of available spatial datasets were provided to SiVEST from Ray Nkonyeni Local Municipality, Ugu District Municipality, Ezemvelo KZN Wildlife, National Department of Agriculture, South African National Biodiversity Institute, ENPAT, Agricultural Research Council,

National Freshwater Ecosystem Priority Areas, KZN Provincial Department of Agriculture and Environmental Affairs. These databases were refined for their coverage and applicability, and the refined list was then mapped for the following development potential zones:

- Conservation zones (Category 3) – should be conserved.
- Conservation with low impact development zones (Category 2) – additional conservation zones, but can be developed with authorization.
- Development zones (Category 1) – can be developed, but authorizations may apply.

The analysis of sensitivity excluded areas that were under formal protection (Protected areas), as well as the mapped extent of the Urban areas that are currently transformed. The various databases were then overlaid, and the combined score for each property was collated. Areas that were mapped as wetland or estuaries were immediately given Category 3 status. In addition, all riparian areas (rivers, streams and associated buffers) were given higher status than the surrounding features due to the need to conserve water resources, as highlighted in the RNIDP, RNSDF, RNEMP and Ugu CCRS.

16.1.3. ENVIRONMENTAL ELEMENTS

The following environmental elements were mapped as part of the SEA analysis.

- NFEPA wetlands – as mapped at a national level and considered high priority for the water conservation of South Africa.
- Wetlands mapped by Ray Nkonyeni Municipality – as mapped through various studies undertaken by various departments and private developments.
- Wetlands mapped by Ugu Municipality – as mapped through various spatial plans, and through various developments.
- Rivers and Streams and associated buffers – as mapped in the Ugu EMF datasets, as well as the Ezemvelo datasets.
- Estuaries – as mapped in the Ray Nkonyeni datasets.
- Agricultural sensitivity – as mapped in the Ugu EMF datasets.
- Protected Area expansion zones – as mapped in the Ezemvelo KZN Wildlife datasets.
- Urban Development Zones – as mapped in the RNMSDF, as well as the Ugu EMF datasets
- Terrestrial Sensitivity (vegetation and faunal) – as mapped in the Ugu EMF datasets
- Landuse mapping – as mapped in the RNMSDF
- Biodiversity – as mapped by Ezemvelo KZN Wildlife.

A number of the above-mentioned databases are detailed further below.

16.1.4. BIODIVERSITY AND PROTECTED AREAS

The biodiversity and protected areas applicable to the study area were identified through using Ezemvelo KZN Wildlife (2016) CBA and Protected Area Shapefile Data.

The C-Plan is a systematic conservation-planning package that runs with the GIS software ArcGIS, and which analyses biodiversity features and landscape units. C-Plan is used to identify a national reserve system that will satisfy specified conservation targets for biodiversity features (Ezemvelo KZN Wildlife, 2010). Biodiversity features can be land

classes or species, and targets that are set within area units either for land classes, or as numbers of occurrences of species for species locality data sets (Ezemvelo KZN Wildlife, 2010). These units or measurements are used as surrogates for un-sampled data. The C-Plan is an effective conservation tool when determining priority areas at a regional level and is being used in South Africa to identify areas of high conservation value. The SEA (Goodman, 2004) modelled the distribution of a selection of 255 red data and endemic species that have the potential to occur in the area.

16.1.5. IRREPLACEABILITY ANALYSIS

The following is referenced from Goodman (2004): "The first product of the conservation planning analysis in C-Plan is an irreplaceability map of the planning area, in this case the province of

KwaZulu-Natal. This map is divided into grid cells called 'Planning Units'.

Each planning unit has associated with it an 'Irreplaceability Value', which is a reflection of the planning units' importance with respect to the conservation of biodiversity. Irreplaceability reflects the planning unit's ability to meet set 'targets' for selected biodiversity 'features'. The irreplaceability value is scaled between 0 and 1.

Irreplaceability value – 0. Where a planning unit has an irreplaceability value of 0, all biodiversity features recorded here are conserved to the target amount, and there is unlikely to be a biodiversity concern with the development of the site. This of course will require ground truthing to determine the biodiversity features at a finer scale.

Irreplaceability value – 1. These planning units are referred to as totally irreplaceable and the conservation of the features within them is critical to meet conservation targets. (EIA very definitely required and depending on the nature of the proposal unlikely to be granted).

Irreplaceability value > 0 but < 1. Some of these planning units are still required to meet biodiversity conservation targets. If the value is high (e.g. 0.9) then most units are required (few options available for alternative choices). If the value is low, then many options are available for meeting the biodiversity targets. (EIA required and depending on the nature of the proposed development, permission could be granted)."

The irreplaceability units have been optimised further to create various subcategories called Critical Biodiversity Areas and Ecological Support Areas (Ezemvelo KZN Wildlife, 2014).

16.1.6. NFEPA WETLANDS

NFEPA was a three-year partnership project between South African National Biodiversity Institute (SANBI), CSIR, Water Research Commission (WRC), Department of Environmental Affairs (DEA), Department of Water Affairs (DWA), Worldwide Fund for Nature (WWF), South African Institute of Aquatic Biodiversity (SAIAB) and South African National Parks (SANParks) (Van Deventer et al., 2010). NFEPA map products provide strategic spatial priorities for conserving

South Africa's freshwater ecosystems and supporting sustainable use of water resources. These strategic spatial priorities are known as Freshwater Ecosystem Priority Areas, or FEPAs.

FEPA maps and supporting information form part of a comprehensive approach to sustainable and equitable development of South Africa's scarce water resources. They provide a single, nationally consistent information source for incorporating freshwater ecosystem and biodiversity goals into (two) 2 planning and decision-making processes. For integrated water resource management, the maps provide guidance on how many rivers, wetlands and estuaries, and which ones, should remain in a natural or near-natural condition to support the water resource protection goals of the National Water Act (Act No. 36 of 1998; RSA, 1998a). FEPA maps are therefore directly applicable to the National Water Act, feeding into Catchment Management Strategies, classification of water resources, reserve determination, and the setting and monitoring of resource quality objectives. FEPA maps are

also directly relevant to the National Environmental Management: Biodiversity Act (Act No. 10 of 2004; RSA, 2004) (hereafter referred to as the Biodiversity Act), informing both the listing of threatened freshwater ecosystems and the process of bioregional planning provided for by this Act. FEPA maps support the implementation of the National Environmental Management: Protected Areas Act (Act No. 57 of 2003; RSA, 2003) (hereafter referred to as the Protected Areas Act) by informing the expansion of the protected area network. They also inform a variety of other policies and legislation that affect the management and conservation of freshwater ecosystems, including at the municipal level.

FEPAs are strategic spatial priorities for conserving freshwater ecosystems and supporting sustainable use of water resources. FEPAs were determined through a process of systematic biodiversity planning and were identified using a range of criteria for conserving ecosystems and associated biodiversity of rivers, wetlands and estuaries.

FEPAs are often tributaries and wetlands that support hard-working large rivers and are an essential part of an equitable and sustainable water resource strategy. FEPAs need to stay in a good condition to manage and conserve freshwater ecosystems, and to protect water resources for human use. This does not mean that FEPAs need to be fenced off from human use, but rather that they should be supported by good planning, decision-making and management to ensure that human use does not impact on the condition of the ecosystem. The current and recommended condition for all river FEPAs is A or B ecological category. Wetland FEPAs that are currently in a condition lower than A or B should be rehabilitated to the best attainable ecological condition.

16.1.7. DEVELOPMENT IMPLICATIONS AND RECOMMENDATIONS

The implications for development on any property identified as environmentally affected, is that such a development must comply with the applicable legislative provisions of the National Environmental Management Act (NEMA) and all other applicable legislative provisions including, but not limited to the Municipality's adopted bylaws.

The coastal portion of the study area falls within a formal land use scheme and is governed by the applicable provisions. From a land use perspective, the area within the scheme appears largely developed.

It would appear that the municipality has demonstrated its commitment towards preserving environmentally sensitive areas within the scheme by having certain properties zoned ''Active or

Passive Public Open Spaces''. These comprise both government and privately owned properties. Open Space Systems are a linkage of various ecological systems (i.e. marine, terrestrial and freshwater) ensuring that the interaction between plants, animals, energy, water nutrients and genetic material can occur in a dynamic and relatively undisturbed manner. It is both a means to conserve indigenous flora and fauna, and an important step in maintaining ecological balance within the municipality. Open Spaces consists of two main types namely urban open spaces and natural open spaces.

Apart from the open space designations referred to herein above which, to some extent are intended to preserve certain land parcels, there are other properties that contain zones which ordinarily could be developed but are subject to certain environmental considerations. In this regard, the implications for any development on such properties are that the requisite environmental authorisations/clearances need to be obtained despite such sites having zones that normally would permit development in accordance with the applicable development controls.

A zone sets out what the maximum permissible development potential of a property comprises, however, the extent to which the development potential may be fully exercised is also dependent on the ability of a proposal to comply with all other legislative and or municipal provisions. To this extent, certain properties may very well be partially sterilized by virtue of the prevailing environmental conditions or legislative provisions.

With regard to properties located outside the scheme area, the municipality is in the process of developing a Land Use Policy to serve as a development framework firstly, to provide guidance on how the Municipality ought to deal with development applications in such areas

and secondly, as an incremental approach to ultimately developing a wall-to-wall scheme as per the requirements of the Spatial Planning Land Use Management Act (SPLUMA) No 16 of 2013.

Notwithstanding the policy, any development outside of the scheme is similarly subject to the applicable legislative provisions and for those that are identified as comprising environmental sensitivities or being considered a trigger in terms of NEMA and the Municipality's bylaws, the appropriate authorisation/s is required.

In summary, the implications for any development irrespective of whether a property is zoned or not, is that where the subject property requires an environmental authorisation (of any sort) no development may be contemplated until such time that a successful authorisation has been received, together with any other relevant approvals that may be required.

It is recommended that a field verification exercise be undertaken to identify the substantial wetland resources that are currently unmapped within the available databases. At the minimum, it is recommended that a municipal wide desktop mapping exercise be undertaken before the next iteration of this report is due. Similarly, a more detailed vegetation analysis across the municipality should be undertaken to ensure that appropriate levels of confidence can be attributed to mapped vegetation types, and the functionality thereof can be assessed. The recent floods have highlighted the need for improved disaster management within the area, and as such, it is recommended that a comprehensive floodline assessment be undertaken for the entire municipal area. This will have the added benefit of also informing the disaster management planning, as well as the spatial planning of the municipality.

16.1.8. SUMMARY

Based on the foregoing, the following may be concluded with regard to the Ray Nkonyeni Municipality study area.

The spatial suite of plans applicable to the study area suggests that the area plays a dualistic role within the municipality. The first, being for those areas located within the scheme, will develop in accordance with the scheme provisions and secondly, for the areas outside the scheme, these have been identified predominantly for agriculture, nature based tourism activities, and rural housing with subsistence agriculture. In essence, the areas outside of the scheme appear to be advanced for low intensity type development.

The coastal portions of the study area are already built up and appropriate interventions to set aside environmentally sensitive areas have been put in place through appropriate land use scheme mechanisms and zones. Notwithstanding this, even where a property may enjoy zoning rights, should such property be subjected to any environmental requirements, the extent to which the property may be developed to its maximum potential will be dependent on the ability to comply with all other laws, which may have the impact of sterilizing a portion or the whole property. In regard to areas that are located outside the scheme boundary, more particularly, the western portion of the study area, it is recommended that the area maintains its agricultural and natural character as advanced by the Municipality's adopted strategic plans.

The Municipality's strategic documents and associated environmental datasets comprise some detail and information to assist in making informed choices and decisions particularly with regards to promoting environmental sustainable and conscious development initiatives. The municipal area, if developed in accordance with adopted plans, will result in sustainable, environmentally conscious and purposeful initiatives that balances economic needs, Municipality's vision, ecological and environmentally conscious development. However, the need exists to undertake detailed field verification of wetland and vegetation resources, as well a comprehensive floodline assessment, across the municipality before the next iteration of the SEA is undertaken.

17. MONITORING AND EVALUATION FRAMEWORK

Table 42: Monitoring and Evaluation Framework

OBJECTIVE	PERFORMANCE INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS
1. Environmental Management	a) Established programmes for clearing of invasive aliens through Working for Water, or other forms of rehabilitation e.g. through Working for Wetlands and Land Care. b) Established environmental management programs. c) Effective Water Resource Management d) Delineation of flood risk areas e) Establishment of protected areas f) Catchment management g) Alien plant management h) Protected area development i) Wetland management j) Biodiversity zones	a) 1:50 years and 1:100-year flood lines. b) People removed from flood risk areas. c) Developed Water Resource Management Strategy d) Improved sanitation and waste management infrastructure and services in primary nodal areas. e) Rehabilitated wetlands and riparian zones. f) Catchment management programme. g) Participation in national catchment management initiatives. h) Application of carrying capacity standards to grazing land management. i) Amount of land cleared of alien plants. j) Programme to remove alien plants. k) Initiatives to rehabilitated land affected by soil erosion. l) Protection of indigenous forestry. m) Proclamation of environmentally sensitive areas that are not currently protected. n) Delineation of all major wetlands. o) Observation of a 100m buffer from each wetland. p) Management of bio-diversity corridors. q) Environmental overlays.	The municipality must work with all stakeholders towards an environmentally sustainable development.

2. Regional Access and Road Network	a) Upgrading of major access and arterial/link roads. b) Improving access to the existing and growing settlements. c) Creating new linkages. d) Location of development nodes along and at the intersection of key roads. e) Focusing development projects on settlements located along strategic roads.	a) Number and location of roads upgraded. b) KMs of roads upgraded. c) New roads. d) Number of high impact and catalytic projects located along development corridors. e) Type and level of services provided to settlements located along development corridors.	
3. Clustering Public Facilities and Economic Activities in Development Nodes	a) Development of service centres. b) Focusing strategic and high impact projects within development nodes. c) Promoting clusters of public facilities as a means to encourage nodal development.	a) Number, nature and budgets for municipal projects in each of these nodes. b) Level of access and location of public facilities serving different communities in these nodes. c) Availability of infrastructure in nodes to enable these to perform their role. d) Number of public facilities locating in identified service	Development nodes have potential to improve access to basic and public services.
4. Protection of agricultural land	a) High potential agricultural land b) Agricultural protection plans c) Agricultural development support	d) Identification and mapping of agricultural land with high potential. e) Size and use of high potential agricultural land Scheme clauses designed to protect high potential agricultural land. f) Introduction of land use controls for agricultural land. g) Initiatives to promote agriculture. h) Direct support to land reform projects.	Agricultural land is under threat from non-agricultural uses such as settlement.

5. Unlocking Economic Development	a) Tourism development b) Commercial & industrial development in nodal areas c) Number of Public Private Partnership Agreements signed	d) Increased investment in terms of commercial, tourism and leisure within Ray Nkonyeni. e) Branded Tourism Route. f) Introduction of new tourism products. g) Number of new tourism facilities and products located in Ray Nkonyeni. h) Commercial and industrial development applications received by the municipality. i) Percentage increase in commercial land. j) Uptake of commercial land in dense rural settlements	
6. Development of social and service infrastructure	a) Improved sanitation services and infrastructure b) Improved access to water c) Improved access to electricity d) Improved access to social facilities	a) All households access a health facility within a 5km radius. b) Number and location of new health facilities. c) Weakly mobile clinics d) Number of VIP's in rural areas e) Waterborne sanitation system in areas inside urban edge f) Piped water within the house in urban settlements g) Water on site or at least within a 200m from each household in dense rural settlements h) Eradication of electricity backlogs i) Number of new health facilities j) Number of new schools	The municipality must work together with government departments to improve the quality of life of residents through the development and improvement of social and service infrastructure.
7. Sustainable Spatial Planning System	a) The sustainable Spatial Planning System must be able to map out all the strategically located land parcels for packaging for commercial and tourism investments.	a) Council approved land use management system. b) Cooperation between traditional leaders and the municipality on land use management issues. c) Continuum of settlements from urban high density to remote low density settlements. Number of functional tertiary nodes. d) Availability of infrastructure in Ray Nkonyeni to enable the area to perform its role.	The municipality must refine the SDF and develop it further through the formulation of a series of plans with varying degrees of detail and flexibility.

6. Developing sustainable human settlements	a) Upgrading of informal settlements. b) Consolidation of settlements located along primary and secondary corridors. c) Level and type of infrastructure in each settlement. d) Implementation different types of housing projects.	a) Number of informal settlements upgraded. b) Number of consolidated settlements. c) Number of Integrated Residential Development packaged.	There is a need to improve the structure and form of settlements.

18. CONCLUSION

This report is the Reviewed Spatial Development Framework for Ray Nkonyeni Municipality and is the result of a series of spatial analysis, technical interactions with the relevant stakeholders as well as vital engagements with communities.

The Ray Nkonyeni SDF is intended to serve as the implementation and integration tool for the Ray Nkonyeni IDP Review for 2022/2023. It is expected that the revised Ray Nkonyeni SDF serves as the basis to inform planning and public investment within the municipality for the period 2022 to 2023 which will also be reviewed for the 2023/24 financial year.

ANNEXURE A: RAY NKONYENI CAPITAL INVESTMENT FRAMEWORK 2022/23

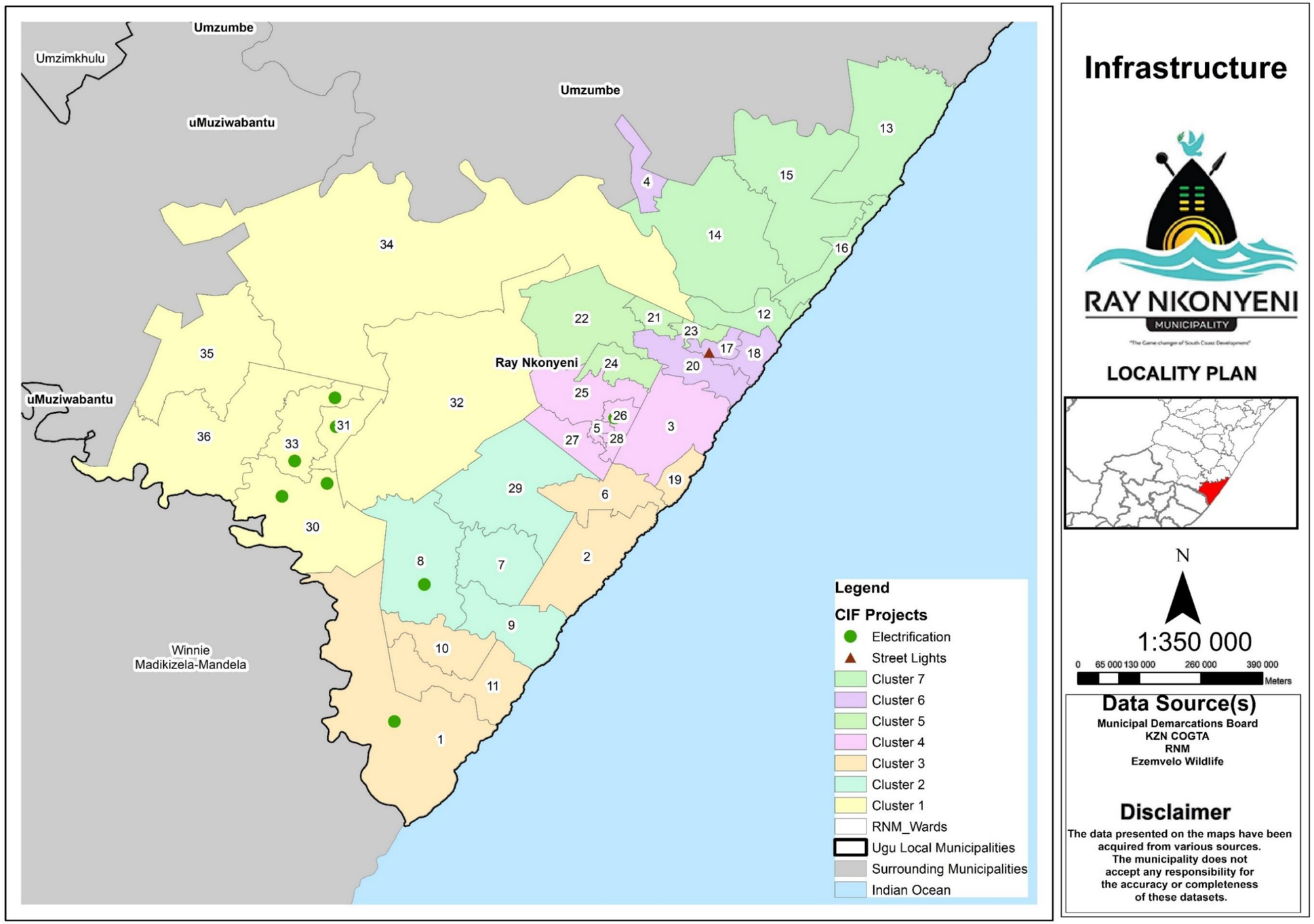
Table 43: Ray Nkonyeni CIF

PROJECTS/ PROGRAMMES				PHASED ANNUAL INVESTMENT COSTS			FUNDING		RESPONSIBILITY	
NUMBER	PRIORITY		LOCATION	2022/23	2023/24	2024/2025	GOVERNMENT SOURCE OF FUNDING	EXTERNAL	INTERNAL	
									HOD	COM
1.1		CLUSTER 1 (WARDS 30, 31, 32, 33, 34, 35, and 36)								
1.1.1		NTSHOMELA PEDESTRIAN BRIDGE (SGODANENI)	Ward 32	3 000 000	4 000 000	1 000 000	IUDG		X	
1.1.2		NKULU COMMUNITY HALL	Ward 36	4 000 000	3 000 000	1 000 000	IUDG		X	
1.1.3		SPORTSFIELD (MBENI)	Ward 31	4 000 000	5 000 000	3 000 000	IUDG		X	
1.1.4		ESIDLIDLINI PEDESTRIAN BRIDGE (DLOVINA)	Ward 31	150 000	0	0	IUDG		X	
1.1.5		LONJANI TO KHUMBUZA ROAD WARD 30	Ward 30	2 560 000	5 000 000	2 000 000	IUDG		X	
1.1.6		NSTALLATION OF MARKET STALLS - IZINGOLWENI		1 000 000	0	-	COGTA		X	
1.1.7		ELECTRIFICATION PROJECTS (CLUSTER 1)		3 000 000	0	-	COGTA		X	
1.1.8		BHAYIYA VEHICLE BRIDGE	Ward 33	500 000	3 000 000	-	IUDG			
1.1.9		MZENGE ROAD AND BRIDGE	Ward 34	500 000	3 000 000	-	IUDG			
1.1.10		BOMVINI SCHOOL ROAD	Ward 35	500 000	3 000 000	-	IUDG			
				19 210 000	42 000 000	36 000 000				
1.2		CLUSTER 2 (WARDS 7, 8, 9, and 29)								
1.2.1		NGQUMBELA ROAD AND CAUSEWAY	Ward 7	4 000 000	3 000 000	0	IUDG		X	
1.2.2		REPAIRS TO MBHELE PEDESTRIAN BRIDGE	Ward 29	1 000 000	0	-	IUDG		X	

1.2.3		DUMEZULU COMMUNITY HALL PHASE 2	Ward 8	4 000 000	2 500 000	0	IUDG		X	
1.2.4		MBHECUKA VEHICULAR BRIDGE	Ward 29	200 000	0	500 000	IUDG		X	
1.2.5		NHLANGENI VEHICULAR BRIDGE	Ward 9	500 000	3 000 000	-	IUDG			
1.2.6		BHAZABHAZA ELECTRIFICATION	Ward 8	1526 000	0	-	DOE			
				11226 000	8 500 000	500 000				
1.3		CLUSTER 3 (WARDS 1, 2, 6, 10, 11 and 19)								
1.3.1		PEDESTRIAN BRIDGE EXTENSION 3 WARD 6	Ward 6	1 000 000	2 500 000	1 000 000	IUDG		X	
1.3.2		REHABILITATION OF COLLEGE ROAD SOUTHBROOM WARD 2	Ward 2	4 000 000	3 000 000	3 000 000	IUDG		X	
1.3.3		NKANYEZINI ROAD	Ward 10	500 000	3 000 000	-	IUDG		X	
1.3.4		INSTALLATION OF MARKET STALLS - ST MICHAELS		1 000 000	0	-	COGTA		X	
1.3.5		NCUKENI ELECTRIFICATION WARD 1	Ward 1	345 0 000	0	-	DOE		X	
1.3.6		MANDLA MZELEMU ROAD - WARD 11	Ward	500 000	4 000 000	-	IUDG		X	
1.3.7		MARGATE AIRPORT UPGRADE	Ward 6	5 000 000	0	0	EDTEA			
1.3.8		RECONSTRUCTION OF MARGATE HALL	Ward 6	0	10 000	17 000 000				
1.3.9		OUTLANDS LANDFILL SITE (CELL 4C)		10 000 000	10 000 000	-	INTERNAL			
				25 45 00 00	35 500 000	24 000 000				
1.4		CLUSTER 4 (Wards 3, 5, 25, 26, 27 and 28)								
1.4.1		COMMUNITY PARK	Ward 5	500 000	-	-	IUDG		X	
1.4.2		ENKULU HALL	Ward 25	4 000 000	5 000 000	2 500 000	IUDG		X	
1.4.3		MSIKABA VEHICULAR	Ward 25	1 000 000	3 500 000	500 000	IUDG		X	
1.4.4		CORNER HOUSE RING ROAD	Ward 27	500 000	3 500 000	-	IUDG		X	
1.4.5		NKANGENI VEHICULAR BRIDGE	Ward 25	1 000 000	3 000 000	1 000 000	IUDG		X	
1.4.6		ZG HALL ROOF REPAIRS	Ward 28	800 000	0	-	IUDG		X	
1.4.7		THANGINI VILLAGE ELECTRIFICATION	Ward 26	2050 000	0	-	DOE		X	

1.4.8		WALKWAYS (SGEDLENI)	Ward 28	1 300 000	0	-	IUDG			
				10 650 000	16 800 000	5 000 000				
1.5		CLUSTER 5 (Wards 21, 22, 23, and 24)								
1.5.1		TATANE SPORTSFIELD	Ward 23	500 000	4 000 000	-	IUDG		X	
1.5.2		KWASITHOLE PEDESTRIAN/ VEHICULAR BRIDGE	Ward 21	400 000	0	500 000	IUDG		X	
1.5.3		MAZUBANE PEDESTRIAN BRIDGE	Ward 21	2 000 000	1 500 000	500 000	IUDG		X	
1.5.4		BAR TO NGWEMABALA PEDESTRIAN BRIDGE	Ward 24	2 500 000	3 000 000	300 000	IUDG		X	
1.5.5		MADALA TO MDLUNGWANA VEHICULAR BRIDGE	Ward 24	1 500 000	3 500 000	300 000	IUDG		X	
1.5.6		MBILI PEDESTRIAN BRIDGE	Ward 22	150 000	0	0			X	
				6 550 000	15 000 000	1 600 000				
1.6		CLUSTER 6 (Wards 4, 17, 18 and 20)								
1.6.1		NQWANE PEDESTRIAN BRIDGE (NGWABE)	Ward 20	100 000	0	0	IUDG		X	
1.6.2		MAZUBANE/DIKWE PEDESTRIAN BRIDGE	Ward 20	2 500 000	1 500 000	0	IUDG		X	
1.6.3		VALLEY ROAD VEHICULAR BRIDGE UPGRADE - WARD 18	Ward 18	500 000	3 500 000	-	IUDG		X	
1.6.4		MERLEWOOD STREETLIGHTS		400 000	0	0	IUDG		X	
1.6.5		NELSON MANDELA DRIVE		17 000 000	0	20 000 000	NATIONAL TREASURY		X	
1.6.6		MUNICIPAL VEHICLE POUND		5 000 000	5 000 000	5 000 000	INTERNAL		X	
1.6.7		MLB OFFICES	Ward 17	2 000 000	10 000 000	15 000 000	INTERNAL		X	
1.6.8		PORT SHEPTSONE CIVIC CENTRE UPGRADE		1 000 000	0	-	INTERNAL		X	
1.6.9		MAIN HARDING ROAD		29 000 000	0	20 000 000	NATIONAL TREASURY		X	
				57 600 000	6 000 000	60 000 000				

1.7		CLUSTER 7 (Wards 12, 13, 14, 15 and 16)								
1.7.1		LOUISIANA RING ROAD	Ward 14	8 500 000	5 000 000	1 000 000	IUDG		X	
1.7.2		INSTALLATION OF MARKET STALLS - HIBBERDENE		1 500 000	0	-	COGTA		X	
1.7.3		BANANA BEACH PEDESTRIAN BRIDGE	Ward 16	200 000	0	0	IUDG		X	
1.7.4		MVUZANE ROAD AND VEHICULAR BRIDGE	Ward 15	4 000 000	500 000	1 500 000	IUDG		X	
1.7.5		PEDESTRIAN BRIDGE (OVER SUGAR MILL ROAD)	Ward 12	3 000 000	2 000 000	500 000	IUDG		X	
				17 200 000	5 500 000	3 000 000			X	
1.8		MUNICIPAL WIDE PROJECTS								
1.8.1		ROADS RESEALS		4 000 000	5 000 000	6 000 000	IUDG		X	
1.8.2		STORMWATER - URBAN (INTERNAL)		3 000 000	3 500 000	4 000 000	INTERNAL		X	
1.8.3		STAFF DEPOT ABLUTION FACILITIES - PHASE 3		1 500 000	1 500 000	1 500 000	INTERNAL		X	
1.8.4		RURAL ROAD AND STORMWATER REHABILITATION (IUDG)		9 000 000	10 000 000	11 000 000	IUDG		X	
1.8.5		OUTDOOR GYM FACILITIES		500 000	1 000 000	1 000 000	IUDG		X	
1.8.6		INSTALLATION OF NEW STREET LIGHTS		1 500 000	1 000 000	1 000 000	IUDG		X	
1.8.7		INSTALLATION OF WATER TANKS WITHIN MUNICIPAL OFFICES		1 000 000	1 500 000	1 500 000	INTERNAL		X	
1.8.8		ENERGY EFFIECENCY AND DEMAND SIDE MANAGEMENT		5 000 000	0	6 000 000	DOE ENERGY EFFICIENCY		X	
1.8.9		RATIONALISATION OF OFFICE SPACE (WELLNESS CENTRE)		1 000 000	0	-	INTERNAL			
				26 500 000	36 800 000	46 000 000				
		TOTAL CLUSTER CAPITAL		174 386 000	166 100 000	176 100 000				
		TOTAL DEPARTMENTAL CAPITAL								
		TOTAL CAPITAL BUDGET		174 386 000	166 100 000	176 100 000				



Infrastructure

RAY NKONYENI
MUNICIPALITY
"The Game changer of South Coast Development"

LOCALITY PLAN

N

1:350 000

0 65 000 130 000 260 000 390 000
Meters

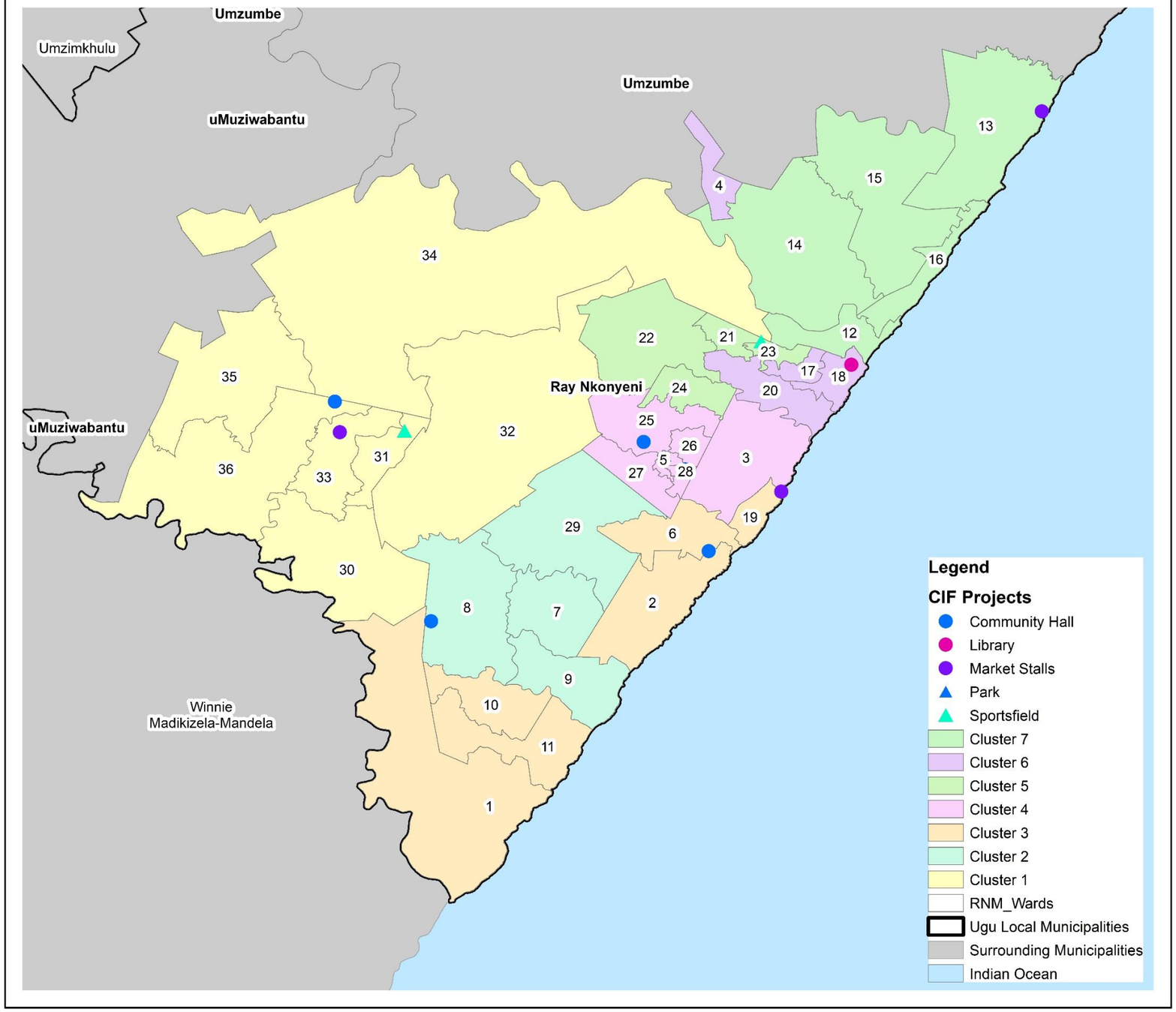
Data Source(s)

Municipal Demarcations Board
KZN COGTA
RNM
Ezemvelo Wildlife

Disclaimer

The data presented on the maps have been acquired from various sources. The municipality does not accept any responsibility for the accuracy or completeness of these datasets.

Map 33: Infrastructure



Community Projects

RAY NKONYENI
MUNICIPALITY
"The Game changer of South Coast Development"

LOCALITY PLAN

N

1:350 000

0 65 000 130 000 260 000 390 000
Meters

Data Source(s)

Municipal Demarcations Board
KZN COGTA
RNM
Ezemvelo Wildlife

Disclaimer

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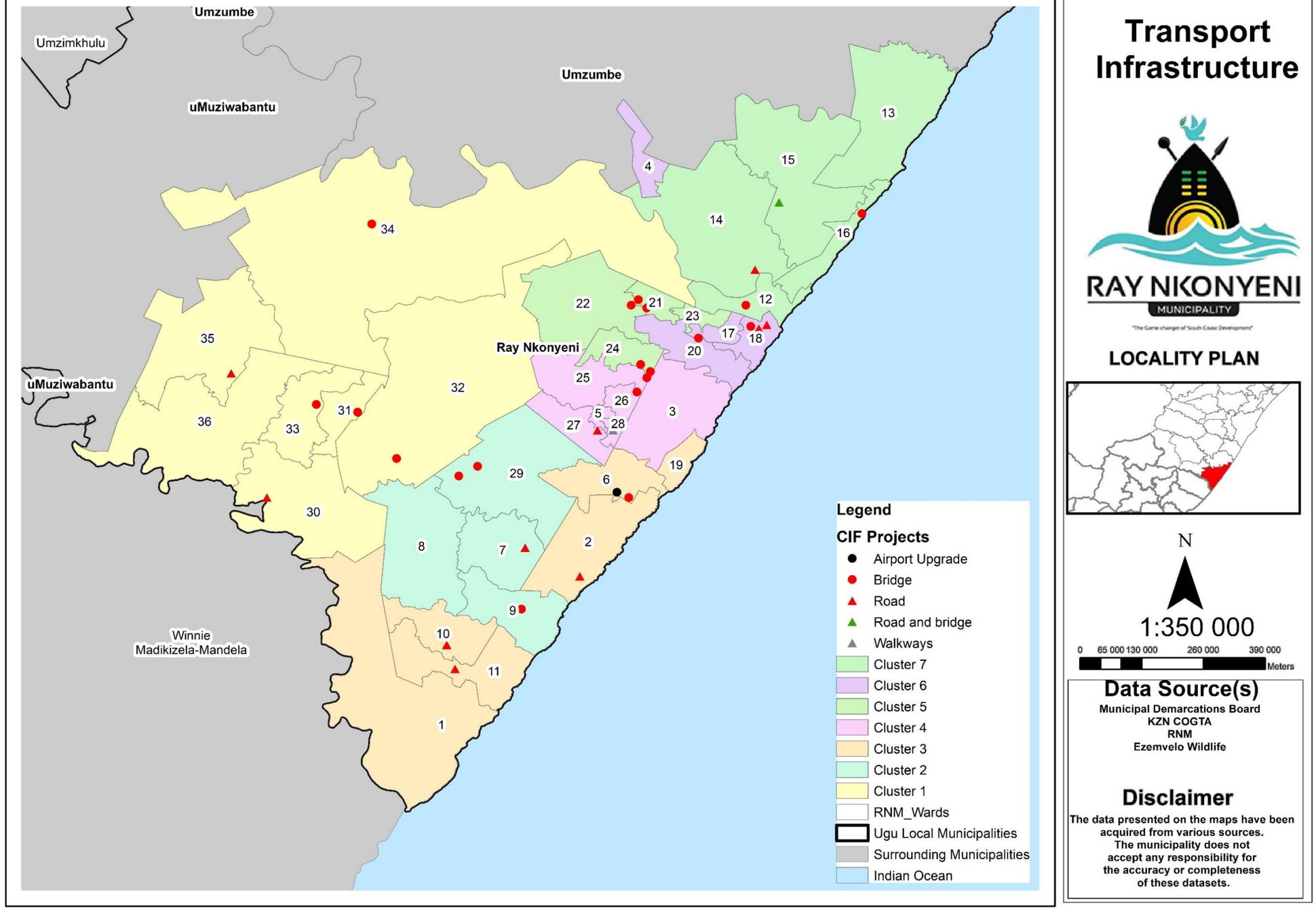
Map 34: Community Projects



Transport Infrastructure

RAY NKONYENI MUNICIPALITY

"The Game changer of South Coast Development"

LOCALITY PLAN

N

1:350 000

0 65 000 130 000 260 000 390 000 Meters

Data Source(s)

Municipal Demarcations Board
KZN COGTA
RNM
Ezemvelo Wildlife

Disclaimer

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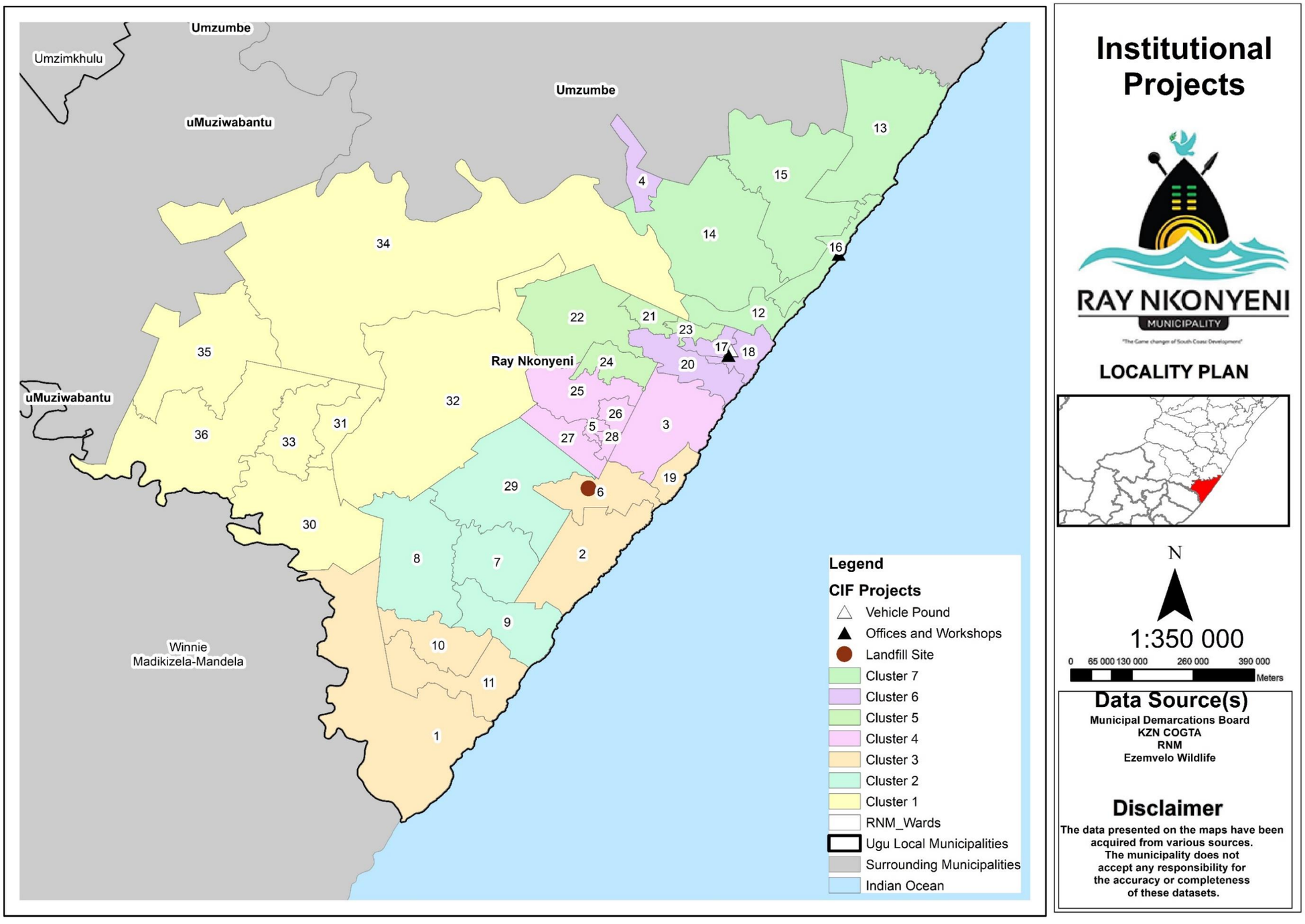
Map 35: Transport Infrastructure



Institutional Projects

RAY NKONYENI MUNICIPALITY

"The Game changer of South Coast Development"

LOCALITY PLAN

N

1:350 000

0 65 000 130 000 260 000 390 000 Meters

Data Source(s)

Municipal Demarcations Board
KZN COGTA
RNM
Ezemvelo Wildlife

Disclaimer

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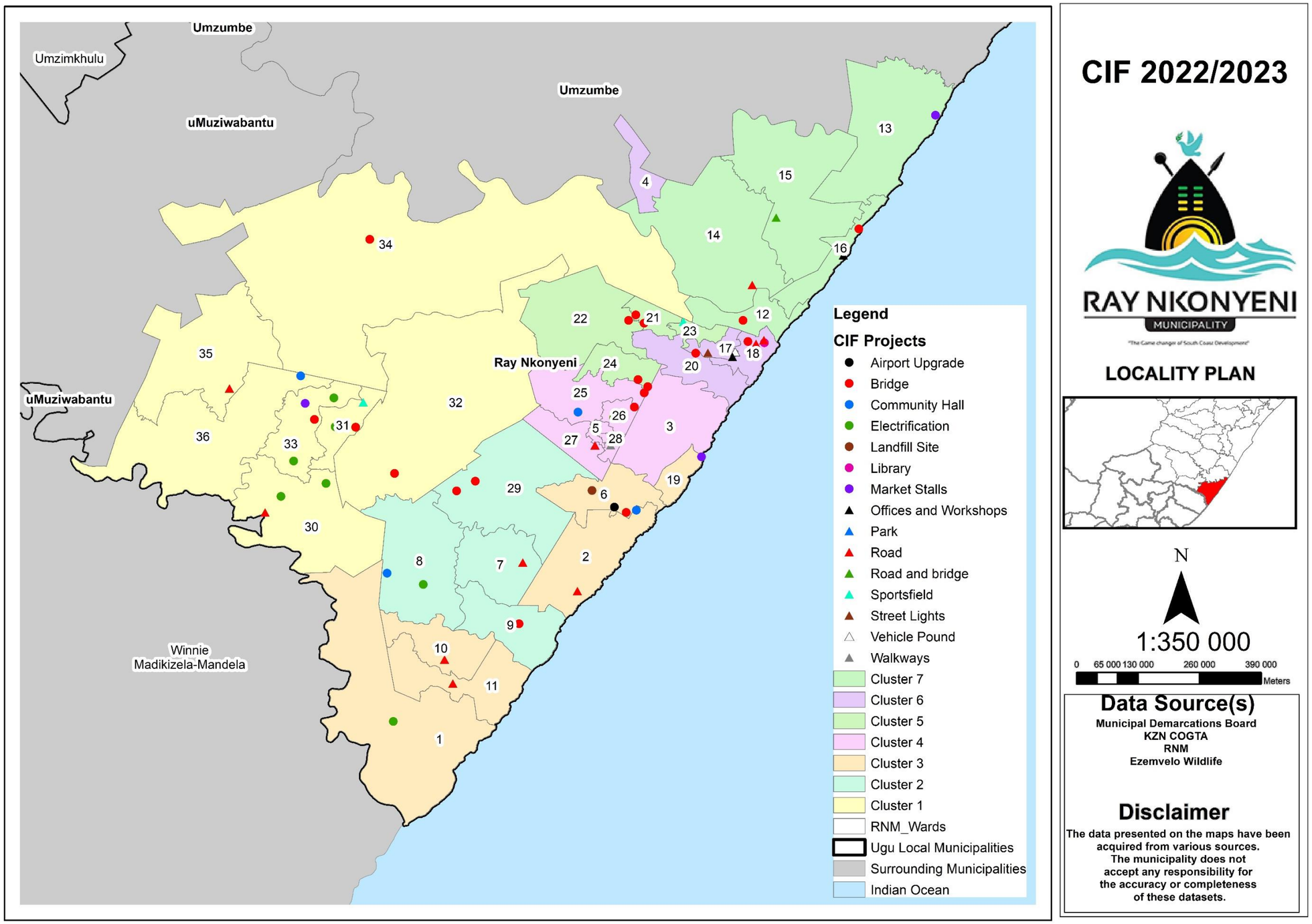
Map 36: Institutional Projects



CIF 2022/2023

RAY NKONYENI MUNICIPALITY

"The Game changer of South Coast Development"

LOCALITY PLAN

N

1:350 000

0 65 000 130 000 260 000 390 000 Meters

Data Source(s)

Municipal Demarcations Board
KZN COGTA
RNM
Ezemvelo Wildlife

Disclaimer

The data presented on the maps have been acquired from various sources. The municipality does not accept any responsibility for the accuracy or completeness of these datasets.

Map 37: Ray Nkonyeni CIF 2022/23

ANNEXURE B: IMPLEMENTATION PLAN

Table 44: Implementation Plan

PROJECT NAME	LOCATION	PLANNED ACTIVITY 2022/2023	PAYMENT SCHEDULE / DRAWDOWN REQUESTS (Rands)			FUNDER / POTENTIAL FUNDER	TOTAL BUDGET FOR THE 2022-2023 FINANCIAL YEAR (Rands)
			JULY 2022	OCTOBER 2022	MARCH 2023		
PROPOSED TRANCHE			**R30 000 000**	**R36 131 000**	**R15 229 000**		
COMMUNITY HALL	Ward 36	CONSTRUCTION				IUDG	R4 000 000
NTSHOMELA PEDESTRIAN BRIDGE (SGODANENI)	Ward 32	CONSTRUCTION				IUDG	R3 000 000
SPORTSFIELD (MBENI)	Ward 31	CONSTRUCTION				IUDG	R4 000 000
ESIDLIDLINI PEDESTRIAN BRIDGE (DLOVINA)	Ward 31	CONSTRUCTION				IUDG	R150 000
LONJANI TO KHUMBUZA ROAD	Ward 30	TENDER				IUDG	R2 560 000
BHAYIYA VEHICLE BRIDGE	Ward 33	DESIGN AND TENDER				IUDG	R500 000
MZENGE ROAD AND BRIDGE	Ward 34	DESIGN AND TENDER				IUDG	R500 000
BOMVINI SCHOOL ROAD	Ward 35	DESIGN AND TENDER				IUDG	R500 000
NGQUMBELA BRIDGE	Ward 7	CONSTRUCTION				IUDG	R4 000 000
REPAIRS TO MBHELE PEDESTRIAN BRIDGE	Ward 29	DESIGN, TENDER AND CONSTRUCTION				IUDG	R1 000 000
DUMEZULU COMMUNITY HALL PHASE 2	Ward 8	CONSTRUCTION				IUDG	R4 000 000
MBHECUKA VEHICULAR BRIDGE	Ward 29	CONSTRUCTION				IUDG	R200 000
NHLANGENI VEHICULAR BRIDGE	Ward 9	DESIGN AND TENDER				IUDG	R500 000
PEDESTRIAN BRIDGE EXTENSION 3	Ward 6	CONSTRUCTION				IUDG	R1 000 000
REHABILITATION OF COLLEGE ROAD SOUTHBROOM	Ward 2	CONSTRUCTION				IUDG	R4 000 000
NKANYEZINI ROAD	Ward 10	DESIGN AND TENDER				IUDG	R500 000
MANDLA MZELEMU ROAD	Ward 11	DESIGN AND TENDER				IUDG	R500 000
RECONSTRUCTION OF MARGATE HALL	Ward 6	DESIGN AND TENDER				IUDG	R200 000

COMMUNITY PARK	Ward 5	DESIGN, TENDER AND CONSTRUCTION				IUDG	R500 000
ENKULU HALL IN	Ward 25	CONSTRUCTION				IUDG	R4 000 000
MSIKABA VEHICULAR	Wars 25	CONSTRUCTION				IUDG	R1 000 000
CORNER HOUSE RING ROAD -	Ward 27	DESIGN AND TENDER				IUDG	R500 000
NKANGENI VEHICULAR BRIDGE	Ward 25	CONSTRUCTION				IUDG	R1 000 000
ZG HALL ROOF REPAIRS -	Ward 28	DESIGN, TENDER AND CONSTRUCTION				IUDG	R800 000
WALKWAYS (SGEDLENI)	Ward 28	DESIGN, TENDER AND CONSTRUCTION				IUDG	R1 300 000
TATANE SPORTSFIELD	Ward 23	DESIGN AND TENDER				IUDG	R500 000
KWASITHOLE PEDESTRIAN/ VEHICULAR BRIDGE	Ward 21	CONSTRUCTION				IUDG	R400 000
MAZUBANE PEDESTRIAN BRIDGE	Ward 21	CONSTRUCTION				IUDG	R2 000 000
MADALA TO MDLUNGWANA VEHICULAR BRIDGE	Ward 24	CONSTRUCTION				IUDG	R2 500 000
BAR TO NGWEMABALA PEDESTRIAN BRIDGE WARD 24	Ward 24	CONSTRUCTION				IUDG	R1 500 000
MBILI PEDESTRIAN BRIDGE WARD 22	Ward 22	CONSTRUCTION				IUDG	R150 000
MAZUBANE/DIKWE PEDESTRIAN BRIDGE WARD 20	Wars 20	CONSTRUCTION				IUDG	R2 500 000
VALLEY ROAD VEHICULAR BRIDGE UPGRADE - WARD 18	Ward 18	DESIGN AND TENDER				IUDG	R500 000
MERLEWOOD STREETLIGHTS		CONSTRUCTION				IUDG	R400 000
LOUISIANA RING ROAD (WARD 14)	Ward 14	CONSTRUCTION				IUDG	R8 000 000
BANANA BEACH PEDESTRIAN BRIDGE WARD 16	Ward 16	CONSTRUCTION				IUDG	R700 000
MVUZANE ROAD AND VEHICULAR BRIDGE WARD 15	Ward 15	CONSTRUCTION				IUDG	R4 000 000
WARD 12 PEDESTRIAN BRIDGE (OVER SUGAR MILL ROAD)	Ward 12	CONSTRUCTION				IUDG	R3 000 000
RURAL ROAD AND STORMWATER REHABILITATION (IUDG)		CONSTRUCTION				IUDG	R9 000 000

ROADS RESEALS		CONSTRUCTION				IUDG	R4 000 000
OUTDOOR GYM FACILITIES		DESIGN, TENDER AND CONSTRUCTION				IUDG	R500 000
INSTALLATION OF NEW STREET LIGHTS		CONSTRUCTION				IUDG	R1 500 000
	TOTALS		**R30 000 000**	**R36 131 000**	**R15 229 000**		**R81 360 000**

ANNEXURE C: MUNICPAL NOTICE AS PER SPLUMA

RAY NKONYENI
MUNICIPALITY

MUNICIPAL NOTICE: 076 of 2022

INVITATION FOR PUBLIC COMMENTS ON THE DRAFT SPATIAL DEVELOPMENT FRAMEWORK 2022/2023

The Spatial Development Framework (SDF) of the Ray Nkonyeni Local Municipality has been drafted to guide the Municipality in the implementation of its vision, mission and developmental objectives contained in the Ray Nkonyeni Integrated Development Plan.

The Municipality invites all stakeholders to submit written comments as per Section 26 (e) of the Municipal Systems Act, 2000 (Act No. 32 of 2000) and Section 21 3(b) of the Spatial Planning and Land Use Management Act, 2013 (Act No. 16 of 2013) regarding the Draft SDF which forms an important component of the Municipality`s IDP. The Spatial Development Framework depicts current and future land uses (as per the municipal designations) as well as the manner in which future development will be guided.

Copies of this document will be made available at the Ray Nkonyeni Local Municipal Offices at Uvongo and on the Ray Nkonyeni Municipal website www.rnm.gov.za from 07 April 2022 to 13 May 2022.

Written comments may be forwarded to Ms. Lindelwa Ndlela or Ms. Zamokuhle Mathenjwa on or before 13 May 2022.

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