DOKODWENI LOCAL AREA PLAN

FINAL REPORT 2016

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LIST OF ABBREVIATIONS

CAL		Coastal Access Land
CBD	-	Central Business District
CMP	-	Coastal Management Plan
COGTA		Cooperative Governance and Traditional Affairs
DEDTEA		Department of Economic Development, Tourism and Environmental Affairs
DM	-	District Municipality
DOH		Department of Human Settlements
Du/Ha		Dwelling Units per Hectare
ECD		Early Childhood Development
EIA	-	Environmental Impact Assessment
EMF	-	Environmental Management Framework
GDP		Gross Domestic Product
GGP	-	Gross Geographical Product
GIS	-	Geographical Information System
GPI		Gabhisa Planning Investments
GPS		Geographic Positioning System
FET		Further Education and Training
HIV/AIDS	-	Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome
ICMA		Integrated Coastal Management Act 24 of 2008
IDP	-	Integrated Development Plan
ISRDP		Integrated Spatial Regional Development Plan
KZN	-	KwaZulu-Natal
LAP		Local Area Plan
LED	-	Local Economic Development
LM	-	Local Municipality
LUMS		Land Use Management System
MEC		Member of the Executive Council
MFMA	-	Municipal Finance Management Act No. 56 of 2003
MIG	-	Municipal Infrastructure Grant
MOSS		Municipal Open Space System
MSA	-	Municipal Systems Act
NDP		National Development Plan
NEMA		National Environmental Management Act
NGP		National Growth Path
NSDP	-	National Spatial Development Perspective
PGDS		Provincial Growth and Development Strategy
PGDP		Provincial Growth Development Plan
PTO	-	Permission to Occupy
RCAM		Road Classification and Access Management Manual
SANRAL		South African Road Agency
SDF	-	Spatial Development Framework
SMME		Small, Medium and Micro Enterprise
SPLUMA		Spatial Planning and Land Use Management Act
TA	-	Tribal Authority

TOR	Terms of Reference
VIP	Ventilated Improved Pit

1. INTRODUCTION

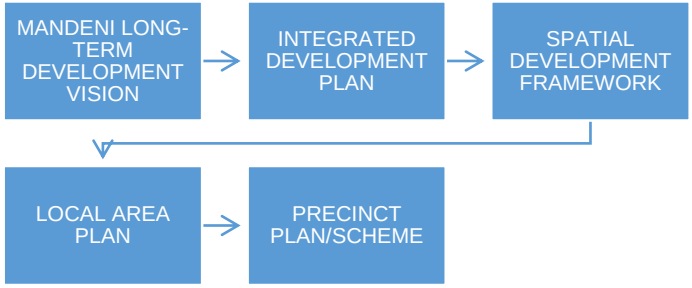
1.1. Purpose of this report

Gabhisa Planning and Investments (GPI) was appointed by Mandeni Local municipality (MLM) to prepare the Local Area Plan (LAP) for the Dokodweni study area. The Terms of Reference (TOR) noted that comprehensive LAPs are part of a suite of plans which form an inter-related hierarchy or continuum of plans. Furthermore the LAPs are intended to translate the broad development intentions of the Municipal Spatial Development Framework (SDF) into:

- geographically specific, physical development and land use proposals;
- focus on land use, transport, environmental and infrastructure implications;
- direct level, form and location of investment in the city and
- guide the preparation of the land use management system.

The following diagram demonstrates:

FIGURE 1: HIERARCHY OF PLANS



1.2. Need, Aim and Objective of the Project

1.2.1. Need for the Project

The need for the project was informed by legislative directives which are summarised as follows:

- Firstly, Section 26 (e) of the Municipal Systems Act, Act No. 32 of 2000 (MSA) stipulates that all municipalities are required to compile Spatial Development Frameworks (SDF) as an essential aspect of their Integrated Development Plans (IDP).
- Secondly, section 21 (l) of the Spatial Planning and Land Use Management Act, Act No. 16 of 2013 (SPLUMA) states that identifying the designation of areas in which more detailed local plans must be developed and shortened land use development procedures may be applicable and land use schemes may be so amended and ensure that sound empirical analysis and economically, socially, ecologically and institutionally sustainable.

Therefore the need for the development of the Dokodweni LAP was to prepare a sustainable, legally compliant and provide clear guidance for the development of the municipal area.

1.2.2. The Aim of the Project

The primary aim of this project was to assist MLM in formulating a Local Area Plan for the Dokodweni area. The core issues of the LAP were extracted from the Municipal SDF, Coastal Management Programme and District Environmental Management Framework and the more detailed analysis and translate this spatially into a plan The TOR summarizes the objectives as follows:

1.2.3. Objectives

The overall objectives of the study can be summarised as follows:

- A basic Land Use Framework which will guide the formulation of a land use scheme
- Link to parallel and sectorial plans
- Main catchments and biodiversity
- Movement hierarchy, existing and new
- Urban form framework
- Access and movement system
- Broad land uses i.e. open space system, residential, commercial, and activity structure.
- Infrastructure framework (water, sanitation, roads , storm water and electricity)
- Environmental Management Framework
- The outline of land uses
- The role of the local area
- Urban design Guidelines and landscaping

1.3. Methodology

In developing the LAP for Dokodweni study area, one has to also consider the theme “The African Beach destination” which was captured from the Municipal Tourism Strategy. The methodology undertaken is as follows:

- Desktop studies
- Development of Vision, objectives and strategic framework based on issues identified in the Situational Analysis
- Application of Urban Design principles
- GIS Mapping
- Stakeholder input

The following milestones are adopted from the TOR:

- Phase 1: Inception Report
- Phase 2: Credible Status Quo Report [Situational Analysis and Contextual Report]
- Phase 3: Synthesis of Issues and Spatial Framework [Conceptual Report]
- Phase 4: The Draft Local Area Plan and Development Plan
- Phase 5: Approval Process
- Phase 6: Implementation, Monitoring and Evaluation Process
- Phase 7: Close-out Process

The following diagram demonstrates the process undertaken.

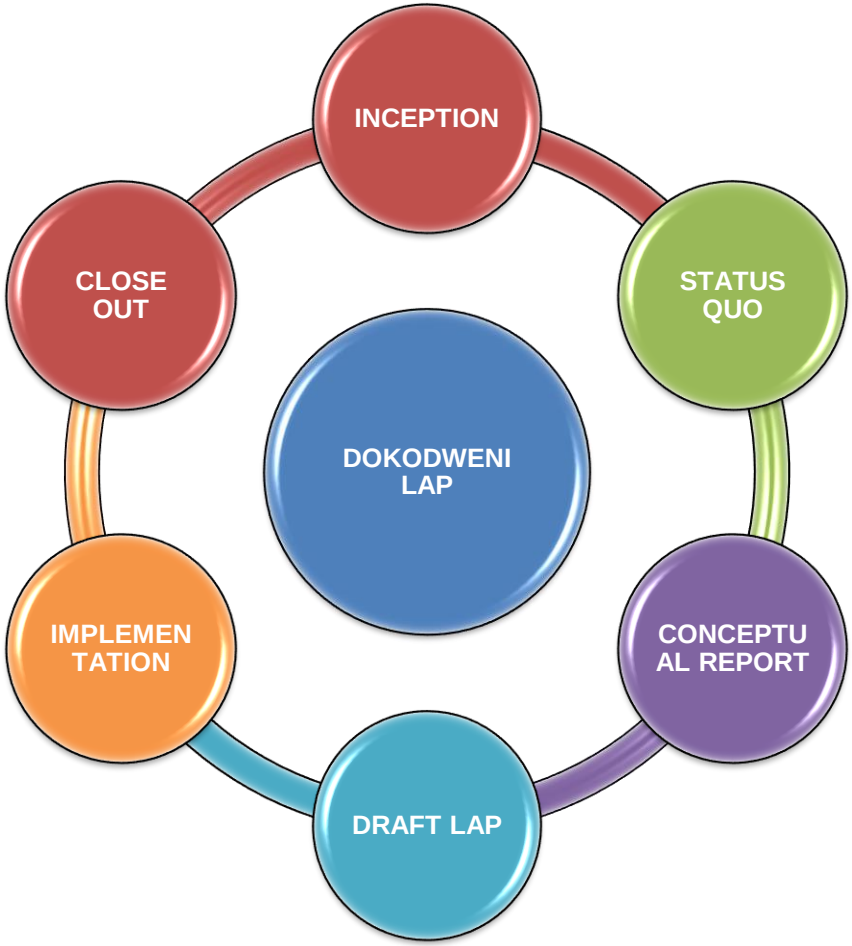


FIGURE 2: PLANNING PROCESS

1.4. Consultative process

Consultation of stakeholders was highlighted as fundamental in the TOR. The establishment of a technical Project Steering Committee (PSC) was one step in ensuring that all relevant role players within the municipality and other government departments are consulted. The PSC is made up of the following stakeholders:

- Mandeni Local municipality
- Ilembe District Municipality
- Department of Economic Development, Tourism and Environmental Affairs,
- KZN Cooperative Governance and Traditional Affairs

The consultative process is such that a report and presentation is done for each and every phase that has been completed.

FIGURE 3: MEETING WITH WARD 1 COMMITTEE AT MANGQAKAZA HALL

The following table provides the timeline of feedback reporting to the PSC:

NO.	ACTIVITY	DATE
1.	Inception meeting	12 May 2015
2.	Status Quo	15 July 2015
3.	Concept	19 August 2015
4.	Draft LAP & Implementation	11 November 2015
5.	Close Out	16 March 2016

TABLE 1: PSC MEETINGS

As far as other stakeholders are concerned, the following were consulted:

- Ward 1 Committee was consulted since the project falls within their ward.
- Macambini Traditional Council was also consulted since they own the land in which the project falls under.

The following table shows the meetings held with the ward committee and Macambini Traditional Council:

NO.	ACTIVITY	DATE
1.	Meeting with Ward 1 committee	3 July 2015
2.	Meeting with Macambini Traditional Council	22 September 2015

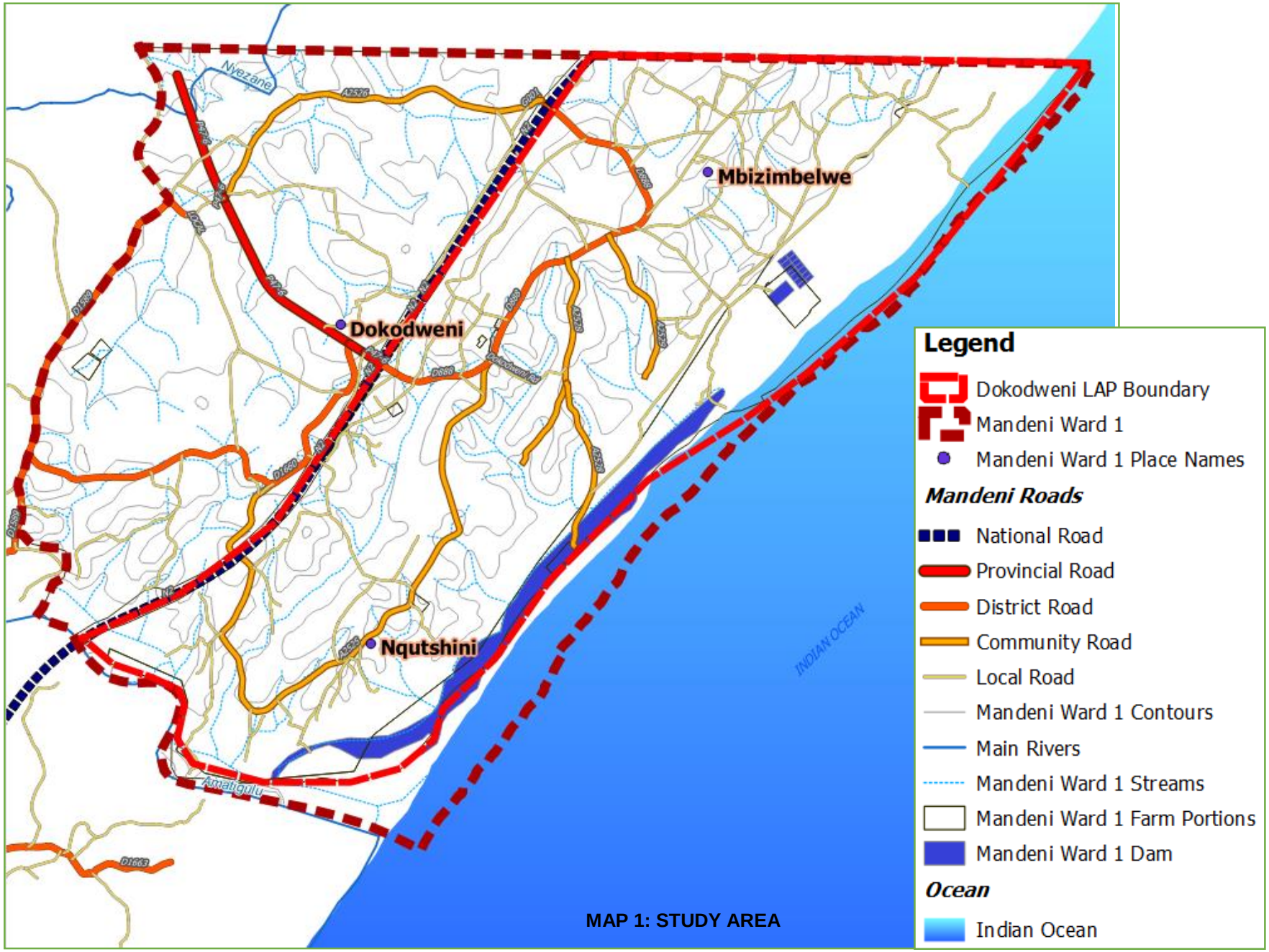
TABLE 2: MEETINGS WITH WARD COMMITTEE & TC

1.5. Defining the study area

The study area is located in Ward 1 of MLM. It measures approximately 1980 ha in extent. It is bounded on the north by Gingindlovu which falls under uMlalazi LM; on the south of the site is the Amatikulu River; on the west is the N2 Highway and areas such as Ingulule; whilst on the east is the Indian Ocean. The study area is accessible on the west through the N2 which off ramps and joins P47-6/D888 leading into the area. The study area also falls under the jurisdiction of Macambini Traditional Authority. The following are sub areas that fall within the study area:

- Dokodweni
- Mbizimbelwe
- Nqutshini

Due to the fact that the name “Dokodweni” also refers to isigodi, for the purposes of this report, the study area will hereafter be referred to as “Dokodweni study area.”



MAP 1: STUDY AREA

1.6. Summary of issues

The following presents the summary of issues identified during the situational analysis.

- Poor access roads
- Lack of access to water means communities with many households still relying heavily on water sources that are prone to contamination.
- There is no waterborne sewerage. Households make use of VIP pit latrines.
- Many households are serviced with electricity within the study area. However there few households who still rely on traditional ways to produce energy.
- There is a mixture of formal and traditional housing typologies. Some settlements are located on harsh topographical conditions and environmental sensitive areas which raises safety concerns.
- Existing social facilities are evenly distributed. However there is a need for certain types of facilities which will reduce the travelling cost for people to access them.
- Economic sectors within the study area include agriculture, manufacturing, tourism and trade.

2. LEGISLATIVE AND POLICY REQUIREMENT

2.1. National context

2.1.1. Constitution of the Republic of South Africa (1996)

The Constitution is the overarching legislative document in South Africa. It is supreme in that it supersedes all other laws meaning citizens of South Africa may contest any law that contravenes the Constitution. There many aspects covered in the Constitution, however for the purposes of developing the Mandeni LAP, it is important to highlight the following:

- Bill of Rights
- Local Government (as a sphere of Government)

Chapter 2 of the Constitution contains the Bill of Rights which entrench certain basic rights for all citizens of South Africa including: “The right to have access to adequate housing” (Article 26), where “adequate housing” is defined in the RDP White Paper of November 1994, in the following terms: "As a minimum, all housing must provide protection from weather, a durable structure, and reasonable living space and privacy. A house must include sanitary facilities, storm water drainage, a household energy supply, and convenient access to clean water. Moreover, it must provide for secure tenure in a variety of forms."

Chapter 7 of the Constitution is the one that is responsible for dealing with Local Government functions. Local Government is a distinct yet interdependent sphere of government. There are three categories of municipalities in terms of how they should be established, namely:

- Categories A (metropolitan municipalities);
- Category B (District municipalities); and
- Category C (local municipalities).

Mandeni Local Municipality is a Category C Municipality.

The objects of local government are outlined in section 152 of the Constitution as follows:

- To provide democratic and accountable government for local communities;
- To ensure the provision of services to communities in a sustainable manner;
- To promote social and economic development;
- To promote a safe and healthy environment; and
- To encourage the involvement of communities and community organizations in the matters of local government.

This section goes on to state that a municipality must strive, within its financial and administrative capacity, to achieve the above objectives.

2.1.2. National Development Plan (2011)[1]

The National Development Plan (NDP) is South Africa's long-term plan aimed at eradicating poverty and reducing inequality by 2030 through uniting the nation and drawing from energies of all the citizens, growing an inclusive economy, building capabilities, building a capable state and promoting leadership and partnership throughout society.

The Plan aims to ensure that all South Africans attain a decent standard of living through the elimination of poverty and reduction of inequality. The core elements of a decent standard of living identified in the Plan are:

- Housing, water, electricity and sanitation
- Safe and reliable public transport
- Quality education and skills development
- Safety and security
- Quality health care
- Social protection
- Employment
- Recreation and leisure
- Clean environment
- Adequate nutrition

Local plans as such need to reflect the above-mentioned core elements and align themselves with the long-term objectives and strategies of the NDP. The Dokodweni LAP is developed in line with the critical priorities as set out in the NDP which also relate to the core local government responsibilities such as spatial planning, infrastructure and provision of basic services.

2.1.3. National Spatial Development Perspective (2006)[2]

The National Spatial Development Perspective (NSDP) was aimed at redressing the Apartheid legacy by providing a framework for deliberating the future development of the national space economy. It recommends mechanisms to bring about optimum alignment

[1] Source: http://www.sanews.gov.za/south-africa/national-development-plan-unpacked

[2] Source: National Spatial Development Perspective 2006

between infrastructure investment and development programmes within localities.

The objectives of the NSDP are summarized as follows:

- Focussing economic growth and employment creation in areas where this will be most effective and sustainable
- Supporting restructuring where feasible so as to ensure greater competitiveness
- Fostering development on the basis of local potential
- Ensuring the development institutions are able to provide basic needs throughout the country

The NSDP also mentions four basic principles that are fundamental in achieving the above-mentioned objectives. These include:

Principle 1: Rapid economic growth that is sustained and inclusive is a pre-requisite for the achievement of poverty alleviation

Principle 2: Government spending on fixed investment should be focused on localities of economic growth and / or economic potential in order to gear up private sector investment, stimulate sustainable economic activities and create long-term employment opportunities

Principle 3: Where low economic potential exists investments should be directed at projects and programmes to address poverty and the provision of basic services in order to address past and current social inequalities

Principle 4: In order to overcome the spatial distortions of Apartheid, future settlement and economic development opportunities should be channelled into activity corridors and nodes that are adjacent to or link the main growth centres in order for them to become regional gateways to the global economy.

The NSDP ultimately seeks to ensure economic growth, job creation and eradication of poverty. It takes on a task to determine the national space economy through infrastructure investment and development programmes within localities. The implications for the Dokodweni LAP are addressing spatial restructuring, reflecting on service backlogs - especially since the study area is rural in nature - and show social investments spatially.

2.1.4. Spatial Planning and Land Use Management Act (2013)[3]

National policy on spatial planning focused on the rationalization of a fragmented system of land use and related laws. The current fragmented spatial pattern of human settlement and the associated urban sprawl is a direct consequence of the skewed and inappropriate planning legislation of the past. In addressing this situation national government introduced the White Paper on Spatial Planning and Land Use Management. Currently national government has formulated an enabling law on spatial planning, Spatial Planning and Land Use Management Act which was formally passed by the National Assembly on 26 February 2013. The Act came into effect on 1 July 2015. The Act repeals several pieces of planning legislation including the Development Facilitation Act of 1995, Town Planning

[3] Spatial Planning and Land Use Management Act 2013

Ordinance of 1949 and other national planning related legislation. It lays down national policy, norms and standards as well as frameworks on land use, and therefore falls within the ambit of section 146 of the Constitution. At a local level, it provides a framework for the preparation of area specific SDFs and Land Use Management System (LUMS) in line with the Municipal Systems Act and for the preparation of Bylaws.

The following are principles of the Act that apply to spatial planning, land development and land use management:

The principle of spatial justice, whereby—

- past spatial and other development imbalances must be redressed through improved access to and use of land;
- spatial development frameworks and policies at all spheres of government must 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, must incorporate provisions that enable redress in access to land by disadvantaged communities and persons
- land use management systems must include 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 must include provisions that accommodate access to secure tenure and the incremental upgrading of informal areas, and;
- a Municipal Planning Tribunal considering an application before it, may not be impeded or restricted in the exercise of its discretion on the ground that the value of land or property is affected by the outcome of the application.

With SPLUMA coming into effect as of 1 July 2015, it is important to note that all development applications affecting the study area will need to be submitted in terms of this Act.

2.1.5. National Environmental Management Act (1998)

Section 24 of the South African Constitution, provide for the environmental right, which then compels all authorities to protect environment for the benefit of all South African citizens who living in that particular area. To give effect to this right, the National Environmental Management Act (NEMA), Act 107, of 1998, was promulgated with the objectives of promoting integrated planning, referred to as sustainable development. Sustainable development can be defined as the development that meets the needs of the present generation without compromising the needs of the future generations. The needs are defined as either environmental, social or economical in nature. It is important, therefore, that all planning tools to accommodate and promote the objectives of the sustainable development embedded in NEMA.

The NEMA appears to provide a framework upon where environmental matters are to be managed and also allows for the development of other pieces of legislation which are:

a) NEM: Integrated Coastal Management Act
b) NEM: Biodiversity Act
c) NEM: Protected Areas Act
d) NEM: Waste Management Act
e) NEM: Air Quality Management Act

The abovementioned legislations will be considered in developing the Dokodweni LAP, which then allow for the integration of environmental matters in the plan.

The establishment of relevant institutions is necessary due to the broad nature of the environmental field. These institutions assist the Department of Environmental Affairs in implementing management procedures.

Management procedures ensure that any activities that is undertaken that may cause harm to the environment must receive adequate consideration before actions are taken in connection with them. For example, should there be activities that will be undertaken in the study area that trigger an Environmental Impact Assessment (EIA) process, the Act provides steps that need to be undertaken.

2.1.6. Integrated Coastal Management Act (2008)

Dokodweni study area is unique for also having coastal resources. The Integrated Coastal Management Act of 2008 (ICM Act) (Act 24 of 2008) is very key to the management of these coastal resources. The Act came into effect to encourage the integrated approach as the preferred option to achieve the sustainable coastal development in South Africa. At a municipal level the Act proposes a number of plans to be developed by the Municipalities to better manage coastal resources. Such plans include the development of the **Coastal Access Plan**, **Estuarine Management Plan**, **Coastal Management Programme,** and the development of a **coastal planning schemes**. These are the spatial plans that are required to be developed by the Mandeni Municipality as well in order to better management the coastal resources. In developing all these plans the Municipality should be mindful of the **coastal setback line** which is the responsibility of the Department of Environmental Affairs. The set-back line must be developed in consultation with all affected stakeholders including the Mandeni Municipality.

It is therefore, critical for the Municipality, for when developing any planning tool, within the coastal area such as Dokodweni, to seriously consider the objectives of the ICMA, especially plans required to be developed by the Municipality in complying with certain sections of the Act. Such plans should consider the issue of the setback line, which is important both for the protection of the coastal resources and for defending the structures constructed within the coastal zone.

2.2. Provincial context

2.2.1. Kwazulu Natal Provincial Development Strategy (2011)

The KwaZulu-Natal Provincial Growth and Development Strategy (PGDS) was reviewed in 2011 and adopted by cabinet in August 2011. The PGDS is the provincial long-term vision aligned with the NDP and provides the Province with a strategic framework for accelerated and shared economic growth through catalytic and developmental interventions. To realize the vision of "KwaZulu-Natal – A Prosperous Province with a healthy, secure and skilled population, acting as a gateway to Africa and the World", there are seven strategic goals and thirty strategic objectives contained in the PGDS that will drive this Province towards the vision. The purpose of the PGDS can be summarized as follows:

- Set a long-term vision
- Overarching strategic framework for development in the Province
- Provide spatial context and prioritisation
- Guide activities and resource allocation
- Alignment and integration
- Clear institutional arrangements
- Resource commitments and budget alignment

More recently, the Provincial Growth Development Plan (PGDP) was developed to implement the strategy through catalytic projects setting out targets, interventions and monitoring tools guiding implementation. Progress will be monitored and evaluated through indicators with short to long term milestones

The following diagram represents the vison, strategic goals and strategic

FIGURE 4: PGDS VISION, GOALS & OBJECTIVES

The PGDS/PGDP provides a framework for public and private sector investment in the Province, indicating areas of opportunities and development priorities. It addresses key issues of implementation

blockages whilst providing strategic direction. It provides this study a framework of priority programmes necessary for poverty eradication.

2.2.2. Provincial Spatial Economic Development Strategy

- The PSEDS focuses fixed infrastructure investments in areas of economic development potential (whether realised or dormant), and prioritises areas of greatest need based on poverty densities.
- The PSEDS focuses its attention on activity/development corridors. These development corridors are not intended to be the basis for a transport logistics network. It is however essential that the development corridors are adequately served by appropriate transport and logistics infrastructure.
- From the classification of economic potential and the classification of poverty a matrix of development corridors and nodes has been identified which will serve to serve two functions. These functions are:
  - ⇒ To facilitate the increased growth of existing centres and corridors of economic development in the province; and
  - ⇒ To ensure that the potential for economic development within areas of high poverty is realised.

For this reason the nodes and development corridors include both existing well established nodes and corridors, as well as nodes and corridors which currently don't exist or are very weak. The following map illustrates the nodes and activity identified in the PSEDS:

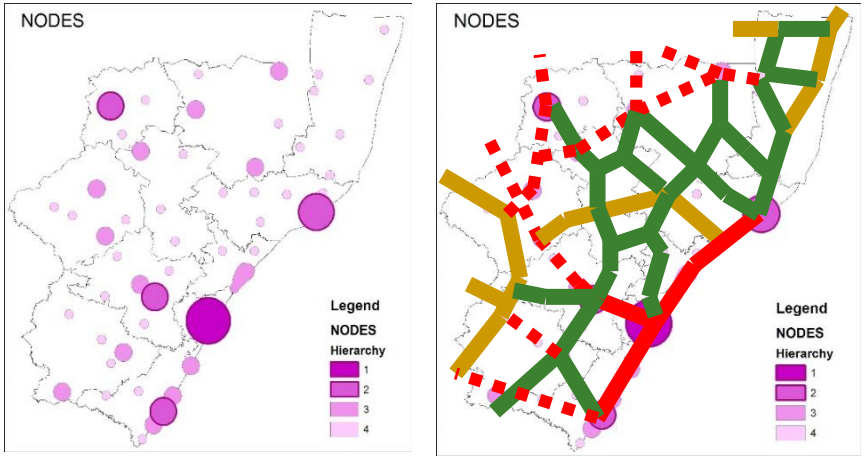


FIGURE 5: PSEDS NODES & CORRIDORS

- The categories of potential set out in the NSDP are:
  - ⇒ **Production of high value**, differentiated goods not strongly dependent on labour costs, focused on local & global niche markets – i.e. manufacturing
  - ⇒ **Production of labour intensive, mass produced goods** more dependent on labour costs, affordable transport linkages – i.e. agriculture and mining
  - ⇒ **Innovation and experimentation** – research and development
  - ⇒ **Retail and private sector services** – large employer of skilled & semi-skilled workers in advanced economies
  - ⇒ **Tourism** – dependant on tourism attractions
  - ⇒ **Public service and administration**

The Dokodweni beach has been earmarked as a tourist attraction in the Local sector plans of the municipality. Therefore the LAP should

identify strategic interventions that could contribute significantly towards beach tourism in the area.

2.3. District context

2.3.1. Ilembe District Regional Spatial Development Plan (2012)

The Ilembe Regional Spatial Development Plan is a long-term plan that indicates how the district will guide and manage economic growth to the year 2050. It also seeks to see the spatial reconstruction of the region by ensuring theat rural Villages and Towns are part of a system of development. The RSDP identifies five key pillars that are aimed achieving sustainable development and achieving the desired vision:

A Diverse and Growing Economy: A diverse economy would be an economy that offers a range of employment opportunities (formal and informal) and one that is not entirely dependent on one sector. According to the RSDP a sustainable diverse economy is an economy is one that has at least four economic sectors that equally contribute to the overall GDP. This requires a great deal of investment to not only encourage diversity but also to encourage a growing economy.

A Liveable Region: A liveable region is one that offers a range of economic, social, spatial options within a reasonable distance. This requires an equal distribution of infrastructure, quality housing and accessibly through quality roads and accessibility to public transportation.

Living in Harmony with Nature: Being in harmony with the environment requires a number of measures that include the protection of valuable ecosystems by setting conservation areas to prevent encroachment. Identifying valuable agricultural land is not only relevant in terms of living in harmony with nature but also has a direct positive impact on food security. This objective is not only important for nature but also for the protection of infrastructure and human life from disasters such as fires, floods. This also requires a well-informed population regarding the use of natural resources and implications of over using resources (i.e. fire wood).

Equity of Access: Equity of access refers to access to urban infrastructure, ease of access to social amenities, access to work opportunities and promoting global connectivity through Information and Communications technology. This is directly connected to the objective of creating liveable regions.

Promote Social Well-being: Social wellbeing deals with both the mental and physical well-being of individuals. If focuses on the education, health (life expectancy and levels of mortality) and food

security. The Gini-coefficient can be used as a measure to indicate the level of social development in an area thus indicating.[4]

2.3.2. Ilembe Environmental Management Framework

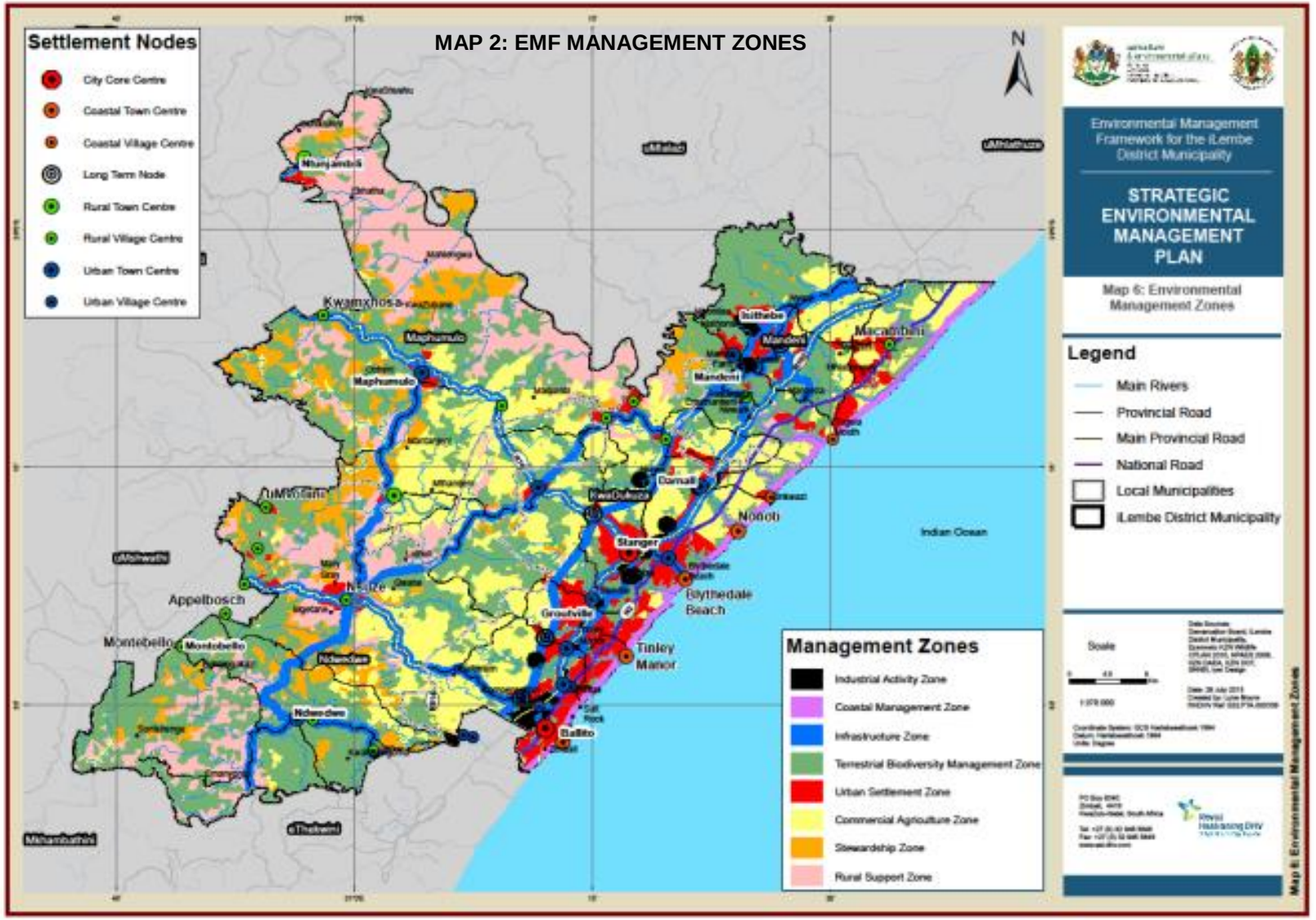
There are two critical tools at the District Level that is, the Integrated Regional Spatial Plan (IRSP) and Environmental Management Framework (EMF).

The IRSP requires all Local Municipality to develop the Municipal Open Space system (MOSS) plan. This plan should be in line with themes like ecological systems, recreational, heritage objects, and rehabilitation of degraded important ecological features such as wetlands and rivers.

The EMF on the other hand has developed five environmental management zones, which applies across the District (refer to the map below). The focus of the EMF is to identify areas of natural resource importance, ecological sensitivity, as well as transformation pressures in order to formulate a spatial environmental plan to guide decision making and relevant spatial development plans. It also identifies areas having / showing the conservation value.

[4] Source: Ilembe District Regional Spatial Development Plan, 2013

MAP 2: EMF MANAGEMENT ZONES



2.4. Municipal Context

2.4.1. Mandeni Integrated Development Plan (IDP)[5]

The Integrated Development Plan is the supreme plan for the Mandeni municipality that gives the overall framework for development. The main aim of this plan is to ensure the coordination of local functions with that of other spheres of government and improve the quality of life for people living within Mandeni. The Municipal Systems Act 32 of 2000 (MSA) provides for the development of IDPs for all municipalities for a period of five years in line with the local democratic elections. For the purposes of this report, it will not be feasible to reflect on all the aspects covered in the IDP due to its broad nature. However it is important for the Dokodweni LAP to reflect on the IDP as this has implications on the future development of the study area. Therefore the elements that will be reflected in this document will be the vision, mission, values, six Key performance Areas (KPAs) linked with goals, objectives and strategies. These six KPAs are also linked to national and provincial priorities.

2.4.1.1. Municipal Vision

"To be a reliable people-centred and sustainable economic hub by 2030"

2.4.1.2. Mission statement

In support of the vision the Mission of the Municipality reads as follows:

- We will achieve our vision following a culture of:
- Continuously striving for better
- Excelling in all key processes of service delivery
- Continuously listening and responding to our communities and all stake holders
- Remaining financially astute

2.4.1.3. Core Values

In keeping with the principles of Batho Pele, the core values of achieving the above-mentioned Vision and Mission are as follows:

- Honesty
- Transparency
- Integrity
- Inclusiveness
- Commitment
- Professionalism

2.4.1.4. Goals, Objectives & Strategies

a) Basic Service Delivery and Infrastructure Development

[5] Source: Mandeni Integrated Development Plan 2015/16 Second Draft

Goal: Universal access to basic services and infrastructure development by 2030

Objectives:

- Infrastructure Planning and Co-ordination.
- To Provide community and recreational facilities
- To Provide access to solid waste removal
- To promote sustainable integrated human settlements
- To review the Electricity Master Plan
- To Investigate appropriate locations for public transport multi modal facility within the CBD
- To Review the Integrated Waste Management Plan
- To implement the Municipal
- Buildings Master Plan
- Construction of Sports facilities
- Construction of Community Halls
- Establish Play Parks
- Provision of additional skips as communal bins for basic refuse removal services
- Households provided with access to basic refuse removal
- Facilitate the provision of housing with the Department of Human Settlements

Strategies

- Establish a programme steering committee for driving the infrastructure development Programme in Mandeni
- Establishment of the Project Management Unit (PMU)
- Establishment of a 3year Capital Infrastructure Funding Plan
- To prepare the Storm Water Master Plan
- To Investigate appropriate locations for public transport multi modal facility within the CBD
- Municipal Buildings Master Plan
- Construction of Sports facilities
- Construction of Community Halls
- Establish Play Parks
- Municipal Buildings Master Plan
- Construction of Sports facilities
- Construction of Community Halls
- Establish Play Parks
- Provision of additional skips as communal bins for basic refuse removal services
- Households provided with access to basic refuse removal

b) Community and social development

Goal: To build cohesive, caring and sustainable communities and to improve the health profile of the local communities as well as to intensify the fight against crime (public safety) and corruption

Objectives:

- To facilitate the provision and formalization of ECD sites
- To promote social cohesion.
- To provide an effective Disaster management system
- To promote a crime free Environment through collaboration with state safety and security agencies

Strategies

- To Partner with DSD to formalize ECD sites
- To organize community dialogues and enhance cultural diversity
- Develop the Disaster management plan aligned to the District

- Effective participation in CPFs and facilitate the establishment of CPF
- To contribute in promoting healthy lifestyle
- To review indigent/ pauper burial policy

c) Local Economic Development

Goal: To create a conducive environment for job opportunities and investment

Objectives:

- To promote Economic growth by creating an enabling environment FOR Job Creation
- To promote Mandeni as a Tourism Destination.
- To promote Mandeni as an investment destination
- To promote Rural Development

Strategies

- Develop an SMME support strategy
- To facilitate and host tourism events
- To prepare and develop promotional materials
- To create a conducive environment for attracting investment through provision of tax incentives
- To develop a rural development strategy.

d) Municipal Institutional Development and Transformation

Goal: To create a culture of public service transformation, performance management and accountability

Objectives:

- To inculcate a culture of Batho Pele principles amongst staff and councillors
- To promote and capacity building
- To create an integrated ICT system
- To foster a culture of sound corporate governance
- To run a municipal administration that is responsive to the needs of the community and foster a spirit of intergovernmental relations

Strategies:

- To formulate a comprehensive training and development programme on service delivery transformational prescripts (Batho Pele).
- To review the strategy and to ensure alignment with other municipal policies and hr systems
- To align and integrate ICT framework (system) with provincial and district framework
- To integrate king 3 report into the municipal systems and procedures
- To formulate a citizens charter and to ensure its integration with PMS of the municipality

e) Good Governance and Public Participation

Goal: To create a culture of public service transformation, performance management and accountability

Objectives:

- To ensure effective and efficient administration that is responsive to the needs of the community
- To maintain sound labour relations

- To provide a secure ICT infrastructure which delivers appropriate levels of data confidentiality ,integrity and availability
- Effective and efficient human resource management that enhances human capacity & productivity within the municipality

Strategies

- Adherence to service standards implementation of Batho Pele principle
- Develop administration strategy & plan implementation of electronic information, records management systems and control of unauthorized entries
- Management compliance & Adherence with Occupational health & safety act (office building)
- Collective bargaining with organized labour on matters of mutual interest at local level adherence to code of conduct for staff members.
- To align and integrate ICT framework (system)
- Implementation of workplace skills plan
- Ensure that the organizational structure is reviewed and implemented in line with employment equity plan of the municipality

f) Financial Viability and Management

Goals: To develop a sustainable and efficient municipality based on sound financial management

Objectives:

- To ensure Effective and efficient utilization of municipal resources
- To increase the revenue and revenue base
- To have effective and efficient processes and systems of managing municipal finances
- To ensure compliance with MFMA, and consolidation of reports towards 2014 operation clean audit
- To align supply chain management policy with SCM Regulations
- To provide indigent support to deserving beneficiaries

Strategies:

- Alignment of IDP priorities with Budget and SDBIP
- Implement Revenue Enhancement Strategy
- Strengthen the effectiveness of expenditure control including procedures for approval, authorization and withdraw payment of funds
- In-year reporting in terms of MFMA calendar
- Draft and implement audit action plan for resolving Audit Query
- To Review SCM policies
- Maintain and update of an indigent management register

2.4.2. Mandeni Spatial Development Framework (SDF)[6]

The MSA indicates that the Spatial Development Framework (SDF) is one of the components of the IDP and should form part of the process. The Mandeni SDF provides strategic interventions on the issues identified in the IDP. Likewise, the SDF also provides a spatial vision, objectives and development strategies for the whole Mandeni area.

In terms of spatial tools, the SDF makes use of development corridors, service centres and activity points. These are summarized below:

Corridors

- N2 is the route between Ethekwini and Umhlathuze which is identified as the Provincial corridor in the PSEDS;
- R102 is the regional corridor which serves N2 linking municipalities within Ilembe District;
- The P415 is identified as a municipal wide activity corridor crossing over N2, linking the coast and the hinterland;
- The P709 is a link road that crosses over N2 linking the Amatikulu Nature Reserve through the Wangu Activity Point, via Nyoni with the Isithebe Industrial Node east-west, linking the coast with the hinterland;
- The P532 is a link road between the Mandeni area and Nyoni. If upgraded it could primarily provide an alternative access route to both Isithebe and Nyoni and in so-doing alleviate some of the freight traffic along the activity corridor.
- The P710 route connecting the Urban Complex of Mandeni with other regional inland areas outside of the Mandeni municipality is important not only to serve households from those areas by providing access to services and opportunities within the complex, but also vital for the economic growth of the complex itself.

Nodes

- The Primary Node has been identified as the Mandeni / Sundumbili business district which is seen as the primary service centre. As the heart of the emerging core urban complex encompassing Mandeni, SAPPI, Sundumbili and Isithebe, this node performs a function to the surrounding regional settlements beyond the borders of the Mandeni Municipality.
- The Isithebe Industrial Park and potential expansion around it, mainly forms the industrial node within the municipality.
- The Rural Service Centres themselves are rural in nature, but due to their locality serve as vital service centres to especially commercial farmers and communities from traditional authority areas. Nyoni and Tugela Mouth, both located along the Activity Corridor, have been identified as rural service centres and often serve as residential destinations in their own right.
- These activity points are identified by the existing and (potential future) clustering of primary services and often at key intersections of access routes in especially the Traditional Authority Areas. The Wangu area serves as typical example of these activity points.
- A total of 12 such rural settlement clusters have been identified within the municipality by using population density

[6] Mandeni Spatial Development Framework 2014

data. These include (amongst others) the villages of Dokodweni, Mpumulandoda, Mhambuma, Nembe, Indlondlo, Wetani and Ohwebede.

2.4.3. Mandeni Coastal Management Plan[7]

Section 48 (1) (a) of the Integrated Coastal Management Act (ICMA), states that a coastal municipality, must, within four years of the commencement of this Act, prepare and adopt a municipal coastal management programme for managing of the coastal zone or specific parts of the coastal zone within the municipality.

Mandeni Municipality has finalised and adopted the Coastal Management Programme (CMP). The programme provides a number of recommendation within five precincts. The proposed plan falls within the Dokodweni precinct (see the map below).

Mandeni Municipality has finalised and adopted the Coastal Management Programme (CMP). The programme provides a number of recommendation within five precincts. The proposed plan falls within the Dokodweni precinct. According to the ICMA, the following defines the Coastal Protection Zone:

- Sensitive coastal areas, as defined by the Environment Conservation Act (Act No. 73 of 1989, section 21 [1]);
- Any part of the littoral active zone that is not coastal public property;
- Any coastal protected area, or part of such an area, which is not coastal public property;
- Any rural land unit that is situated within one kilometre (1000 metres) of the HWM which is zoned as agricultural or undetermined;
- Any urban land unit that is situated completely or partly within 100 metres of the HWM;
- Any coastal wetland, lake, lagoon, [river]1 or dam which is situated completely or partially within a land unit situated within 1000 metres of the HWM that was zoned for agricultural or undetermined use, or is within 100 metres of the HWM in urban areas;
- Any part of the seashore which is not coastal public property (including all privately owned land below the HWM);
- Any Admiralty Reserve which is not coastal public property; and
- Any land [adjacent to an area referred to in sub-sections (a) to (h)] 2 that would be inundated (submerged or covered) by a 1:50 [100]3 year flood or storm event (this includes flooding caused by both rain storms and rough seas).

The coastal protection zone aims:

- To protect the ecological integrity, natural character, and the economic, social and aesthetic value of the neighbouring coastal public property;
- To avoid increasing the effect or severity of natural hazards;
- To protect people, property and economic activities from the risks and threats which may arise from dynamic coastal processes such as wave and wind erosion, coastal storm surges, flooding and sea-level rise;
- To maintain the natural functioning of the littoral active zone;

[7] Source: Mandeni Integrated Development Plan 2015/16 Second Draft

- To maintain the productivity of the coastal zone; and
- To allow authorities to perform rescue and clean-up operations.

The inland area between the CPZ and the N2 that, due to its proximity to the coastal zone, has an impact on the coastal zone, and has subsequently been identified as “Precinct 5: Coastal Influence Zone”. Dokodweni falls within Precinct 5 which is the area between the CPZ and the N2. The following figure illustrates:

FIGURE 6: DOKODWENI PRECINCT

The following table indicate the objectives and seven Priority areas which will guide the sustainable management of the coastline of Mandeni:

TABLE 3: CMP PRIORITY AREAS

Priority Areas	Objective	Issues
Priority Area 1	To promote stakeholder engagement and participation, coastal management capacity and the co-ordination of the implementation of the Mandeni CMP.	• Lack of institutional capacity and resources with regards coastal management issues; • Lack of compliance and/or enforcement capacity to ensure regulations and procedures are followed; • Limited funding and access to funding for upgrading infrastructure; • Amendments to the so-called Off Road Vehicle Regulations and potential implications for the existing Lebotes and Amatigulu launch sites; • Lack of ongoing marketing / awareness raising programmes promoting Mandeni

		as a tourism destination; - Lack of involvement of the Macambini Tribal Authority and Ingonyama Trust in ongoing coastal planning processes; and - Thukela River been constrained in terms of water supply capacity.
Priority Area 2	Promote sustainability of coastal settlement and a balance between growth needs and conservation.	- Inadequate Infrastructure as a result of basic services backlog - inadequate electrical infrastructure; limited water supply capacity; and inadequate sanitation infrastructure; - Planning undertaken and approvals granted without considering basic infrastructure needs/constraints; - Demands for future adequate transport, housing, sanitation, water infrastructure and swimming beaches; - Lack of safe swimming beaches and limited public amenity at existing & proposed swimming beaches; - The need to learn from mistakes made in other coastal areas – such as maintaining a natural buffer, preventing ribbon development and encouraging nodal development; - Challenges in balancing conservation and economic development needs; - Approval of potentially inappropriate development at Tugela Mouth as a result of the high demand for tourism development; - Challenges in enticing the right type of development – preferably non-intrusive low impact; - Demand for additional coastal settlement; - Potential development is constrained by the lack of bulk infrastructure and the

		need to share the costs of installing bulk; and Maintenance of existing unspoilt view-sheds.
Priority Area 3	Promote resilience to the effects of dynamic coastal processes and environmental hazards.	The dynamic and unpredictable nature of natural coastal processes which exert influence on the coastline and the resultant dune, shoreline & sandy beach degradation; The impacts of dynamic coastal processes such as climate change; sea-level rise; coastal erosion and sand replenishment malfunction; Increased frequency of storm events and increased rates of erosion and greater geotechnical instability of dune systems, with 'slippages' or failures becoming increasingly prevalent where ancient dune systems date back thousands of years; and The need to learn from mistakes made in other coastal areas – such as maintaining a natural buffer and avoiding inappropriate stormwater management.
Priority Area 4	Minimise the impacts of pollution on the coastal environment.	The negative impacts of pollution on the coastal environment from upstream industrial and agricultural practices; localised pollution; and poor water quality; Beach Litter; Wastewater treatment works is in urgent need of upgrade/refurbishment; Marine pollution and other debris on the beach; and Illegal dumping is a major problem identified below the Isithebe Industrial Area
Priority Area 5	Ensure appropriate management and conservation of estuaries as per the ICM Act.	Continued water abstraction from the Thukela River; Poor farming practices and illegal sand winning and the resultant siltation of

		estuarine environments; - Continued sand/stone mining and specially illegal operations upstream in the Amatigulu River; - Artificial breaching; - Agriculture encroachment and poor farming practices; and
Priority Area 6	Promote coastal access and accessibility that is both equitable and sustainable.	- The provision of coastal access as well as accessibility to the coastal zone, specifically access to the Thukela South Bank and protected areas; - Access to and access-related infrastructure must be maintained (OPEX funding in addition to CAPEX); - Vehicular access and associated parking facilities are needed in this area; - Resolving issues of access with private land holders (Tongaat Hulett Development) and conservation authority (Ezemvelo KZN wildlife);
		- The promotion of access to development opportunities provided by the coastal area (sustainable coastal livelihoods); - Ongoing security of existing and future beachgoers; - Accessing extensive studies undertaken as part of the unsuccessful proposed Ruwaad Group development; - Access to CMP implementation funding; - The need to learn from mistakes made in other coastal areas – such as facilitating public access, preventing ribbon development and encouraging nodal development; - and - Management of traditional practices in the coastal zone.
Priority Area 7	Acknowledge the role of ecosystem goods and services in sustaining livelihoods, and promote sustainable extraction and utilisation.	- Ecological degradation / transformation of natural resources and the resultant biodiversity loss

		▪ Degradation of natural vegetation due to the presence of alien invasive species specifically in relation to protected areas, tribal areas, undeveloped land parcels ▪ The perceived move from intensive agricultural practices towards less intensive subsistence activities ▪ Reduced water quality and degradation of wetland areas ▪ Extensive and uncontrolled harvesting of marine stocks, specifically as a result of off-shore trawling of the Thukela Banks ▪ Cattle on the beach ▪ DMR attitude and lack of support re issuing of sand mining permits promotes current illegal practices ▪ The need to investigate the viability of applying for Blue Flag Status
		▪ Rich cultural heritage needs to be maintained and looked after ▪ Illegal fishing is a major problem identified below the Isithebe Industrial Area

The CMP also mentions that the ICMA allows for the amendment of the Default Coastal Protection Zone, which was amended by the municipality on the following base.

TABLE 4: CMP PRECINCT DEFINITIONS

Precinct	Amendments to Default Coastal Protections Zone
Precinct 1	Reduce the default coastal zone by locating the CPZ adjacent to the coastal forest and extend up Thukela River estuarine functional zone;
Precinct 2	Extend the default coastal zone by locating the CPZ landward of the 1st row of properties as well as following the road between Tugela Mouth and the Amatikulu Nature Reserve boundary;
Precinct 3	Reduce the default coastal zone by locating the CPZ on the Amatikulu Nature Reserve boundary and extend up Nyoni and Amatikulu estuarine functional zones;
Precinct 4	Reduce the default coastal zone by locating the CPZ on the cadastral boundary demarcating the de-proclaimed nature reserve; and

Precinct 5	Coastal influence zone – between the amended CPZ and the N2.

2.4.3.1. COASTAL ACCESS LAND

Section 18 of ICMA (1) states that each municipality whose area includes coastal public property must within four years of the commencement of this Act, make a by-law that designates strips of land as coastal access land in order to secure public access to that coastal public property.

Mandeni Municipality is still working on meting this requirement. However, the Dokodweni LAP should attempt to adopt and incorporate the coastal access land as proposed in the Coastal Management Programme

2.4.3.2. DEVELOPMENT OF THE ESTUARINE MANAGEMENT PLAN

Section 33 (1) of the ICMA states that estuaries within the Republic must be managed in a co-ordinated and efficient manner and in accordance with a National Estuarine Management Protocol. There are two critical estuaries located within the Mandeni Municipality that is the Tugela Mouth on the south and Amatigulu Estuary north. The Amatigulu Estuary falls within the Dokodweni Area-Based Plan. The plan will take into consideration the development of the Amatigulu Estuarine Management Plan.

2.4.3.3. THE COASTAL PLANNING SCHEME

Section 56 (1) of ICMA indicates that a coastal planning scheme may be developed to facilitates the attainment of coastal management objectives by—

(a) Defining areas within the coastal zone or coastal management area which may—

(i) Be used exclusively or mainly for specified purposes or activities; or

(ii) Not be used for specified purposes or activities; and

(b) Prohibiting or restricting activities or uses of areas that do not comply with the rules of the scheme.

Section 57 (1) of ICMA states that subject to section 56(5), a coastal planning scheme of a municipality may form, and be enforced as part of, any land use scheme adopted by the municipality. The Municipality will decide whether this plan is standalone scheme or forms part of the Municipal Scheme.

2.4.3.4. THE BLUE FLAG PROGRAMME

South Africa has joined the Blue Flag program in 2001 and became the first country outside of Europe to be awarded the right to implement the program. At the time the Department of Environmental Affairs and Tourism through the Marine and Coastal Management

Section was responsible for the program and has put in place the Blue Flag as one of responses and vehicles to implement the requirements of the Government White Paper on Sustainable Coastal Development that came into effect in 2000.

The Blue Flag programme promotes sustainable development in freshwater and marine areas. It encourages the local authorities to achieve high standards in the four categories which are **water quality**, **environmental management**, **environmental education** and **safety**. Over the years, the Blue Flag has become a highly respected and recognised as an eco-label working to bring together the **tourism** and **environmental** sectors at local, regional and national levels.

It will very critical, going forward, for Mandeni Municipality to make attempts to integrate the Blue Flag with other initiatives taking place around the Dokodweni area. This should also include attempts to incorporate recommendations from the planning tools, such as the Coastal Management Plan (CMP), Coastal Access Plan, Estuarine Management Plan, Environmental Management Framework and Spatial Development Framework that are being developed and others finalised along the iLembe District in general and Mandeni coast specifically.

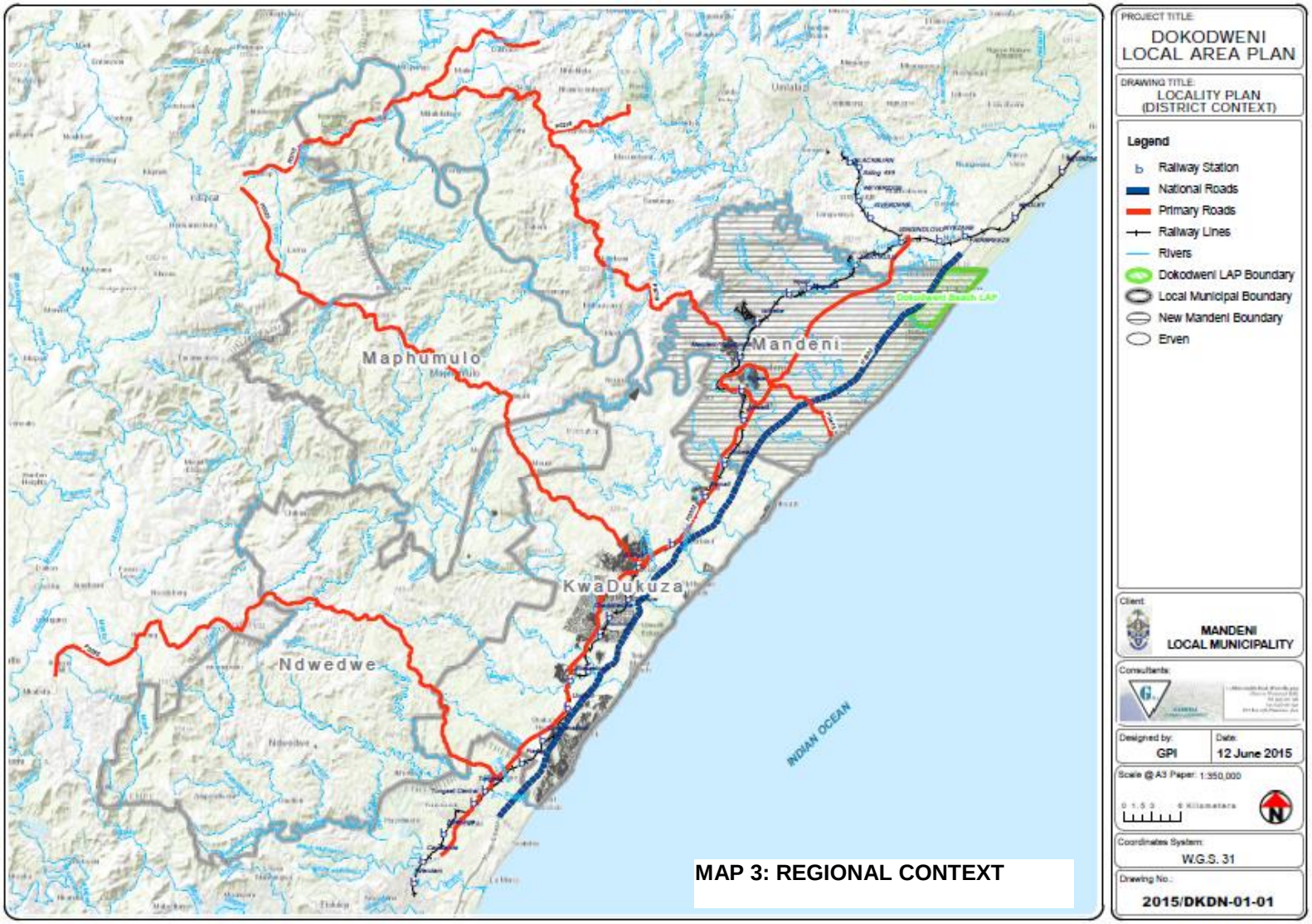
3. GEOGRAPHIC LOCATION

3.1. Regional Context [8]

Mandeni Local Municipality (KZ291) is a Category C municipality and one of the four (4) local municipalities that falls within the jurisdiction of Ilembe District Municipality (DC29). The other local municipalities are KwaDukuza, Maphumulo and Ndwedwe. It is located along the east coast of the Province of KwaZulu Natal along the Indian Ocean, between the major port cities (namely Durban and Richards Bay) and bisected by the N2 Highway. On the north, it is bounded by Umlalazi local municipality (KZN 284) - which forms part of the UThungulu District Municipality (DC28) - immediately after the Amatikulu River. The cross border interface is mainly agriculture with vast pieces of sugar cane farm as well as minimal forestry and or timber plantations whilst on the western part in the inland is vastly traditional settlement. On the south, it is bounded by KwaDukuza Municipality in the south bank of Tugela River. In terms of cross border alignment the dominant use from both ends is sugarcane fields.

The following map illustrates:

[8] Source: Mandeni Integrated Development Plan 20115/16 Second Draft



MAP 3: REGIONAL CONTEXT

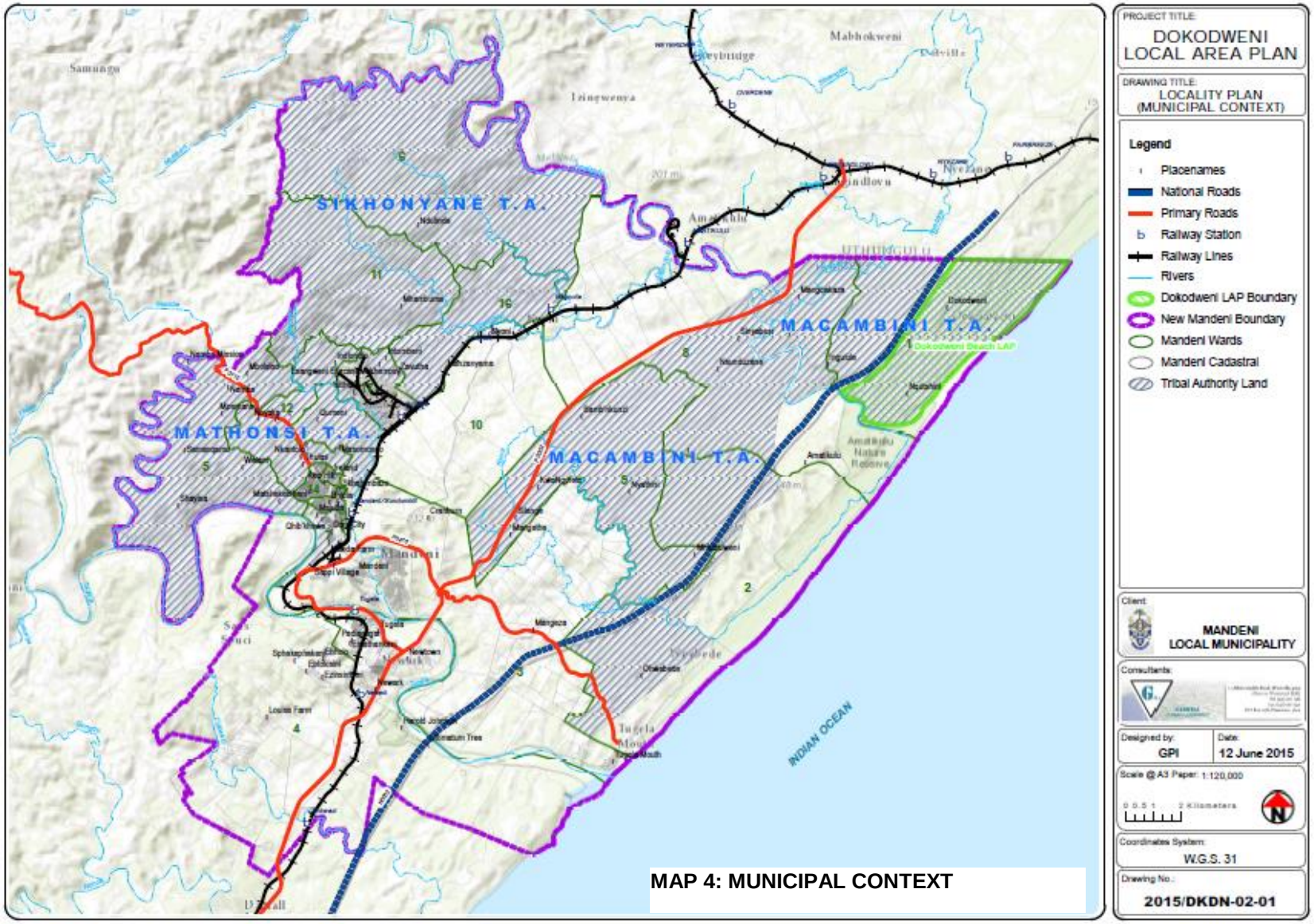
3.2. Municipal Context[9]

Mandeni Local municipality (KZ291) was previously known as the éNdondakusuka Local Municipality. It covers approximately 545.48km2 and is made up of 17 Electoral Wards. The municipality is predominantly rural in character with Ingonyama Trust land accounting for the majority of its land mass. There are four Traditional Council areas located within municipality area of jurisdiction, namely:

- Sikhonyane (Langeni) Traditional Council area which includes wards 6, 11, and 16. This area is located along the north-western boundary of Municipality.
- Mathonsi Traditional Council area which covers wards 5, 7, 12, 13, 14, 15 and 17. This area is located to the west of Mandeni Town and Sundumbili.
- Macambini Traditional Council area which covers electoral wards 1, 2, 8, and 9. This area is located between the N2 and the coast. It has huge potential for tourism, commercial, industrial and leisure and upmarket housing development.
- Fuze Traditional Council located along the south-western boundary of Mandeni Municipality

The following map illustrates:

[9] Source: Mandeni Integrated Development Plan 20115/16 Second Draft



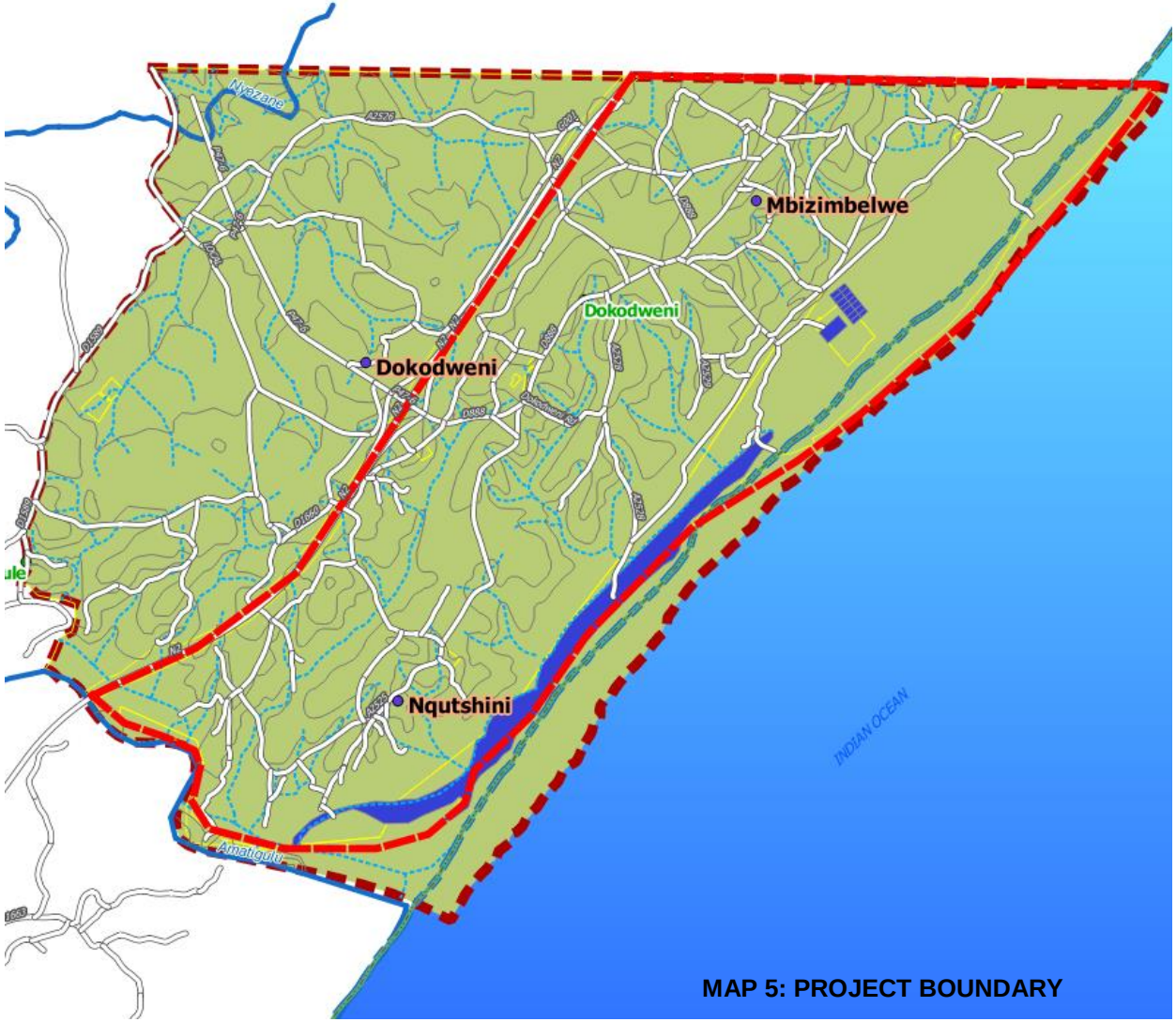
MAP 4: MUNICIPAL CONTEXT

3.3. Defining the Study Area

The study area is located in Ward 1 of Mandeni local municipality. It measures approximately 1980ha in extent. It is bounded on the north by Gingindlovu which falls under uMlalazi LM; on the south of the site is the Amatikulu River; on the west is the N2 Highway and areas such as Ingulule; whilst on the east is the Indian Ocean. The study area is accessible on the west through the N2 which off ramps and joins P47-6/D888 leading into the area. The study area also falls under the jurisdiction of Macambini Traditional Authority. The following are sub areas that fall within the study area:

- Dokodweni
- Mbizimbelwe
- Nqutshini

Due to the fact that the name “Dokodweni” also refers to isgodi, for the purposes of this report, the study area will hereafter be referred to as “Dokodweni study area.”



MAP 5: PROJECT BOUNDARY

4. SITUATIONAL ANALYSIS

This section of the report seeks to assess and analyse the current situation of the Dokodweni study area which will lay the foundation for strategic proposals. The analysis is based on interpretation of statistics from the 2011 Census and also Municipal sector plans. It should be noted that information sourced is mainly ward specific. In this case, Dokodweni study area is situated within ward 1 and therefore the analysis will relate to information for this ward. The following subsections will be unpacked:

- Environmental Analysis
- Demographic Profile
- Socio Economic Profile
- Spatial Analysis
- Economic Analysis
- Infrastructure and Basic Services Analysis
- Social Facilities Analysis

4.1. Demographic Profile

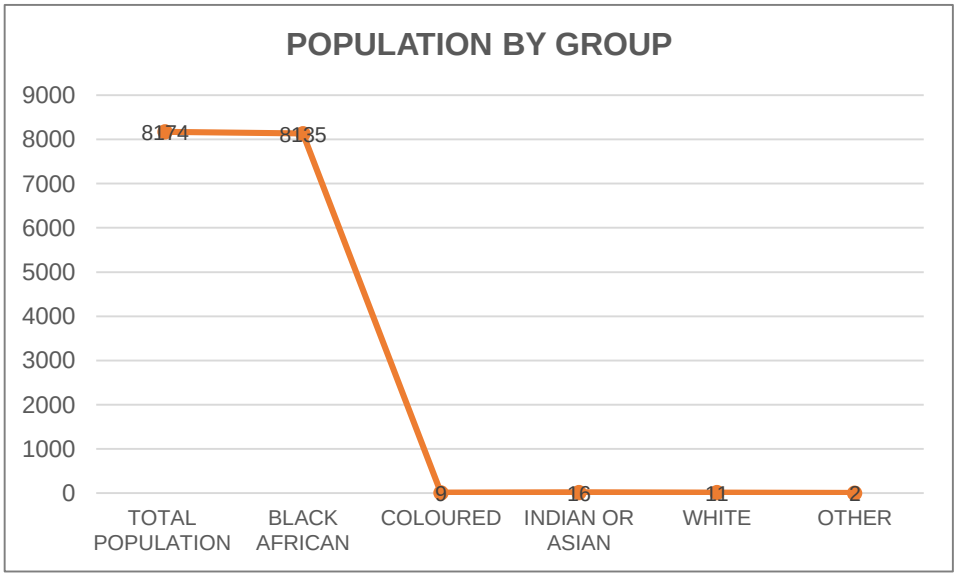
This sub-section provides an overview of the population size, age structure, gender structure and household size of Ward 1.

4.1.1. Population size

In 2011, the total population size of Ward 1 was estimated to be approximately 8174 people thus contributing about 6% to the total population of the municipality of 138078. Over 99% of the population of Ward 1 are Black African whilst the remainder is made up of Coloureds, Indians or Asians, Whites and Other.

The following diagram illustrates:

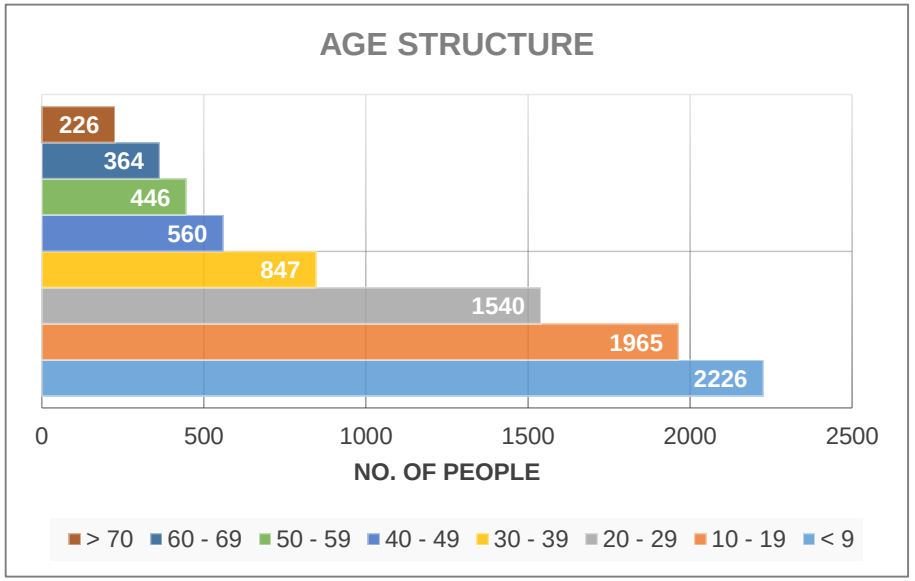
FIGURE 7: POPULATION BY GROUP



4.1.2. Age structure

In 2011, the age structure of Ward 1 shows a skewed age characteristic which leans towards the majority of the population being the age of 15 years. This is known as the group which is not economically active. Same as those that are over the age of 65, they are also classified as not being economically active. People between the ages of 15-64 years are classified as the working age. Over 45% of the population falls within Ward 1 fall within the working age while the remainder, which is the majority, the combination of people under 15 and over 65. This age structure indicates that the study area is dominated by people who are dependent on the working class meaning the dependency ratio is high. Factors that have negative implications on an area that have a high dependency ratio include high unemployment, and low literacy rates which affect people's employment opportunities.

FIGURE 8: AGE STRUCTURE



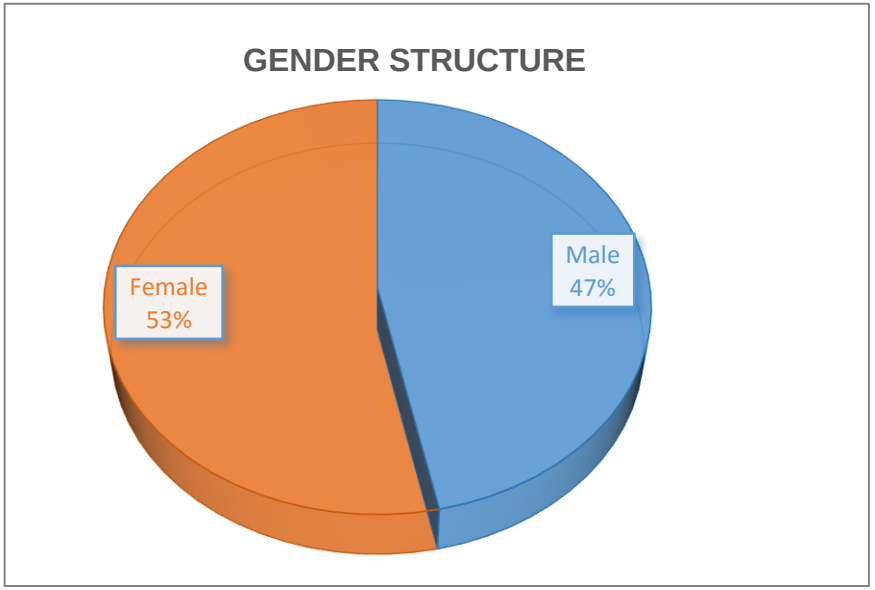
The following diagram illustrates the age structure of Ward 1:

4.1.3. Gender structure

The gender structure of Ward 1 show a slight variation in terms of the female ratio to male. The female population dominates the gender structure. The notable difference was a 5% gap. This is an important characteristic of the area, as it points to the area as an economic springboard for people into the employment centres of Mandeni municipality. With more females dominating the study area, it suggests that gender equality programmes and initiatives targeting women need to be prioritised.

The following diagram demonstrates the gender structure:

FIGURE 9: GENDER STRUCTURE



4.1.4. Household size

In terms of household size, Ward 1 is one of the wards that has the lowest number of households within the municipality. In 2011 there were 1351 households in Ward 1 compared to 1679 households in 2001. The decline in household size is directly proportional to the decline in overall population. Overall, the project area's household size resembles that of a typical rural low income settlements and that is in most cases characterized by low household numbers as most of the population migrates into urban areas for better economic opportunities. This emphasizes that indeed proper planning and land use guidance is needed for this area.

The following table indicates the household sizes as per ward within the municipality:

TABLE 5: HOUSEHOLD SIZE PER WARD

WARD NO.	2001	2011
Ward 1	**1,679**	**1351**
Ward 2	1,447	1612
Ward 3	2,433	2334
Ward 4	3,533	3301
Ward 5	1,165	1370
Ward 6	1,689	1391
Ward 7	2,212	3285
Ward 8	1,204	2056
Ward 9	1,506	1813
Ward No.	2001	2011
Ward 10	2,349	2722
Ward 11	2,313	2008
Ward 12	3,627	3606
Ward 13	1,343	1163
Ward 14	2,524	2894
Ward 15	1,037	1542
Ward 16	951	3093
Ward 17		2692
TOTAL	31,012	38235

4.2. Socio-Economic Profile

This sub-section provides an overview of the education levels, employment and unemployment status and income levels for Ward 1.

4.2.1. Education Level

Generally, the population of Ward 1 is characterized by relatively low levels of education. However the number of illiterate people is low with only 6% of the population with no schooling. This indicates that efforts are being made to curb illiteracy within the municipality. However it is important to note that education levels influence the rate of employment within an area since nowadays employment opportunities require people to have a certain level of education. Lower skill levels contribute largely to unemployment. Approximately 10% of the population completed matric whilst only 1% has higher education. This suggests that skills relevant for the market might be in short supply within the study area. Factors influencing low levels of education include dropout of children entering secondary education due to alcohol abuse, poverty, teenage pregnancy, drug addiction and crime.

The following diagram demonstrates the education levels:

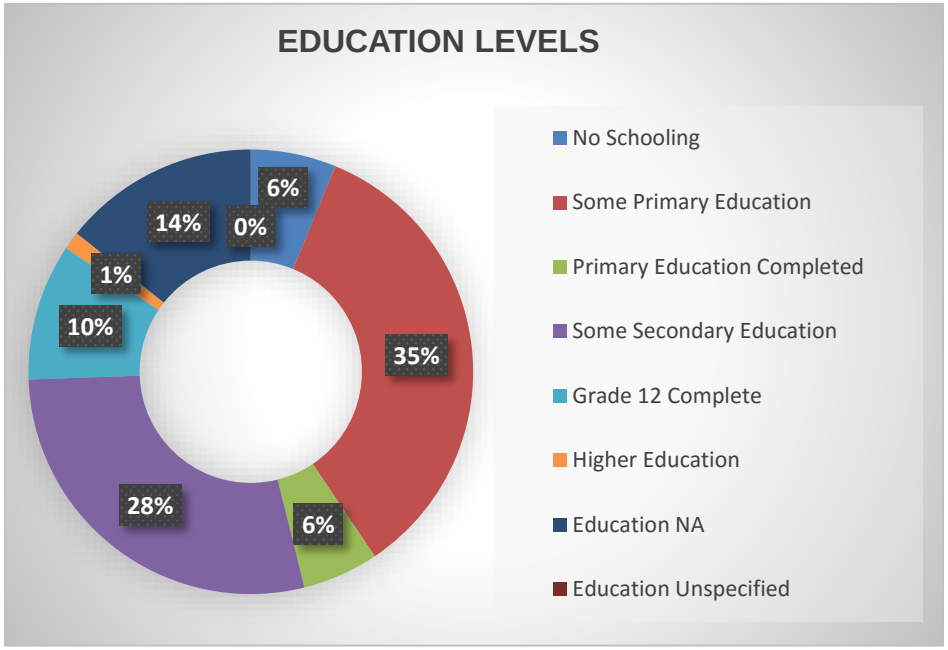


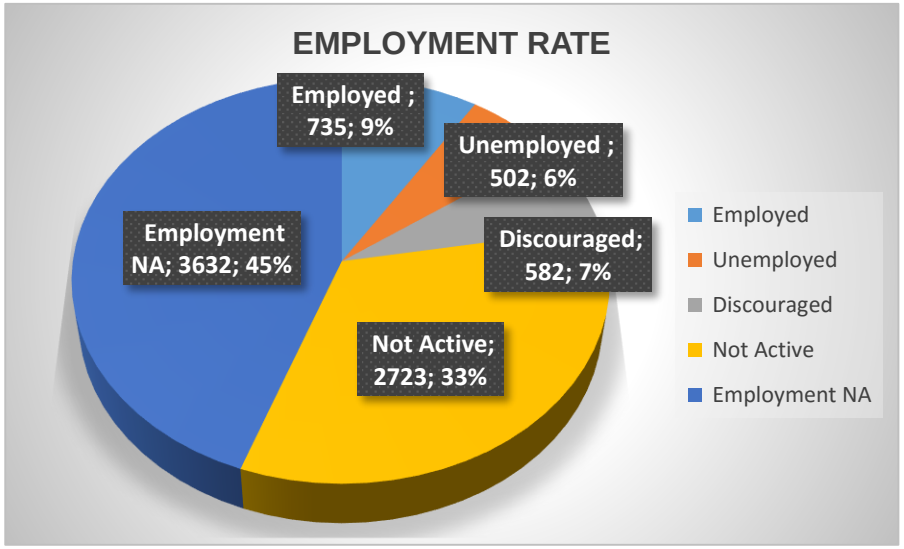
FIGURE 10: GENDER STRUCTURE

4.2.2. Employment and Unemployment Status

As depicted in the diagram below, the majority of people within Ward 1 fall within employment which accounts for 45% whilst 33% of the population is not active. This statistic is in line with that of the age structure. There are more people in the age groups that are not economically active i.e. under 15 years and over 65 years. In terms of employment, 9% of the population is employed whilst only 6% is unemployed and 7% is discouraged. These trends are by no means extraordinary but there is still room for improvement.

The following diagram illustrates the employment rate within the Ward:

FIGURE 11: EMPLOYMENT RATE



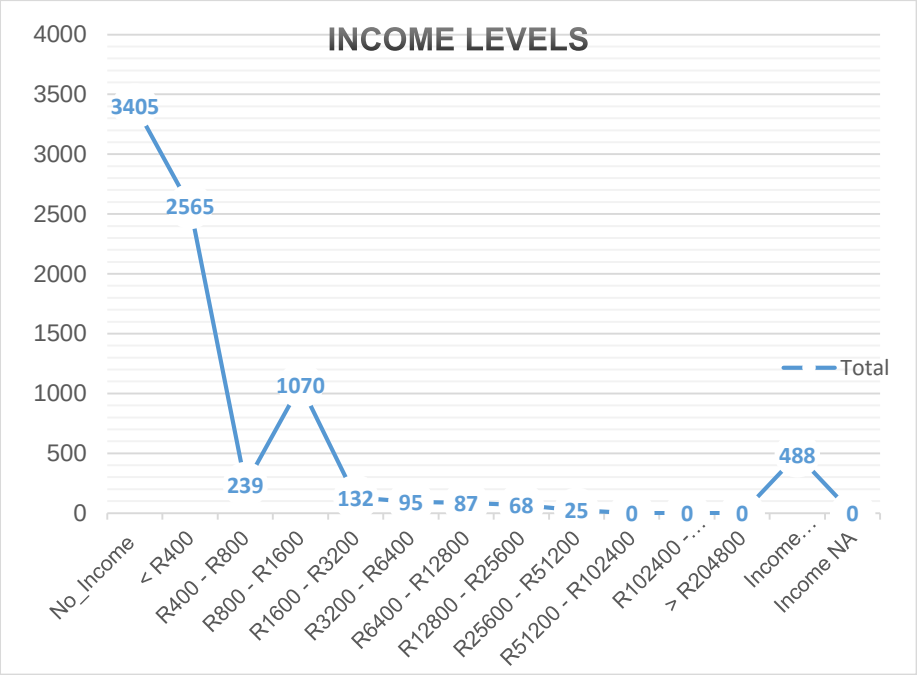
4.2.3. Income Levels

Income levels are a good indicator of poverty levels, although poverty in itself is a difficult concept to define. For the purpose of this assessment the report will use the 2011 Census individual monthly income of Ward 1, as a poverty indicator. Generally, the population of Ward 1 is a predominantly poverty-stricken area that is occupied by people with no income (42%) or below the standard minimum wage. A large portion of the population earns between R 9601–R19600 (31%) followed by R19601 – R38200 (13%). These trends reflect an impoverished area where most of the people are an unable to improve their quality of life.

The main shortcomings of this indicator are that it does not provide an indication of how far the poor households are below the poverty income line. For a better indicator, a poverty gap is normally used.

The following diagram illustrates:

FIGURE 12: INCOME LEVELS



4.2.4. Synopsis of Demographics & Socio-Economic Issues

From the above-mentioned analysis, the following can be deduced for our study area in Dokodweni:

TABLE 6: SUMMARY OF DEMOGRAPHY ISSUES

WARD 1 DEMOGRAPHICS & SOCIO ECONOMIC TRENDS				
YEAR	2011		%	
Population	8174 People			Notwithstanding that Ward 1 is not the most populated ward in the municipality, but the study area is relatively dense. The majority of the population is Black African.
Population by race	Black African		99.5	
	White		0.1	
	Coloured		0.1	
	Indian		0.2	
	Other		0.1	
Household size	1351 Households			Household size in the ward declined between 2001 and 2011 indicating dynamics within the household structure.
Gender	3817 Males		47	The gender structure indicates that the female population is the most dominant. This means gender equality and women empowerment programmes need to be take centre stage.
	4357 Females		53	
Age	<9	2226	27	The settlement's population is a fairly young population which mainly consists of not economically active age group. Nonetheless, youth programmes and facilities need to be developed to ensure that the youth do not engage in illegal activities.
	10-29	3505	43	
	30-49	1407	17	
	50-69	810	10	
	70+	226	3	
	None	508	6.2	

Educational level	Some Primary	2809	34.3	Low literacy levels when compared to that of the municipality. Although there is only a few people with higher education, there are no supporting facilities for post matric education.
	Primary Completed	453	5.5	
	Some Secondary	2315	28.3	
	Grade 12 Complete	813	9.9	
	Higher	107	1.3	
	Unspecified	1	0.01	
Employment	Employed	735	9	A positive indicator is that there are more people employed than those who are unemployed. However more still need to be done to create more job opportunities to decrease the employment rate which is largely predominant within the youth.
	Unemployed	502	6	
	Discouraged	582	7	
	Not Active	2723	33	
	Employment N/A	3632	44	
Individual Income levels	No Income	3405	41	Whilst the majority of people within Ward 1 do not receive an income, almost 32% receive less than a standard living wage. More job opportunities need to be created to improve the quality of life for all the residents within the study area.
	< R400	2565	32	
	R400 - R800	239	3	
	R800 - R1600	1070	13	
	R1600 - R3200	132	2	
	R3200 - R6400	95	1	
	R6400 - R12800	87	1	
	R12800 - R25600	68	0.8	
	R25600 - R51200	25	0,2	
	R51200 - R102400	0	0	
	R102400 - R204800	0	0	
	> R204800	0	0	
	Income Unspecified	488	6	

4.3. Economic Analysis

This section of the report addresses issues relating to the local economy. Firstly it will provide a broad outlook of the District and municipal economies and their role within the Provincial economy. This will form the basis of the local economy of the study area and an assessment of the economic sectors will be undertaken.

4.3.1. A Glance of Mandeni Municipality Local Economy

When using the traditional micro-economic indicators of Gross Domestic Product (GDP), Gross National Product (GNP) and Gross Value Added (GVA) the fastest growing economy in the Province is Ethekwini Metro as it contributes 64,9% to the Provincial economy. This is followed by uMgungundlovu with 8.5%, uThungulu trails closely with 8.4% and iLembe district contributing only 4% towards the provincial real GDP.

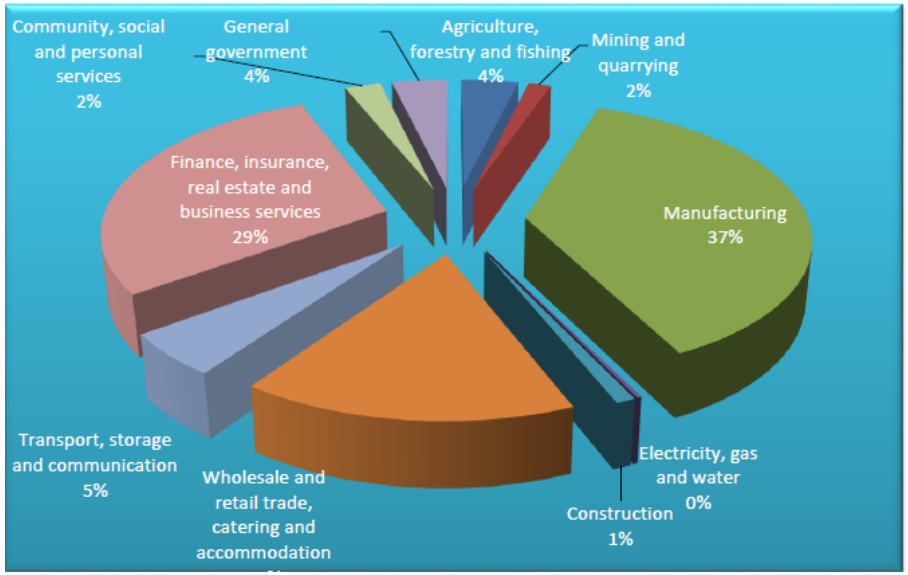
In the Ilembe District, Mandeni is the second largest contributor to the district's GDP following KwaDukuza. The LED indicates that Mandeni contributed approximately R1.7bn to the districts GDP in 1996. This increased to R2bn in 2007 and R2.4bn in 2011. It is anticipated that the GDP of Mandeni will be 3bn in 2017. The key economic sectors of the district are manufacturing and agriculture. They are both the main contributors to the District GDP and source of employment.

In Mandeni, the manufacturing sector is the largest contributor GDP at 60.6%. Over the last decade it grew by only 4.2%. Agriculture is the second largest contributor to the GDP at 8.3%. This shows the stark comparison between the two activities. Wholesale and Retail is the third largest contributor to the GDP of the area at 8%.

Manufacturing sector is the largest contributor to the GVA of Mandeni accounting for 37% of the total GVA, followed by finance, insurance, real estate and business services (29%), wholesale and retail trade, catering and accommodation (19%). Agriculture, general government, transport and construction sectors contribute minimally to the municipal GVA each accounting for 4%, 4%, 5 and 1 respectively.

The following diagram illustrates:

FIGURE 13: ECONOMIC SECTORS IN MANDENI



Economic sectors identified in the study area include Agriculture, Manufacturing, Retail and Tourism. The following sub-sections will elaborate.

4.3.2. Agriculture

Agriculture plays a significant role in the local economy of Mandeni municipality. The sector has huge potential in the municipality however more commercially viable methods of farming need to be adopted as opposed to the existing traditional ones. The LED notes that the sector contributes a mere 3.7% to the municipal Gross Value Added (GVA) and employs only 3.84% of the available labour force.

TABLE 7: AGRICULTURE SECTOR CONTRIBUTION TO GVA

Year	2011	
Industry	**Number**	**%**
Total	3336.466	100
Agriculture, forestry and fishing	**126.2756**	**3.78**
Mining and quarrying	50.38561	1.51
Manufacturing	1247.823	37.40
Electricity, gas and water	7.566253	0.23
Construction [SIC: 5]	31.06001	0.93
Wholesale and retail trade, catering and accommodation	532.4409	15.96
Transport, storage and communication	170.4363	5.11
Finance, insurance, real estate and business services	967.154	28.99
Community, social and personal services	80.35822	2.41
General government	122.966	3.69

Year	2011	
Industry	**Number**	**%**
Total	27886.78	100
Agriculture, forestry and fishing	**1071.665**	**3.84**
Mining and quarrying	301.3812	1.08
Manufacturing	7489.876	26.86
Electricity, gas and water	8.89915	0.03
Construction	609.71	2.19
Wholesale and retail trade, catering and accommodation	7160.496	25.68
Transport, storage and communication	796.8299	2.86
Finance, insurance, real estate and business services	6349.034	22.77
Community, social and personal services	2529.07	9.07
General government	1569.818	5.63

TABLE 8: AGRICULTURE EMPLOYMENT CONTRIBUTION %

Over the past 20 years or so, employment in the Agricultural sector has fluctuated quite a bit. More recently, the Agricultural sector experienced a decline where in 2001 it employed 3371 people compared to 2769 in 2011. The global financial crisis is was due to amongst other factors, the global financial meltdown. The large commercial farmers have over the last fifteen years experienced much difficulty and some farmers have experienced bankruptcy. Although there are many factors influencing these trends over time, but more recently, the global financial crisis can be seen as on one of the contributing factors to job losses post 2008.

In Dokodweni study area, Agriculture can be regarded as the primary sector. It is a way of life where the majority of households engage in subsistence activities such as crop farming including amadumbe, beetroot, potatoes and maize. Sugar cane is the dominant agricultural activity in Mandeni municipality. The same could said for the Dokodweni study area. Admittedly, sugar cane in traditional areas such as that of Dokodweni is poorly developed leading to most farms not generating much income.

The main reason for this is the fact that the land is not effectively farmed. Other agricultural opportunities including vegetable farming, cattle farming, niche market products, and mining opportunities can also be looked into further. The following map indicates that cultivated land within the study area is located within Dokodweni along the N2 to the west of the site.

Small scale sugar cane farming is dominant in rural areas within the municipality. During field surveys, there was evidence of commercial agriculture in the study area. Sugarcane plantations are found in small pockets within the vicinity of settlements. Sugarcane farming within the study area and is undertaken through a new initiative driven by Tongaat Hulett. The company has a strategic imperative to match sugarcane supplies to its existing milling capacity and promote the company's renewable energy agenda. In so doing, the company has realised that that the major growth potential for these sugarcane supplies will originate from previously disadvantaged individuals and, in particular, rural communities residing on Ingonyama Trust landholdings. Tongaat Hulett has now partnered with various Traditional Councils and Department of Agriculture, Environmental

Affairs and Rural Development to achieve its strategic imperatives of transformation and rural development.

The company has put in place specific agricultural development models to assist government achieve its strategic imperatives of transformation and rural development. The agricultural models include Operation Vuselela, the seed cane subsidy programme, Simamisa's communal lease programme and MAFISA which are implemented in the Ingonyama trust land.

Through engagement with the local people, the Simamisa communal lease programme is the one that is operational within the study area with their offices located some 30km away. Simamisa communal lease model is the first of its kind to be developed in that it was sanctioned by all key stakeholders including the traditional leadership structures, Ingonyama trust and the community members in the participating communities. The key pillars of the communal lease model include the following:

- 9 years and 11 months term of agricultural lease;
- A remuneration package of 10 percent in gross proceeds per annum;
- Zero compensation for biological assets at the end of the lease term; and
- Registration of co-operatives where Tongaat Hulett assumes this administrative function.

The following table highlights the impact of these models on job creation and sustainable rural development. For example, Tongaat Hulett was able to establish some 1 596 direct jobs in 2012/13 while an additional 1 524 jobs would be created in 2013/14 resulting in some R32,9 million being injected back into the following district municipalities: UThungulu; Zululand; Ilembe and UMkhanyakude.

Tongaat Hulett Agricultural Development Model	2012/13	2013/14*
Vuselela	492	650
Seed cane subsidies	3160	3395
Simamisa - communal lease	2856	2193
MAFISA	234	245
Total hectares	**6 742**	**6 483**
Additional tons milled	373 560	356 565
Jobs – Agricultural	1557	1486
Jobs - Cane Transport	39	38
Total Direct Jobs	**1 596**	**1 524**
Wage earnings millions	R22,2 million	R32,9 million

TABLE 9: JOBS CREATED THROUGH TONGAAT HULLET AGRICULTURAL DEVELOPMENT MODELS

Some of the problems that are experienced in developing this sector of this industry in KwaZulu-Natal include:

- Low yields;
- Access to water for irrigation;
- Lack of training, and loss of traditional knowledge resulting in poor crop;
- Land degradation;
- Limited experience in natural resource management;
- Limited formal land ownership;

- Access to credit;
- Organizing successful agricultural co-operatives;
- Market access

4.3.3. Manufacturing

Manufacturing is the main contributor in Mandeni municipality in terms of municipal Gross Value Added (GVA) and source of employment. It contributes approximately 37.4% of the municipal GVA and employs approximately 26.86% of the Mandeni labour force. The following tables illustrates:

Year	2011	
Industry	**Number**	**%**
Total	27886.78	100
Agriculture, forestry and fishing	**1071.665**	**3.84**
Mining and quarrying	301.3812	1.08
Manufacturing	**7489.876**	**26.86**
Electricity, gas and water	8.89915	0.03
Construction	609.71	2.19
Wholesale and retail trade, catering and accommodation	7160.496	25.68
Transport, storage and communication	796.8299	2.86
Finance, insurance, real estate and business services	6349.034	22.77
Community, social and personal services	2529.07	9.07
General government	1569.818	5.63

TABLE 11: MANUFACTURING CONTRIBUTION TO GVA

Year	2011	
Industry	**Number**	**%**
Total	3336.466	100
Agriculture, forestry and fishing	**126.2756**	**3.78**
Mining and quarrying	50.38561	1.51
Manufacturing	**1247.823**	**37.40**
Electricity, gas and water	7.566253	0.23
Construction [SIC: 5]	31.06001	0.93
Wholesale and retail trade, catering and accommodation	532.4409	15.96
Transport, storage and communication	170.4363	5.11
Finance, insurance, real estate and business services	967.154	28.99
Community, social and personal services	80.35822	2.41
General government	122.966	3.69

TABLE 10: MANUFACTURING EMPLOYMENT CONTRIBUTION %^

The manufacturing sector in the Mandeni Municipality is based in Isithebe. The Isithebe Industrial Estate is managed by Ithala, and the estate manager states that the estate is almost 100% occupied.

There are a wide variety of industries in the estate including textiles, plastics, chemicals, and furniture.

In the case of Dokodweni study area, manufacturing can be regarded as a secondary sector in terms of contributing to the local economy

and creation of job opportunities. The Amatikulu Hatchery is a facility that can be regarded as the main contributor in the manufacturing sector. This facility is located approximately 29°4'36.04"S 31°38'46.32"E. The Amatikulu Hatchery was at one stage the biggest ornamental fish breeding facility in the Southern Hemisphere producing 2,5 million fish per year of over 100 species and varieties. Although the facility is not entirely a manufacturing plants as opposed to the likes of Isithebe, but the Amatikulu Hatchery facility was more pivotal in processing in the aquaculture sector and employed many local people.

This facility was started in 1989 after initial efforts by the owner, Stephanus Myburgh, to commercialize the research on shrimp culture did not materialize. All staff employed on the farm were South Africans, the majority being Zulu speakers from the local community. The main challenge sighted in the literature with regards to operation of the facility was theft of the shrimps. After the year 2000, shrimp prices declined dramatically and expansion was identified as the only solution to reducing production costs. In turn, various investment options were explored, but no further funding was secured ultimately forcing management to close the farm after the June 2004 harvest. Had the company entered into the new season, this would have led to bankruptcy. The infrastructure in the facility be worn out considering it has not been used for some time but it presents a potential for the area. The production system consisted of four ponds of 0.5ha, four of 1ha and two of 2ha. Two sets of nursery tunnels (PL12 to 1g) were not utilized in production. Water was pumped in from the nearby Amatikulu River Estuary. There were also other activities that were managed on the facility which are still being run today. These include tropical freshwater fish, aquarium plants and cow hide "dog chews" and fish flake production.

Some of the structural challenges within this sector identified in the LED include:

- Core infrastructure and service strengths of the location remain relevant;
- Access to labour;
- Impact of HIV/AIDS;
- Weak business-to-business networking;
- Disconnection between Isithebe and surrounding communities
- Many firms have not developed significant competitive advantages;
- Decline in Isithebe

4.3.4. Retail

Retail services in the Dokodweni study area is characterized by small pockets of tuck shops which sell basic commodities to local people. The location and concentration of these retail services is scattered across the

FIGURE 14: RETAIL SHOP IN MBIZIMBELWE

study area. Mostly they are located within residential areas with poor access road to some of them. The general services provision of these retail outlets ranges from the provision of basic food to taverns.

4.3.5. Tourism

Mandeni municipality is characterised by both cultural/eco-tourism potential due to its cultural background and natural heritage. The main features that attract tourists in Mandeni municipal includes beaches, estuaries, natural resources and historical sites, the wild life, Zulu culture. The nature reserves include the Amatigulu Nature Reserve, Ingwenya Nature Reserve, Ndulinde Hills and Ndondakusuka Hill. Tourism in Dokodweni study area is probably one of the most unexplored sectors of the local economy, yet the area is well surrounded by some of the municipality's prominent tourist attraction features. The following sub-sections elaborate:

4.3.5.1. Cultural Heritage[10]

The Tugela (correctly spelt Thukela) River presents many opportunities for tourism development in that a number of significant historical events associated with the river have left a rich legacy of major historical and cultural sites on what has now been referred to as the "Thukela Frontier.

The area was one of the most important agricultural areas of the Kingdom of KwaZulu since the reigns of Kings Malandela, Jama, Senzangakhona, Shaka, Dingane and Mpande. During the reigns of Kings Shaka and Dingane, the éNdondakusuka area formed part of the area regarded as Prince Mpande's sphere of influence. He had his house kwaMfemfe eGcotsheni in Ndulinde, which is where Prince Shingana was born and buried in 1911. The historical events which occurred in this area include:

- The Battle of Tugela which was fought on the slopes of Ndondakasuka in 1838 between a group of settlers from Port Natal under John Cane and Robert Biggar, and an Impi of Dingane's forces. King Dingane sent forces to eThekwini to destroy the settlers, but they took refuge in their ships, and were not attacked.
- The Battle of Ndondakasuka followed in 1856, and was fought between King Mpande's sons Cetshwayo and Mbuyazwe to contest the right of succession to the Zulu throne, provoked by Colonial interests.
- Deteriorating relations between King Cetshwayo and the colonial authorities resulted in the Ultimatum given to King Cetshwayo's izinduna on 11 December 1878 at the Ultimatum Tree on the banks of the Tugela in the eNdondakusuka Municipality area. This lead to the invasion of the Kingdom of KwaZulu on 22 January 1879, and the start of the Anglo - Zulu War, which saw the epic battles which have become part of world history.
- Fort Tenedos was built during the initial phases of the Anglo-Zulu war. Located on the northern bank of Tugela River. The site of this sort is best viewed from Fort Pearson, which is part of the Harold Johnsons Nature Reserve

These events form the nucleus of a rich historical past, which in addition to many other events and stories such as the history of the Dunn family at Mangethe, create rich opportunities for new tourism

[10] Mandeni IDP 2015/16

development. KwaZulu-Natal's core tourism market is derived from within its borders. Gauteng is KwaZulu-Natal's most important market. The key destinations are Durban Central and the South Coast, the Midlands and the North Coast. It has been estimated that the domestic that approximately R8 billion per annum in terms of consumer expenditure.

The Mandeni Tourism Strategy recommended the following about the historical sites in Mandeni:

- Package a historical tour specific to Mandeni;
- Make historical sites in Mandeni an essential stop on historical tours;
- Improve Access to the historical sites; and
- Link historical sites to adventure activities.

4.3.5.2. Natural Heritage[11]

Mandeni municipality is also fortunate to have three nature reserves in its municipal boundaries. These nature reserves; Harold Johnson and Amatigulu, are key assets of Mandeni. Nature reserves close to Durban offer tourists the opportunity to escape the city without having to travel far up north to the Zululand game reserves. Harold Johnson and Amatigulu Nature Reserves offer truly unique natural surroundings. Amatigulu Nature Reserve is an indigenous coastal forest, well situated on the impressive Amatigulu estuary. It boasts diverse birdlife as well as nationally rare examples of indigenous dune forestation. Harold Johnson Nature Reserve, similarly, is uniquely positioned high on the banks of the Tugela enjoying wonderful dioramas of the river as it tracks its way down to the sea. The reserve also boasts abundant bird watching opportunities for the nature tourist.

FIGURE 15: AMATIKULU ESTUARY

A management plan has been put together to promote the reserve as a venue for business tourism. In terms of nature reserves, the report suggested the following:

- More effective monitoring of staff at Reserves by Ezemvelo KZN Wildlife;
- Ensuring the quality of facilities at the Reserves and the safety of the animals;
- Outsource management of the nature reserves to suitably qualified candidates in the private sector;
- Extend Harold Johnson Nature Reserve;
- Mutually beneficial interaction between Harold Johnson and Seula Zimbili;
- Addressing the issue of land claims at Amatigulu;
- Follow through on the Ngwenya Nature Reserve Management Plan

[11] Mandeni LED

4.3.5.3. Blue Flag Programme

The Dokodweni Beach has been earmarked to be a Blue Flag Beach. The Blue Flag is a voluntary eco-label awarded to more than 4000 beaches and marinas in 49 countries across Europe, South Africa, Morocco, Tunisia, New Zealand, Brazil, Canada and the Caribbean. The aim of this programme is to promote sustainable development of beaches and marinas through strict criteria dealing with Water Quality, Environmental Education and Information, Environmental Management and Safety and Other Services. All Blue Flags are awarded for one season at a time. If the criteria are not fulfilled during the season or the conditions change, the Blue Flag may be withdrawn.[12]

FIGURE 17: DOKODWENI BEACH SIGNAGE

Attempts have been made to create a blue flag swimming beach along the coast. The Siyaya Coastal Development Plan was developed with the aim of improving the coast for tourism purposes and provides certain recommendations for such a beach to be established. A blue flag beach will go a long way in attracting beach holiday tourists to Mandeni. However investigation undertaken has led to the reconsideration of the role of Mandeni's coastline in terms of developing tourism in the municipality. It can therefore be concluded that there is little possibility that any of Mandeni's beaches could attain blue flag status.

FIGURE 16: DOKODWENI BEACH ABLUTION FACILITIES

Furthermore, even if a blue flag swimming beach could be created on the Mandeni coastline, it is not certain that this would represent the best use of the coastline in terms of generating tourism income. Beach holiday tourism also has no precedent in the municipality. Angling tourism, however, has a long history at places like Tugela Mouth, *Dokodweni* and Amatigulu. The Mandeni coastline is considered to be one of the best fishing spots on the whole KwaZulu Natal north coast. Different kinds of species of shark are found in the waters around the river mouths and in the summer months the rare Lebotes can be caught in the Tugela River Mouth. Therefore, angling tourism is necessary for the Mandeni coastline and should be promoted as a priority strategy.

The municipality has moved to erect appropriate infrastructure for the Dokodweni Beach such as electricity, ablution facilities, shelters, bins

[12] www.blueflag.org

etc. There is ample space for parking which can also be upgraded to accommodate more vehicles. In terms of the beach holiday visitors, there have been several cases reported of people drowning in the estuary. The Amatikulu estuary sits in between the beach and parking area. There have also been stories that from time to time people will disappear in the waters. Search teams will be deployed to look for the missing person only for them to be recovered some 48hours in the same spot where they were seen drowning. Nonetheless, the municipality has since employed life guards as means of restricting such cases. For emergency services, access roads need to be improved should such incidents occur, first aid treatment be provided.

During the summer seasons, many people flock to Dokodweni beach. There are even festivals which are prepared yearly in December. Through the iBeach Experience initiative, major events take place on the beaches of Dokodweni. Approximately 10 000 people attend these festivals and enjoy the unique lifestyle and music. The annual festival usually hosts some of the finest South African artists in different genres and DJs. Usually a three day programme, the festival is linked with other daytime activities such as the micro-lighting, 4 x 4 trails, golfing etc. The main challenge relates to crime and safety of visitors. There needs to be better security and vigilance around the area especially during these events otherwise it will damper the whole image of the area[13]

[13] http://durbannorthcoast.getitonline.co.za/2013/11/25/decembers-hottest-party-returns-kzn/#.VZz3R_mqqko

The Dokodweni beach is also known for its fishing activities with different species found along its coastline. There are currently local entrepreneurs operating with permits but there are those that who engage in illegal fishing activities especially at night. The permit does not allow for a fish market to be established but rather for fish produce to be sold on a door-to-door basis 20km away from the beach. Therefore local entrepreneurs are restricted to selling their produce to individual households. However there have been talks at the level of the Department of Agriculture, Forestry and Fisheries to introduce proper guidelines for fisherman to operate. Different types of fish extracted along Dokodweni beach include yellow-tale, sermon, king fish, locotes etc. One of the challenges experienced by fishermen is that there are no cold rooms close to the beach. As part of the value food chain, it is important that when fish are extracted from the sea they are stored within appropriate temperatures. Also boats can help speed up the extraction process and can create job opportunities as more people will be needed to assist with the netting.

4.3.5.4. African Village Beach Experience

Mandeni municipality approved in principle the concept of the authentic African Village Beach Experience on 12 September 2014. The Mandeni Tourism Strategy proposed that natural tourism in Mandeni be developed in the form of an African Village Beach Experience. The Dokodweni Beach has been earmarked as the focal point for this project which means it must portray an image of an African beach. This concept is not intended to detract from swimming as the main activity for visitors but reinforces the local, traditional,

community-based and used village which can function as a tourism attraction. Restaurants, pubs, shops, markets, and open public spaces would be the focus of the village with sea views just beyond. In order for the African Village Beach Experience to truly speak of authenticity, the Tourism Strategy proposes the following as under pinning developments which are part and parcel of the overarching experience:

Village Centre and Town Square/ Market Place: It is envisaged that the African Village Beach Experience will be centred on a village with a town square that includes restaurants/ street cafes, shops and market spaces. This would require careful town planning involving the IDM, MLM, EI, Project Management Firm and other stakeholders. In order to maximise the job-creation potential of this exercise, it is recommended that as much labour as possible be sourced from the community in the Dokodweni area. It is anticipated that a project of this nature will have a fairly long timeframe of between 5-10 years and it should allow for extensive awareness creation, training and skills development programmes which commence at the start of the project and continue throughout the implementation and operational phases.

FIGURE 18: PRAWN SHAK

Family Homes and Accommodation: An important part of the village economy will be African beach styled homes, which accommodate the local business owners, but that in certain cases provide accommodation (B&B/Self Catering). It is proposed that these homes be built in such a manner that they could offer up to 80 rooms or 160 beds worth of accommodation. It is envisaged that each home would be built on 1500 - 2000 sq. plots of land. The conceptual design of these homes would need to be done by an architect in consultation with MLM, the local community and other stakeholders and would need to tie in with the overall design concept for the African Village Beach Experience.

\The Hatchery and Prawn Shak are classic examples of existing accommodation and restaurant which can be integrated into the African Village Beach Experience theme within the study area. The Hatchery is provides accommodation with approximately 28 sleepers. The Hatchery has maintained that retro African feel naturally developed with influences from the Mozambican boarder only a few hundred kilometres north. The Hatchery is about 2km away from the Prawn Shak which is a restaurant that offers a mixture local traditional food with Asian, Mexican and Mozambican cuisines. Below the Prawn Shak, there is also the Inkwazi Camp which offers accommodation at a rate of R80pp.

FIGURE 19: AMATIKULU HATCHERY ACCOMMODATION

In terms of improving accommodation and attracting foreign direct investments, the tourism strategy / feasibility study suggested the following interventions:

- Increase the supply of accommodation in the municipality;
- Spread accommodation options more widely;
- Provide more varied accommodation;
- Provide accommodation supporting infrastructure

4.3.5.5. IMPORTANT TOURISM ROAD LINKAGES

Important to the area's tourism potential is its strategic location along the N2 Highway on the western side of the study area. Being a provincial corridor, this has a very important tourism facilitating role, in that it's responsible for the movement of coastal tourist from the northern areas of the province, such as those of UMkhanyakude District Municipality, to the southern areas such as those in the Durban Metro and Ugu District Municipality. The passing of these tourists presents an opportunity to the study area to attract these tourists to tourist attractions such as the Dokodweni beach. It is proposed that at the intersection of N2 and P46-7 (R66), a Cultural Heritage Visitors Hub be established which will include an information office, a museum and offices to house tourism SMME's ranging from accommodation owners, tour operators, activity providers to retailers and agriculturalist many of whom will operate or be linked to the African Village Beach Experience. This can also be linked to current tourism attractions in close proximity such as:

- The link to John Dunn "the White Zulu"
- The battle of eNdondakusuka
- The Leper colony
- The Ultimate Tree and Anglo Zulu War
- The battle of Thukela

The relocation of the airport and the location of the study area within this facility has to a large extent influenced the growth of tourism development within Ilembe. Tourist arrivals through flights might give areas in close proximity to the airport first appearance as opposed to travelling to far destinations. Although there is no evidence that the relocation of the airport has contributed to more tourist arrivals in the area, the assumption is that Dokodweni study area is well placed to benefit from visitors travelling by flights given its location and close proximity to the airport.

4.3.6. Synopsis of Economic Analysis

- The settlement's population has low skills development and thus limited economic opportunities
- Poverty conditions and unemployment are relatively high within the study area.
- The study area's asset are its people, which is largely female dominated and thus a labour pool.
- Economic sectors include Agriculture, Manufacturing, Retail and Tourism. The Agriculture sector is the most dominant. There is much evidence of sugarcane farming is pockets within the study area. The Simamisa Programme is being piloted within the study area.
- Manufacturing is less established within the project area, apart from the Amatikulu Hatchery which processes products such as dog chews.

- The tourism sector within the area is virtually undeveloped, although there are some marginal tourists who periodically visit the Dokodweni beach. The Tourism Strategy has made several proposals for this sector, more especially for the study area. Therefore the study area has potential to be a tourist destination which could perhaps be linked with the King Shaka Route.
- Retail is less pronounced due to the expansive spatial structure where small shops with settlements.

4.4. Spatial Trends

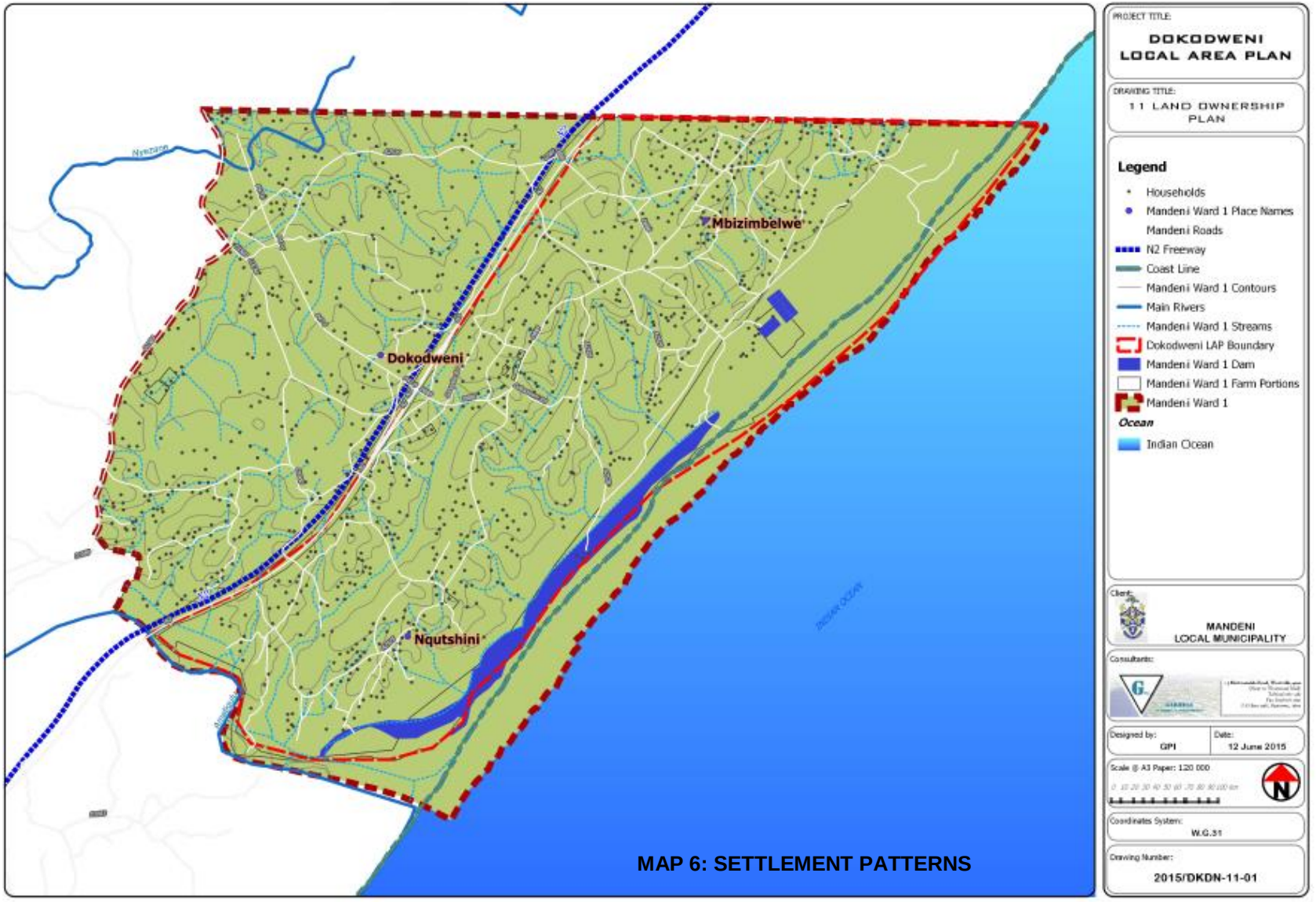
There are various factors influencing where and how people settle and organise themselves in space such as accessibility, economies of scale, services, environmental, cultural, political and socio-economic systems. This section will look at how people are settled and ownership of land within the study area.

4.4.1. Settlement Patterns

The spatial structure still reflects to a large extent the previous neglect of the former KwaZulu Homeland area, spatial fragmentation and land use separation originating from the unfortunate apartheid past. This means settlements are located away from economic centres meaning people need to commute over long distances in order to access economic and other opportunities that are offered in urban areas.

For the most part, Dokodweni study area is predominantly rural and consists of scattered low density rural settlements which are surrounded by sugarcane plantations and forestry. Settlements are generally located along access routes. There are some settlements located on the banks of valleys. It can be estimated that the current densities are 5-6 dwelling units per hectare. There are also settlements which have encroached on agriculture and protected land.

The following map illustrates the settlement densities within the study area.



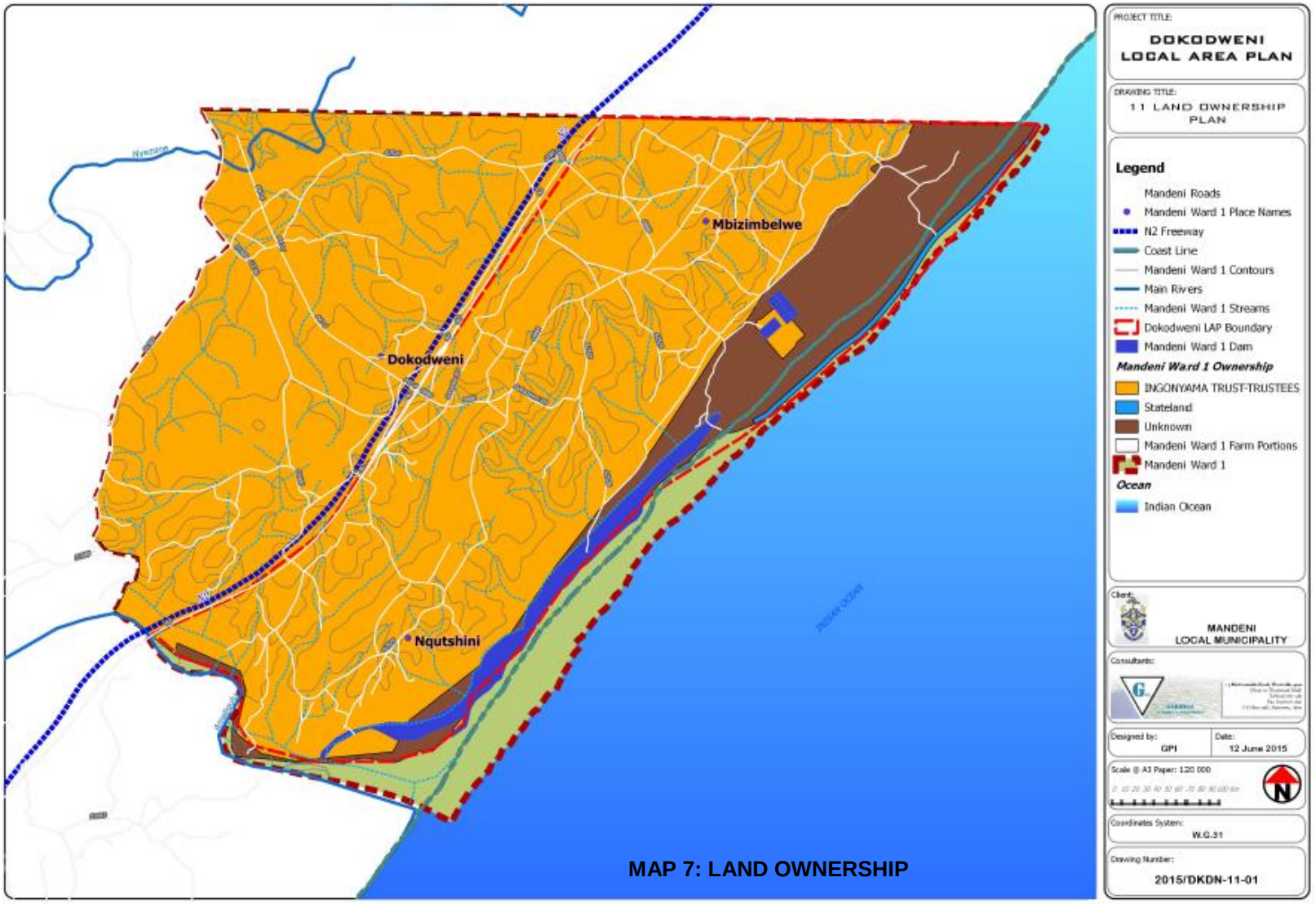
MAP 6: SETTLEMENT PATTERNS

4.4.2. Land Management

The land allocation system as it exists in most parts of Dokodweni study area and practised currently, reflects the centrality of traditional leadership and the indigenous land allocation systems and procedures in spatial arrangement. However this section will provide a generic process of land allocation across the Province. In terms of local processes practised in Macambini, the Traditional Council will need to be engaged as previous attempts did not materialise.

4.4.2.1. Land Ownership

The majority of land in the Dokodweni study area is owned by Ingonyama Trust. As already noted, the study area is under the leadership of Macambini Traditional Councilt. There are are five izigodi in Macambini but three fall within the study area. These include Dokdweni, Nqutshini and Mbizimbelwe. There is also a portion of land owned by the state while the rest is unkown.



MAP 7: LAND OWNERSHIP

4.4.2.2. Institutional Arrangement

The Macambini Traditional Council is under the leadership of Inkosi Mcambi. The following table is a list of Izinduna within the Dokodweni study area:

TABLE 12: IZINDUNA

NAME	ISIGODI
Mr Mthembu	Dokodweni
Mr Ntuli	Mbizimbelwe
Mr Myeza	Nqutshini

In addition, the Ward Councillor for Ward 1 is Mr EK Dube. At a fairly higher level there are four institutions involved in the management and administration of Ingonyama Trust land. These are the KZN COGTA, Ingonyama Trust Board, traditional councils, and municipalities. The roles and functions of these institutions are spelled out in this section of the report.

4.4.2.3. Land Allocation Process

Allocation of land for different land uses involves the consideration of various factors, but there are also regional variations in this regard. The most common uses include occupation/domestic, agriculture, mining, grazing, commercial and conservation uses.

4.4.2.4. Occupation/Residential Use

Alcock (2004) points out that the procedures for land allocation across communities are generally similar, but there are variations in criteria for who can access land, who must be present at allocation and the costs involved. Procedures for land allocations for different types of land uses differ. The pointing out and confirmation of boundaries is a very important step in the process. In some communities it is done in the presence of municipal councillors, in others, boundaries are demarcated in the presence of ibandla or immediate neighbours.

The allocation by the induna is ratified at a traditional council meeting. This process applies specifically if the person requiring land is from outside the area of jurisdiction of the traditional council concerned. The boundaries are not surveyed, but are based on sufficient consensus among the members of Ibandla. This is the system of land administration which exists through most of what today is known as KwaZulu-Natal just before colonisation. In the case of occupational rights, Ibandla will consider issues such as availability of land, possible encroachment to the neighbours and standards (site size) used in the area. Factors such as access to services, slope, soil conditions, flood lines, wetlands and others that define suitability of the land for settlement purposes are often not considered. In fact, they are not available at the disposal of those responsible for this function.

There are instances where members that hold beneficial occupation rights have been granted long term lease agreements or residential PTOs (discontinued) as a means to facilitate access to finance.

Historically, people could lose their occupational and land use rights in land if they abandoned it, relocated, committed very serious misdemeanours or through inheritance (which was largely patriarchal).

4.4.2.5. Agricultural Land

Overall approach to the allocation of land for agricultural land varies according to regions. For example, in some parts of KwaZulu-Natal (Jozini and Umhlabuyalingana), the general practise is to separate agricultural land from residential land. This is mainly informed by scarcity of arable land and its location along the valley lines (e.g. Pongola Flood Plains). In Umsinga, irrigation schemes have been developed where suitable land occurs along these UThukela (Tugela Ferry) and Mooi River.

4.4.2.6. Grazing Land

As opposed to residential and agricultural land, grazing land is communal and territorial. It is allocated according to izigodi. This forms part of social identity and accords with local traditions, customs and practices. As such, factors taken into account include location in relation to the settlement, availability of land and security. It often occurs on land that is not suitable for residential and crop production proposes. In some areas, grazing land is also under pressure from encroachment of settlements due to increasing land demand. As a result, the remaining land is overgrazed and susceptible to soil erosion. Arable land becomes communal grazing land in winter.

4.4.2.7. State Domestic Purposes

Allocation of land for state domestic purposes was previously undertaken through the disestablished regional authorities. This activity is now undertaken directly by each traditional council, but is also reported at district house of traditional leadership. Central to this is a need to ensure that the facility benefits as wide communities as possible, and consensus among the representatives of the affected communities. The net result of this has been the location of most public facilities in areas that are somehow removed from settlements. Over a period of time, the facility serves as a catalyst for settlement development.

4.4.2.8. Traditional Council Structures

Although the Constitution recognises the institution of traditional leaderships, lack of specificity about the nature and scale of its involvement on land administration and development remains a problem. It creates uncertainty, confusion and even contest over the decision-making powers on these matters. Traditional leaders have had powers to allocate land in rural communities, and have also played an administration role in respect of land use matters. Many of them have real capacity problems and their relationship with local government has been problematic. 14

The Traditional Leadership Framework Act, (Act No. 41 of 2003) does not allocate any land related functions to the institution of traditional leadership. Instead it regulates the structure of traditional councils, their representivity and the election of councillors.

The same applies to The KwaZulu-Natal Traditional Leadership and Government Framework Act, (Act No. 5 of 2005).

[14] PPDC 2005: Indigenous knowledge systems”

In KZN province, the KwaZulu Land Affairs Act, 11 of 1992 is the only legislation that deals with land allocation process on Ingonyama Trust land, the Permission to Occupy and planning laws in particular. The department also feels that there are gaps in the current guidelines as the indigenous knowledge is not well documented and at times this knowledge conflicts with western based planning laws. Hence one of the key deliverables of this project is to develop guidelines that will be user-friendly to the Traditional institutions when allocating land.

The KwaZulu-Natal Planning and Development Act will fundamentally change the responsibilities of the Department, as municipalities gain expanded powers and responsibilities in terms of development applications.

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4.4.2.9. Land Management Shortcomings

- Lack of cadastral data at a level below that of traditional leadership. Neither izigodi nor individual households are surveyed.
- The system is not codified, and this makes decision making inconsistent.
- There are no proper checks and balances to prevent corruption and allocation of sites in inappropriate areas.
- There is no register of all people who hold land and development rights.

4.5. Infrastructure and Access to Basic Services

4.5.1. Roads & Transport

The construction and maintenance of roads is a multifaceted responsibility in Mandeni municipality. This will be explained in detail, however the municipality is responsible for developing and maintain local roads. In contextualising the different roles and responsibilities played by different spheres of government in terms of our road system, it is important to make reference to relevant documents that provide a clear classification of roads in South Africa. For the purposes of this document, the TRH 26, South African Road Classification and Access Management Manual, 2012 (RCAM) will be used. The manual is the official requirement for the road classification and access management of the South African road network. It provides guidance to National, Provincial and Municipal spheres of government on the functional classification of roads and the methodology according to which such classification must be undertaken. It also gives guidance to how roads must be managed in order to function effectively in accordance with their classification. It also builds and expands on the classification system of the Road Infrastructure Strategic Framework for South Africa (RISFSA) of the South African Department of Transport (DOT, 2006) and supersedes both the draft National Guidelines for Road Access Management in South Africa (COTO, 2005) and the Manual for the Redefinition of the South African Road Network (DOT, 2008)[15].

According TRH 26, there are three main route numbering systems for the public, N for National, R for provincial (Route) and M for Metropolitan. In addition to the main road numbering system, provinces also provide for minor roads using P for provincial roads, D for district roads and T for tourist routes. Local Access Roads generally use an A prefix. There are six categories in the rural and urban road classification system.

The following table illustrates:

TABLE 13: ROAD CLASSIFICATION

Number	Function	Description
Class 1	Mobility	Principle arterial
Class 2		Major arterial
Class 3		Minor arterial
Class 4	Access	Collector street
Class 5		Local street
Class 6		walkway

In the case of Dokodweni study area, the road classification can be summarized as follows:

4.5.1.1. Class 1- National Roads

These roads are regarded as National roads that carry traffic countrywide. The maintenance of such roads is the mandate of the South African National Roads Agency (SANRAL). The N2 Highway is a national road that passes through and bisects Mandeni municipality. It carries large volumes of traffic linking Mandeni

[15] TRH 26

municipality with neighbouring municipalities such as KwaDukuza and Ethekwini Metro on the south and Umlalazi and Umhlathuze on the north. It is also regarded as the main corridor that provides linkages between the two shipping ports of Durban and Richards Bay as well as the King Shaka International Airport as La Mercy. For Dokodweni, this route serves two functions namely:

- It provides access to the project area either from the north or south direction.
- It serves as the main buffer on the west of the site as it sits on the project boundary.

The N2 is therefore critical to the Dokodweni area as it provides the necessary linkage and integration with major economic centres within and outside the municipal area.

4.5.1.2. CLASS 2- PROVINCIAL ROADS

Class 2 roads carry inter-regional traffic between smaller cities and medium to large towns. These are Provincial roads which are maintained by the Department of Transport within the Province.

FIGURE 20: P47-6

The P47-6 can be regarded as a Class 2 road that links Dokodweni study area with smaller towns such as Gingindlovu and Eshowe and Mandeni CBD through the R102. The P47-6 links with N2 to become the main access point to the study area. It is a two way carriage road which is tarred. The road has signage that directs motorists to their preferred destinations and is also marked throughout. This is an indication that this road is maintained on a continuous basis. It is critical for the study area for this road to be maintained as it also serves as a transport route to Mandeni CBD and other towns.

4.5.1.3. CLASS 3- DISTRICT ROADS

Such roads carry inter-district traffic between small towns, villages and larger rural settlements. These roads are maintained by the district municipality. The IDP 2015/16 indicates that district roads are mostly in a poor state and this has a negative bearing to the social and economic status of the local community, more especially the rural community. This has resulted to public transport operators refusing to travel on these roads. Ambulances in case of emergencies and water tankers delivering water to Jojo tanks find it impossible to travel on these roads.

FIGURE 21: D888

The D888 is an extension of the P47-6 which then becomes the main access point to the study area. It can also be regarded as the main route of the Dokodweni study area. The road measures 15m in width and is a two-way gravel road.

The D888 enters on the west of the study area and takes a north easterly direction creating a spine for smaller roads. There is currently no signage for motorists. There is also no pavements for pedestrians. Vehicles, pedestrians and livestock contest for the same space on the road. The safety issue is most notable when school children walk along the road and cattle are also seen crossing the road.

FIGURE 22: SONQOBA ROAD

In terms of activities along this route, these are concentrated along Dokodweni. Apart from that, largely characterised by sugarcane, forestry, vegetation and settlements along it. D888 plays an important role in the study area and therefore it will require some upgrading and maintenance.

4.5.1.4. CLASS 4 & 5 – LOCAL ROADS[16]

FIGURE 23: D888 ROUTE

Class 4 roads are collector roads that provide access to rural settlements while Class 5 roads provide access to individual properties within rural settlements. The IDP 2014/15 notes that the municipality has approximately 700km of municipal access roads under its jurisdiction. Furthermore, 100 km of these roads are classified as urban tarred roads, whilst the remaining are rural access roads. Majority of the rural roads are on topography that is mostly rugged, resulting in long steep gradients and tight horizontal alignments.

The IDP 2015/16 also notes that gravel roads are difficult to maintain in a good trafficable condition due to the steep gradients they find themselves. They require mechanical plants and equipment to carry out repairs and maintenance. The municipality does not have access to secure gravel borrow pits to guarantee supply of gravel to maintain the roads.

Whilst all local roads in Dokodweni study area are gravel, some are not user-friendly for motorists due to their poor condition. Generally,

[16] IDP 2014/15

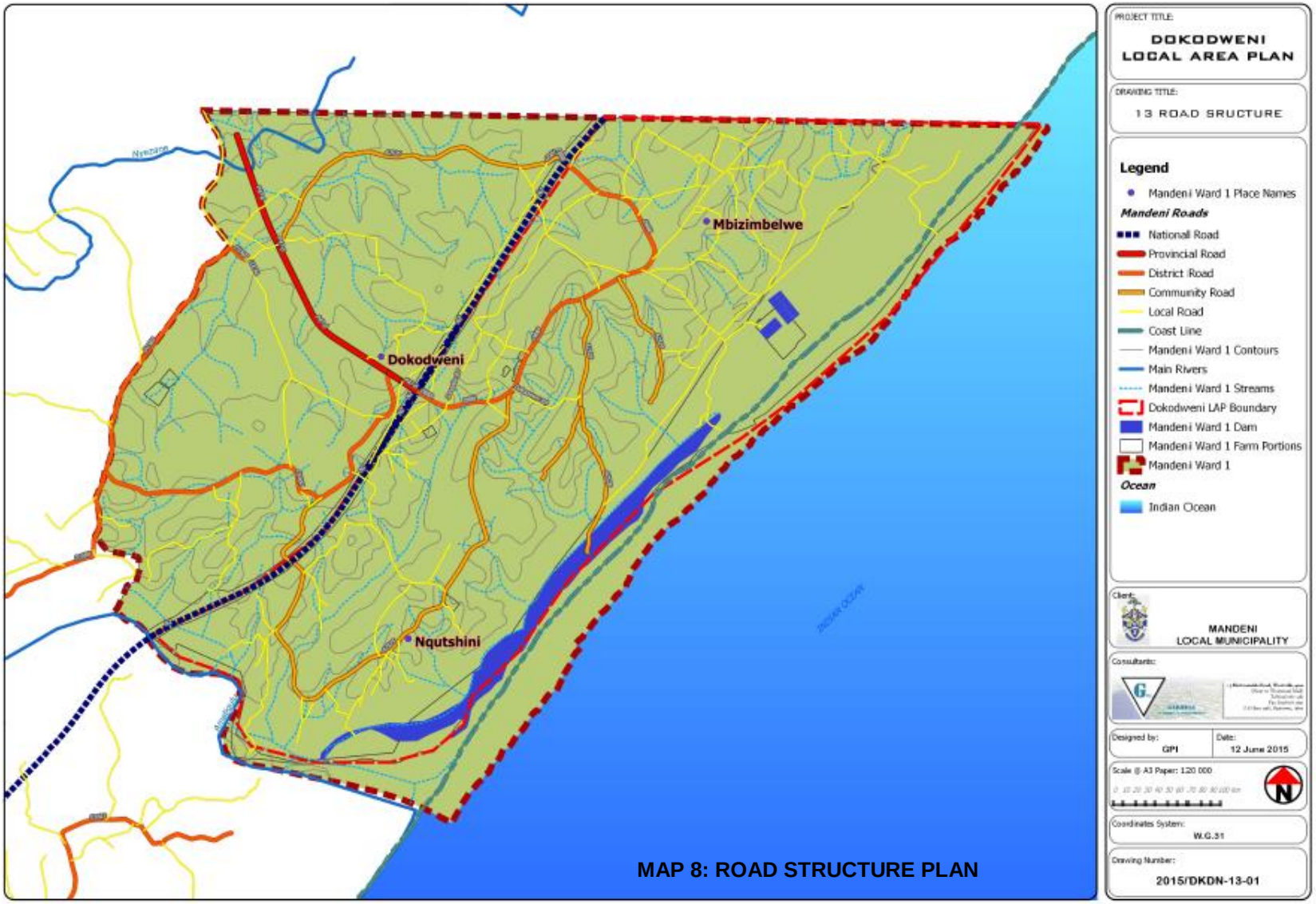
these local roads measure 3m in width. In some instances they do not have an allowance for two vehicles to pass each other at the same time. There is also no pavements or signage along these roads. Pedestrians and livestock also walk along them. They are also characterized mainly by sugarcane se roads are characterized by sugarcane and forestry along them. Whilst some of these local roads are not labelled, the following gives an indication of those that have names:

- Sonqoba road
- A2525
- A2528
- A2529

The municipality is in the process of concluding the preparation of a roads master plan. This roads master plan will produce a pavement management system which will assist in repairs and maintenance of roads.

4.5.2. Public Transport

There is no public transport facility/shelter in the form of a bus/taxi rank within the study area. Mini buses or taxis appear to be the main source of public transport within the study area. The Gingindlovu Taxi Association operates along the route of the study area. Areas within this route include Dokodweni, Ingulule, Mbizimbelwe and Nqutshini. There are some areas where taxis are unable to access due to the poor conditions of access roads. This means that people have to travel long distances with their groceries to their homes. There are also vans which are also used as public transport which carry people and are also used as delivery vehicles for goods. These assist especially in areas where taxis cannot reach. Private cars are evident but limited to a few households.



MAP 8: ROAD STRUCTURE PLAN

4.5.3. Water Services

The Ilembe District municipality is responsible for the planning and provision of water needs within its area of jurisdiction. The District Municipality has made strides in providing water services to residents of ward 1. Many households within Ward 1 benefit from Regional Water Scheme. On a monthly basis the District provides a truck that brings water to the local communities however some areas are inaccessible due to the poor road conditions. There are also three reservoirs within the study area.

FIGURE 24: THEMBITSHE STORE

The IDP 2015/16 indicates that water backlog of approximately 71% over the past decade or so. By 2011, just over 9% of households within Ward 1 had no access to water. Many households still rely on rivers and streams to access water whilst a few rely on springs. These are unhygienically clean and are vulnerable to contamination that can cause serious waterborne outbreak to the society.

The following table and diagram elaborate:

WATER SOURCE	
Borehole	40
Water Scheme	750
Rain Water Tank	60
Spring	136
Dam/Pool/Stagnant	64
River/Stream	257
Water Tanker	26
Water Vendor	7
Other	10
No Access	140

TABLE 14: WATER SOURCES

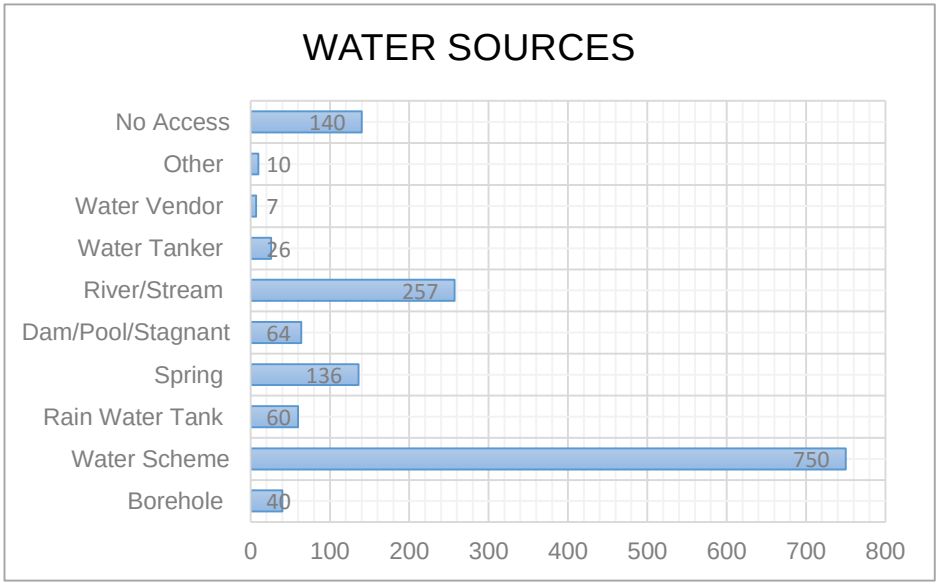


FIGURE 25: WATER SOURCES

4.5.4. Sanitation Services

The Ilembe district municipality is responsible for the planning and provision of sanitation needs within its area of jurisdiction. By 2011, the majority of households (66%) in Ward 1 use Pit latrines with no ventilation. This is followed by Pit latrines with ventilation (15%) and chemical toilets (13%). Only 1,3% of households within Ward 1 do not have access to sanitation. This is an indication that strides have been made in providing people with decent sanitation

The following table and diagram elaborate:

TABLE 15: SANITATION

SANITATION	
Sewerage	20
Septic	17
Chemical	185
Bucket	7
Pit: with ventilation	200
Pit: no ventilation	897
Other	6
None	18

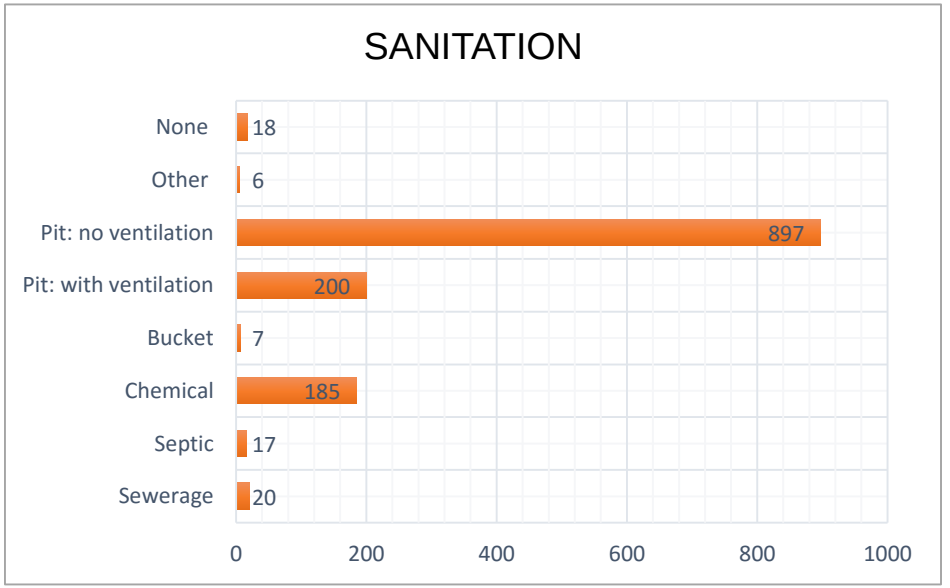


FIGURE 26: SANITARY SOURCES

4.5.5. Energy Services

Eskom provides the service of electricity within Mandeni municipality. The IDP 2015/16 indicates that networks within the area are severely constrained and cannot allow further connections for electrification. Eskom has recently completed some network upgrades which has released capacity for electrification projects in the interim whilst it is in the process of building two new sub stations in the area which when built will open up capacity for full electrification and universal access to electricity. The electricity backlogs in the area has been estimated to less than 30% at approximately 8000 households. There is an electrification project in Macambini which will see 1236 households connected when complete.

FIGURE 27: MV LINE IN DOKODWENI

FIGURE 28: ESKOM SIGNAGE

According to Census 2011, almost 92% of the households use electricity for lighting while only 5,3% use candles for lighting; 81% uses electricity for cooking while only 15% use wood for cooking; 45% of households use electricity for heating while only 21% of households use wood for heating and 28% do not use anything. The increase in demand for electricity puts pressure on the service provider, Eskom to supply more. The following table and diagram illustrate:

ELECTRICITY (LIGHTING)		ELECTRICITY (COOKING)		ELECTRICITY (HEATING)	
Electricity	1240	Electricity	1091	Electricity	610
Gas	17	Gas	28	Gas	35
Candles	72	Paraffin	14	Paraffin	15
Paraffin	3	Solar	6	Wood	288
Solar	15	Wood	203	Coal	7
None	4	Coal	0	Dung	10
		Dung	6	Solar	7
		Other	0	Other	0
		None	4	None	379

TABLE 16: ENERGY SOURCES

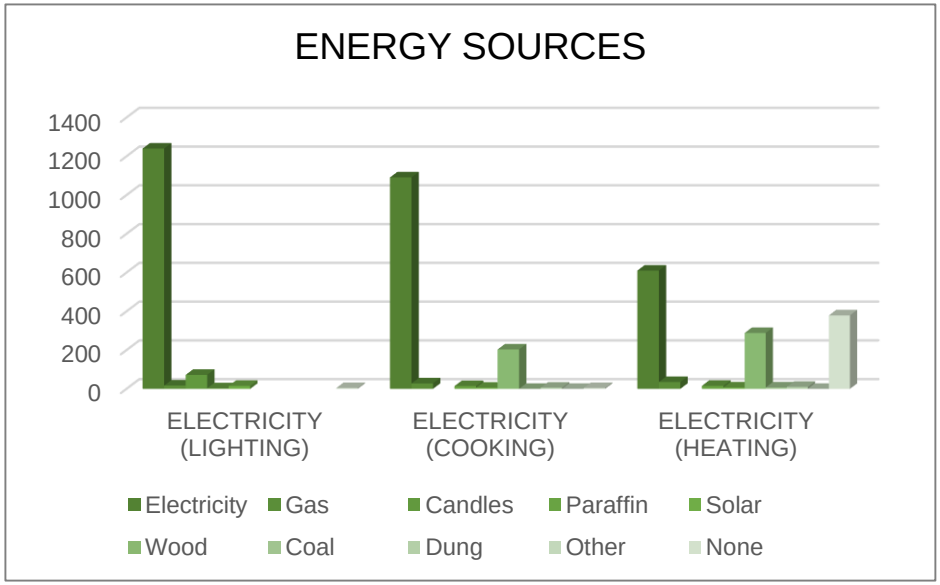


FIGURE 29: ENERGY SOURCES

4.5.6. Refuse Removal Services

There are various role players in waste management. Waste management has moved on from being purely based on a remove and dump system, to more sophisticated Integrated Waste Management Planning systems based on waste hierarchies.

The IDP 2015/16 note that the municipality provides a door to door service to all customers (business and residents) on the billing system within the urban areas. Rural areas are serviced by communal bins placed strategically within walking distances of households. This is translated to a basic level of service and is a once a week service. This collection and disposal service is currently outsourced to a waste collection and disposal contractor. According to Census 2011, most households (93%) in Ward 1 dispose their own down while only 1,2% of households benefit from the municipal waste disposal.

The following table and diagram illustrate:

TABLE 17: REFUSE REMOVAL

REFUSE REMOVAL	
Local Authority > 1 per week	17
Local Authority < 1 per week	10
Communal	37
Own Dump	1262
None	17
Other	9

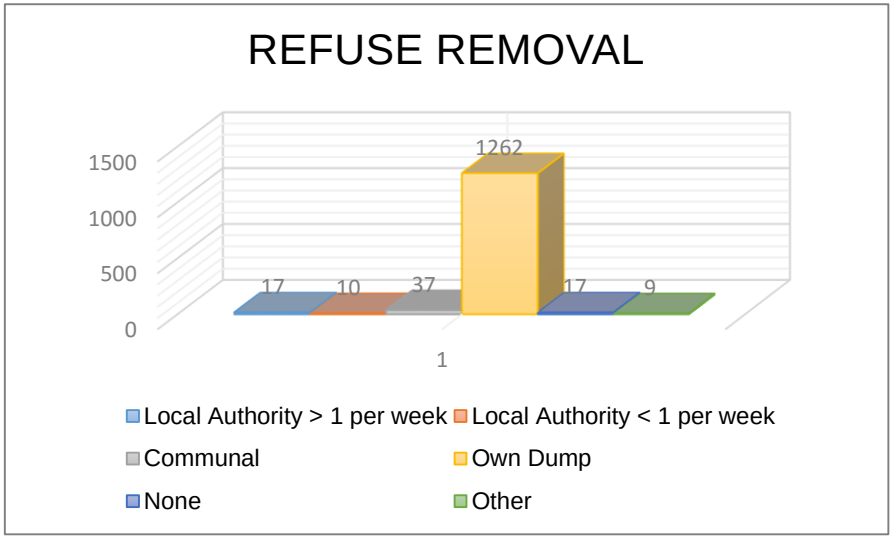


FIGURE 30: REFUSE REMOVAL

4.5.7. Communication Services

Communication is important especially in a rural setting like the study area. In terms of household goods, the majority of households (87%) own cell phones. Only 6% of households own a landline. There is a network reception which is located in the Dokodweni area within a residential property.

SS A servitude has been provided for this network pole as it is also fenced. However there are some areas within the study area where the network is poor.

FIGURE 31: SERVITUDE (D888)

Almost 20% still rely on communication through post-boxes. There are other household goods which significant. Approximately 80% of households own a radio whilst 76% of households own a TV.

The following diagram illustrates:

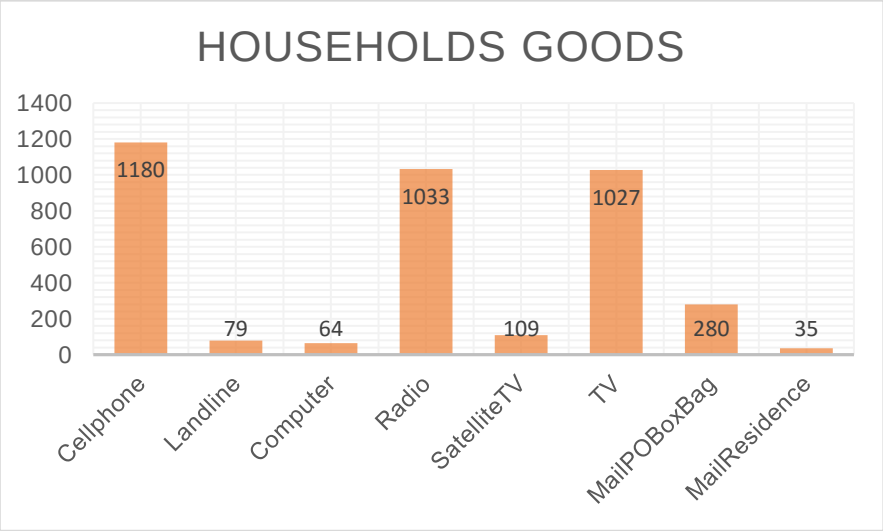


FIGURE 32: HOUSEHOLD GOODS

4.5.8. Human Settlements

Mandeni Municipality has a functional Human settlement Unit. The municipality has also received a grant funding for the preparation of the Housing Sector Plan and the review is currently under way. According to Census 2011, almost 66% of the population has a modern typology house whilst 32% is traditional. The following diagram illustrates:

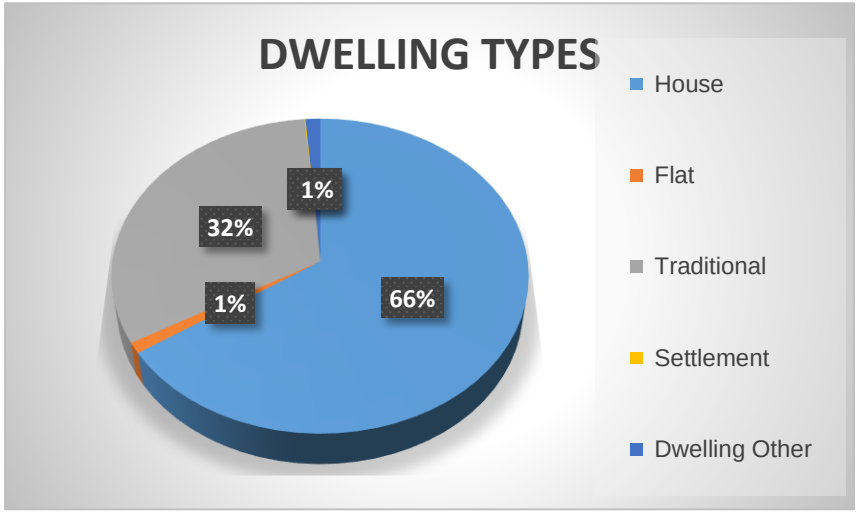


FIGURE 33: DWELLING TYPES

In the Dokodweni study area, housing typologies are largely characterised by traditional typologies surrounded by typical

rondavels with the material being either brick, mud or clay. The densities are usually 6 dwelling units per hectare. The following.

Typical housing typology associated with mud huts and rondavels.

4.5.9. Synopsis Infrastructure Issues

- D888 is the main route within the study area. However this road is in need of upgrading and maintenance. The same applies for access roads to settlements. Poor road conditions has implication in terms of the public transport in that taxis refuse to enter in the villages due to inaccessibility.
- Huge water backlog within the study area which has meant that people have to rely on streams and rivers to access water. These sources of water are unhygienic and are prone to contamination.
- Majority of households have Pit Latrines with no ventilation. There is currently no water-borne sewerage within the area due to the topographical conditions of most parts of the study area.
- There is a good supply of electricity within the study area. Those areas which are not yet covered need to be, to avoid illegal connections.
- Communication reception is relatively poor in some areas within the area. With the growing number of households with cell phones within the study area, there is a need to improve the network reception.
- Majority of households dispose of their own refuse.
- Housing typologies are largely traditional in nature. Some are located in harsh topographical conditions.

4.6. Social Facilities

This sub-section provides an overview of the social facilities within the study area. The CSIR space planner was used to calculate the demand for facilities in relation to the threshold population required for each facility.

4.6.1. Educational Facilities

Primary Schools located within the study area are well spread throughout. This is not the case for Secondary schools. A total of 4 Primary schools and only one Secondary school within the study area.

TABLE 18: CSIR REQUIREMENTS FOR EDUCATIONAL FACILITIES

CSIR Space Planner Requirements	
Population Threshold Range (Optimal)	7 000 people for large primary school
Access Distance	5km/ 20min travel
School size	School size 960 learners for a threshold of 7 000 people

According to the standards of provision there are enough primary and secondary schools within the study area. The following table provides a list of names of the schools within the study area and their location:

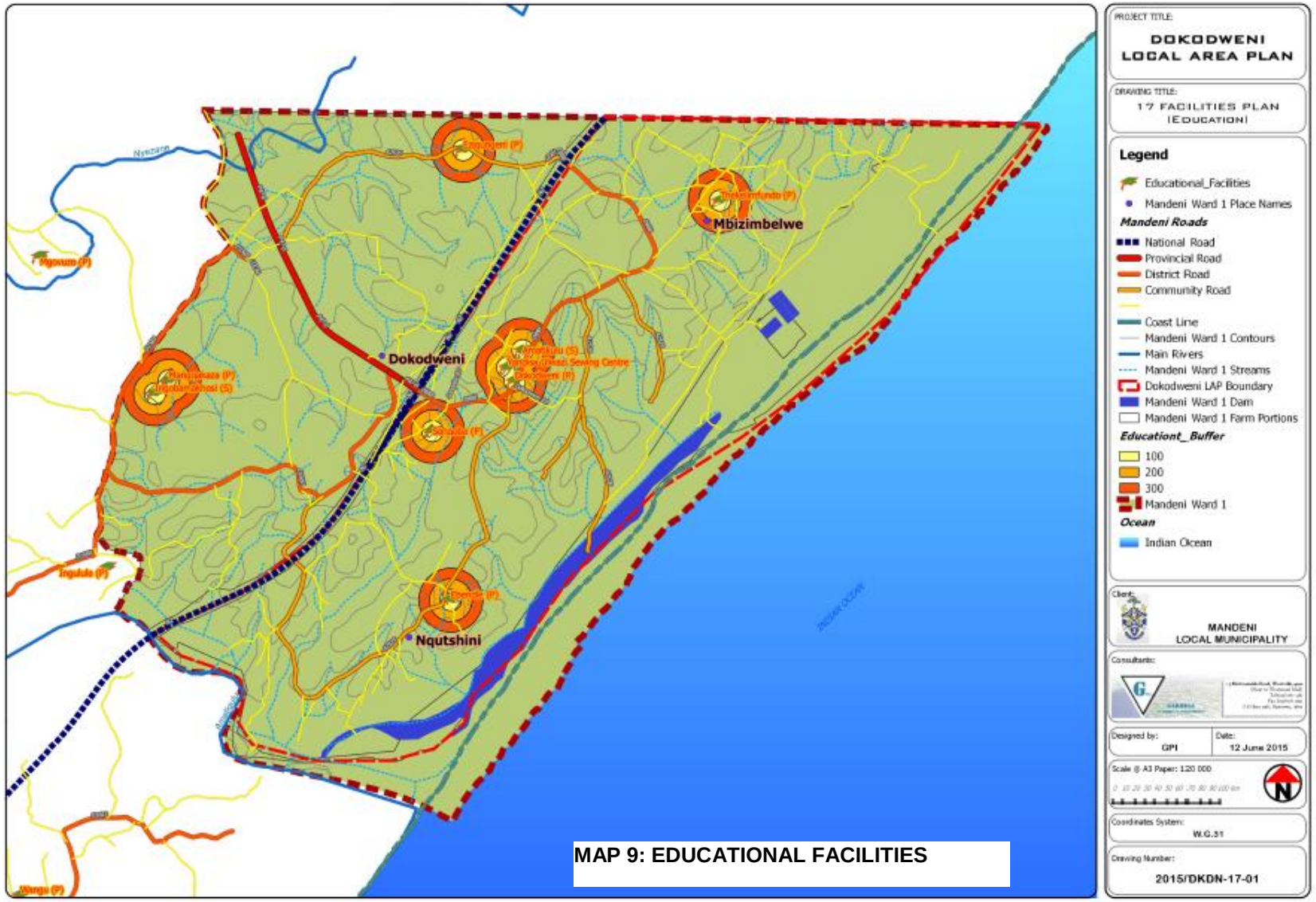
FIGURE 34: SONQOBA PRIMARY

TABLE 19: NAMES OF SCHOOLS

SCHOOL NAME	ISIGODI
Thekelimfundo Primary	Mbizimbelwe
Dokodweni Primary	Dokodweni
Sonqoba Primary	
Amatikulu Secondary	
Yandisa Ulwazi Sewing Centre	
Ebendle Primary	Nqutshini

In terms of Tertiary education, this refers to universities, universities of technology and colleges, Adult Basic Education and other skills development facilities. Tertiary education facilities are to be provided at the ratio of 1 facility per 100 000 residents and accessible through a nodal area or near a public transport hub. There are no Tertiary facilities within the study area. However there is an arrangement of

ABET classes held within the Dokodweni Primary after hours and Yandisa Ulwazi Sewing Centre within Dokodweni area.



MAP 9: EDUCATIONAL FACILITIES

4.6.2. Health Facilities

There is only one clinic which supplies the study area and is located in Dokodweni area. This clinic caters for people of Dokodweni and other izigodi namely Nqutshini Mbizimbelwe, Ingulule and Mangqakaza.

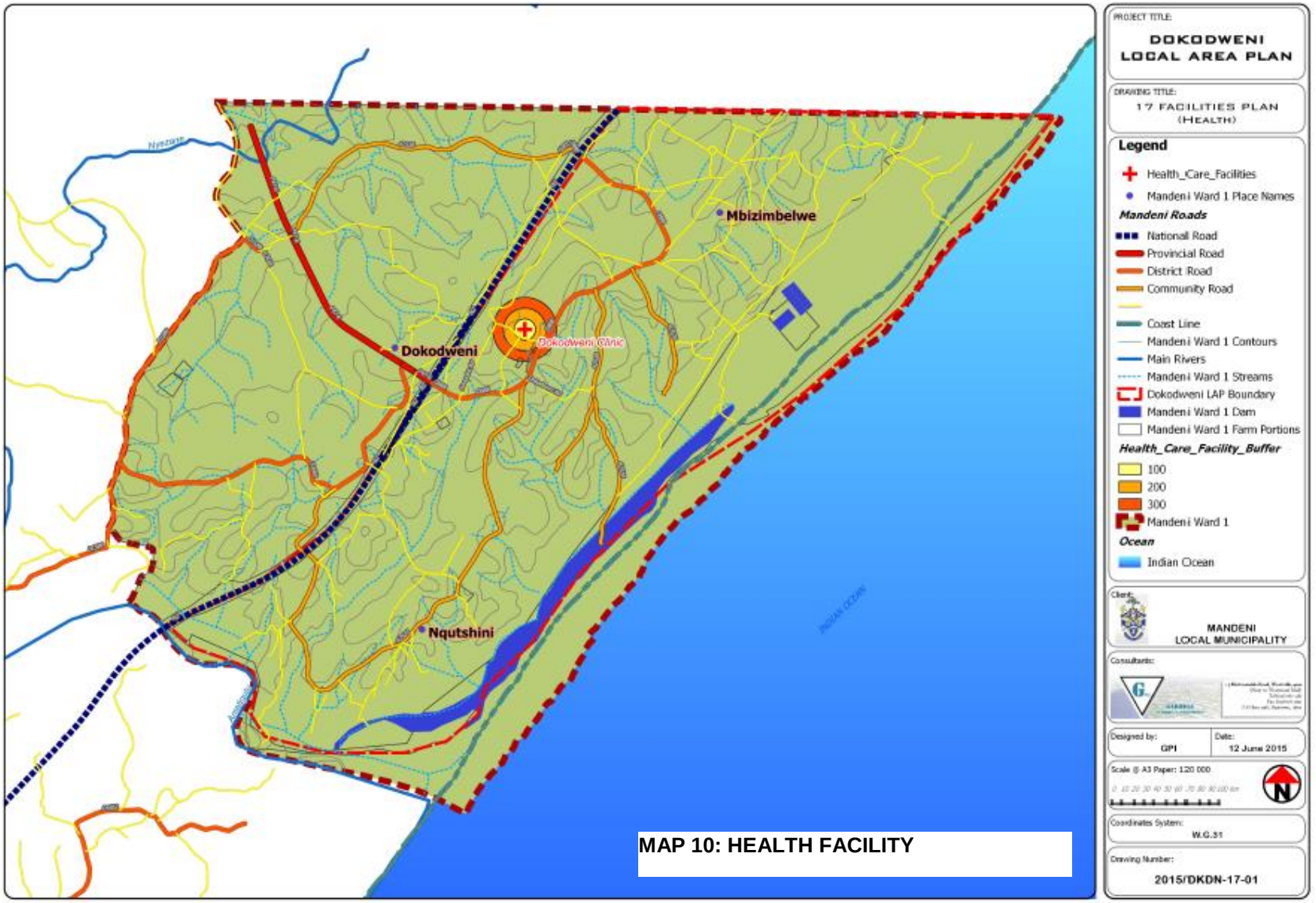
TABLE 20: CSIR REQUIREMENTS FOR HEALTH FACILITIES

CSIR Space Planner Requirements	
Population Threshold	optimal 40 000 people (range 5 000 - 70 000 people, largely for those not privately insured)
Access Distance	90% of population served within 5 km

According to the standards of provision the existing clinic is enough to cater for health facilities. However, another satellite one could be needed should the population trends increase.

TABLE 21: NAME OF CLINIC

CLINIC NAME	ISIGODI
Dokodweni Clinic	Dokodweni



MAP 10: HEALTH FACILITY

4.6.3. Post Facilities

Currently, there is no Post Office within the vicinity of the study area. However there are 3 post boxes in the study area located in each isigodi namely Dokodweni, Mbizimbelwe and Nqutshini. The following table provides the requirements post facilities:

TABLE 22: CSIR REQUIREMENTS FOR POST BOXES

CSIR Space Planner Requirements	
Population Threshold	10 000 – 20 000 people
Access Distance	5 km - 10 km

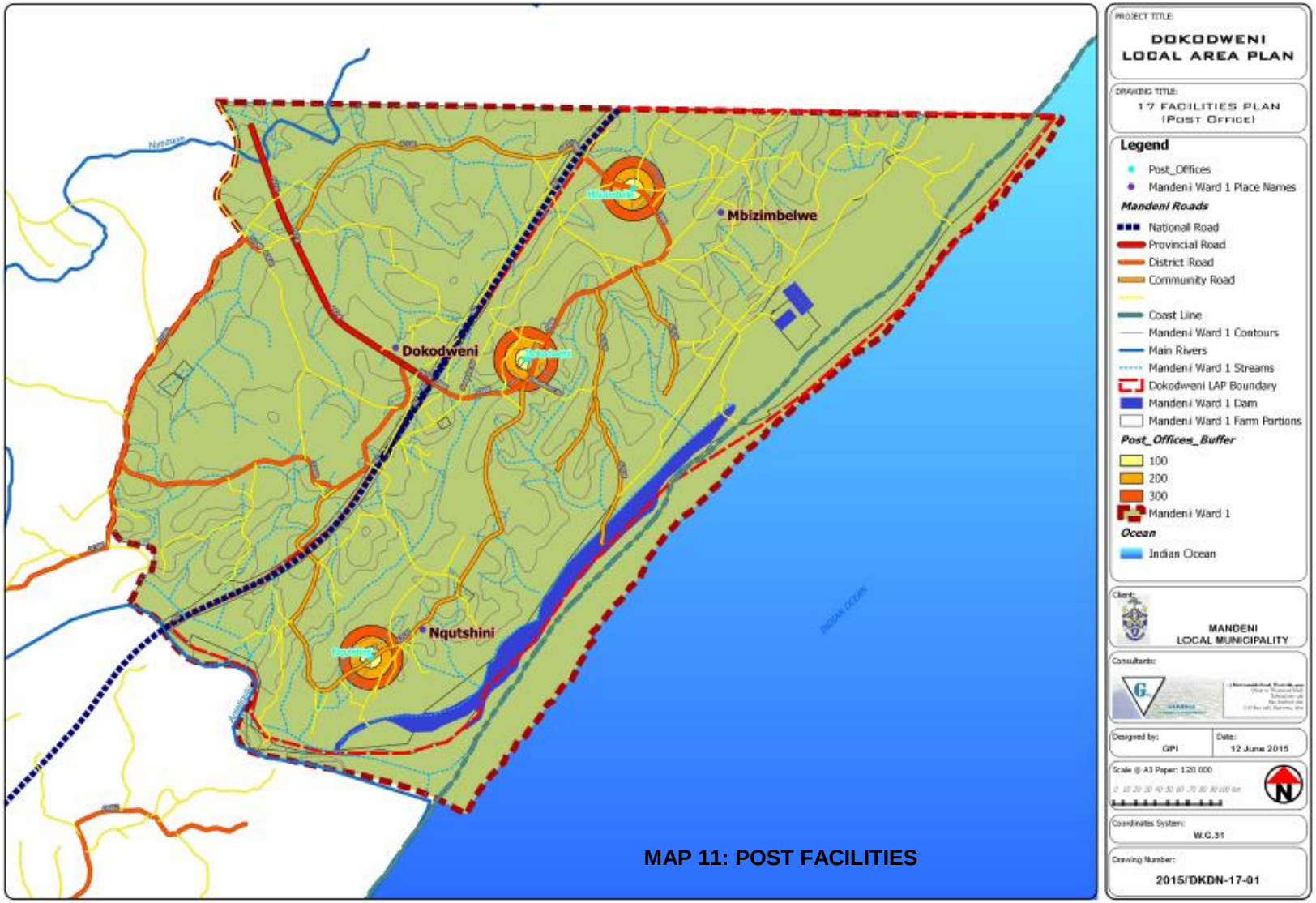
It is noted that some of these facilities require some renovations and maintenance as they appear to be abandoned and vandalized. Nonetheless, post services are relatively enough in the study area

FIGURE 35: MBIZIMBELWE POST BOX

The following table is a list of all the post boxes within the study area:

TABLE 23: NAMES OF POST BOXES

NAME	ISIGODI
Mbizimbelwe post box	Mbizimbelwe
Dokodweni Post Box	Dokodweni
Nqutshini Post Box	Nqutshini



MAP 11: POST FACILITIES

4.6.4. Recreation Facilities

There are 8 sports facilities within the study area some of which are located within schools and others are standalones. These sports facilities are relatively evenly distributed and are well accessible.

CSIR Space Planner Requirements	
Population Threshold	0.56 ha per 1 000 people An additional 0.3 ha per 1 000 in metropolitan areas for higher-order facilities
Access Distance	3 km - 10 km local facilities 10 km - 50 km regional facilities

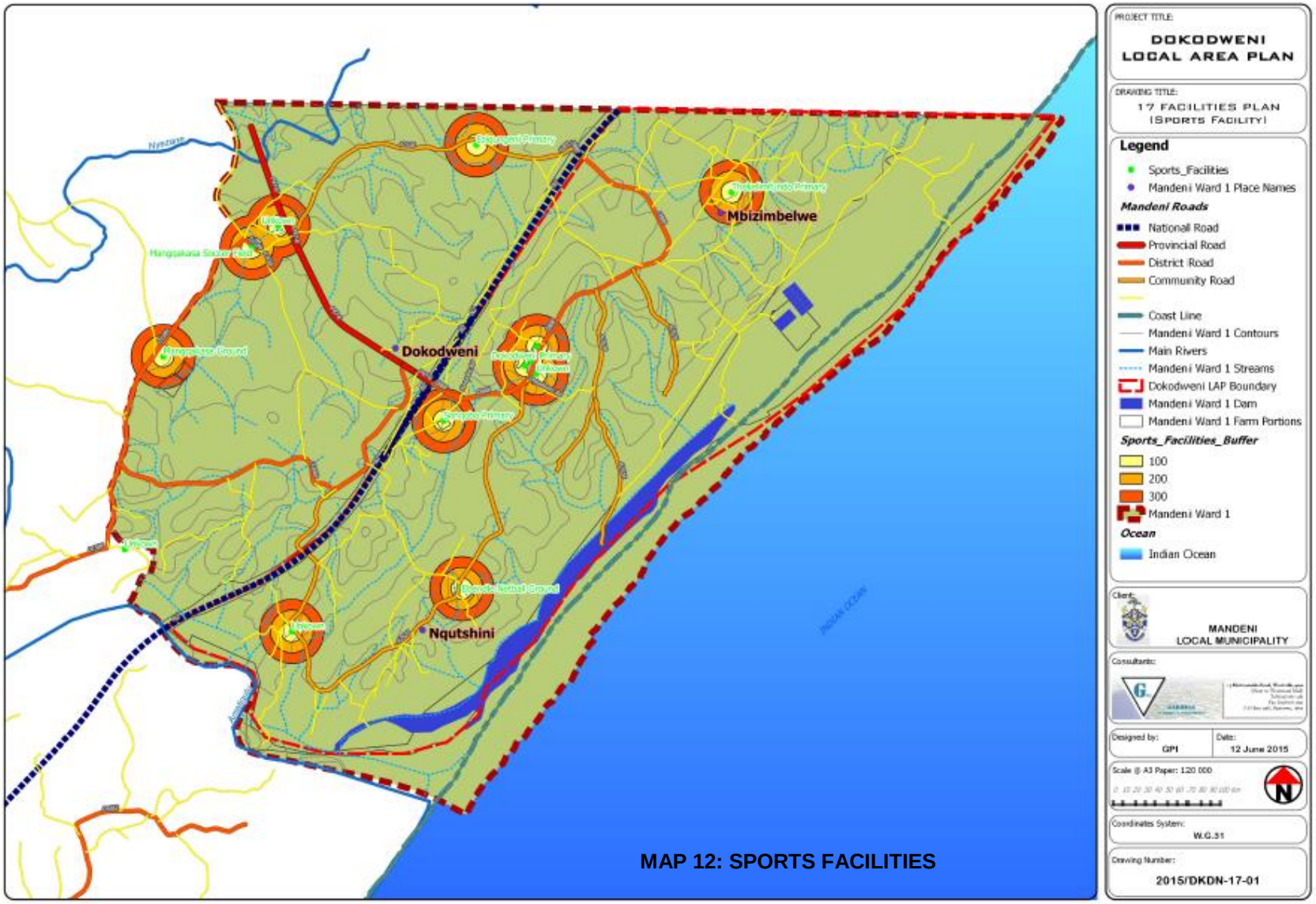
TABLE 24: CSIR REQUIREMENTS FOR SPORTSFIELDS

According to the above guidelines, sports facilities are enough for the study area. However some of them need upgrading and proper maintenance. The following table provides a list of names of all the sports facilities and where they are located:

FIGURE 36: UNKNOWN SPORTSFIELD

TABLE 25: NAME OF SPORTSFIELDS

NAME	ISIGODI
Thekelimfundo Primary	Mbizimbelwe
Dokodweni Primary	Dokodweni
Unknown	
Sonqoba Primary	
Dokodweni Ground	
Amatikulu Secondary	
Ebendle Netball Ground	Nqutshini
Unknown	



MAP 12: SPORTS FACILITIES

4.6.5. Places of Worship

There are 6 places of worship within the study area. Because the worship sites are linked to different religious denominations, the criteria for provision of such facilities are very different. The criteria used for the need of such facilities is based on their demand. The following table elaborates

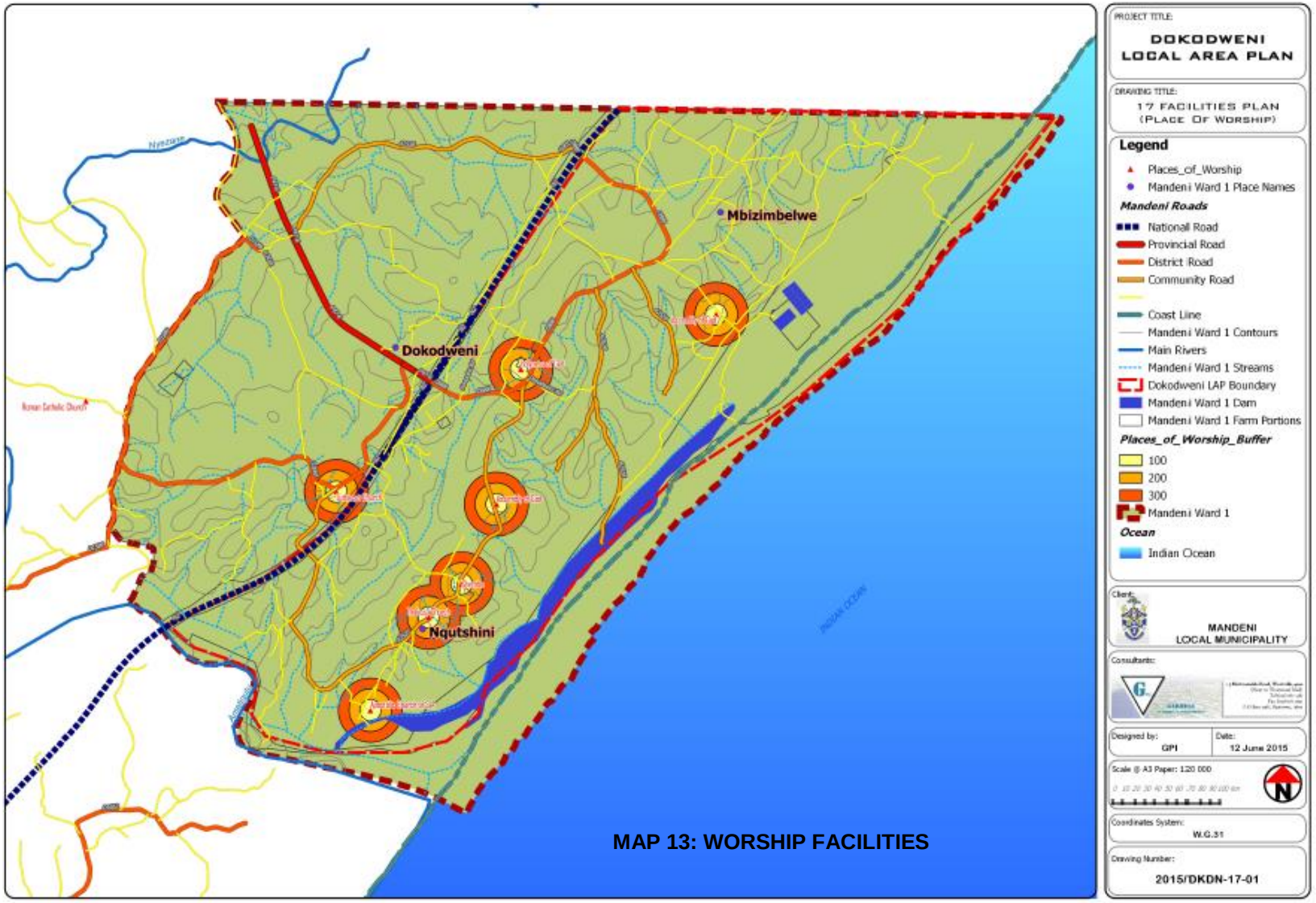
TABLE 26: CSIR REQUIREMENTS FOR PLACES OF WORSHIP

CSIR Space Planner Requirements	
Population Threshold	3 000 - 6 000 people
Access Distance	Varies depending on demand; 2 km typical maximum

The following table provides the names and the location of worship facilities within the study area:

NAME	ISIGODI
Assembly of God	Mbizimbelwe
Holyness of God	Dokodweni
Apostolic Church of SA	Nqutshini
Thokoza Church	
Shembe Church	
Assembly of God	

TABLE 27: NAMES OF PLACES OF WORSHIP



MAP 13: WORSHIP FACILITIES

4.6.6. Social Facilities Shortcomings

- **Educational:**
  - ⇒ No library in schools
  - ⇒ No school halls/indoor centres
  - ⇒ No laboratory to better the results of learners particularly those who are in Grade 12
- **Health:**
  - ⇒ Some residents have to travel long distances to access the clinic. Mobile facility is needed.
- **Post services:**
  - ⇒ There is no post office within the study area.
  - ⇒ The existing post boxes in need of renovations and maintenance.
- **Recreation**
  - ⇒ Existing sports grounds need upgrading and maintenance
  - ⇒ Additional infrastructure in these sports grounds is also needed such as ablution and water.
- **Community hall**
  - ⇒ There is only one community hall in the ward which is located in Mangqakaza, outside the study area.
  - ⇒ Another community hall is needed within the ward.
- **Security and safety**
  - ⇒ There is currently no police station within the study area.
  - ⇒ A satellite police station is needed
- **Social services**
  - ⇒ There are no offices related to social services within the study area namely Home Affairs, Social Development etc. meaning people need to travel to the CBD for these services. Transport costs are high.
  - ⇒ Satellite offices and pension pay-outs are needed

4.7. Environmental Analysis

This sub-section provides an analysis of the environmental status of the study area. It should inform the recommendations and proposal for future development

4.7.1. Introduction

The Mandeni Coastline, which is the Dokodweni and Tugela Mouth, is approximately 29km of the coastline, against the 46 km of the KwaDukuza coastline. In comparison to the KwaDukuza Coastal Area, the Mandeni coastline is characterised by more subsistence and commercial agriculture and less transformed natural areas including the Dokodweni Area. The less transformation of the Mandeni Coastlines is due to the presence of the Amatigulu Nature Reserves and Red Hill which stretch for approximately 16 km up the coast and measured for approximately 1614ha in extent. In addition, north of the Dokodweni Area exists the uMlalazi Nature Reserve, which is managed by the Ezemvelo KZN Wildlife. In light with the afore-stated, the Ezemvelo has got activities linking the UMlalazi and Amatigulu Nature Reserves which are in the form of natural trails, famously known as Siyaya Coastal Trails.

The Dokodweni area is located within the coastal zone, which is fed by Amatikulu/Nyoni estuarine system. This coastal zone is connected to the hinterland and influenced by river catchments. In addition, this catchment area is affected by a number of human activities such as subsistence agricultural, livestock and other human activities. The coastal zones can be defined as ecosystems where oceanic and terrestrial processes meet in transition.

The Dokodweni area, especially towards the coastal protected zone, consists of coastal ecosystems which provide free ecosystem goods and services in the form of, amongst others, natural resources, which sustain livelihoods and coastal and ocean recreation which contributes to an improved quality of life of local inhabitants.

Many studies, undertaken within the Dokodweni Area, depicts the area as having a huge potential for tourism, blue economy industrial, leisure and upmarket housing development. More research have been done regarding the biodiversity found in the area and which need to be protected, using a number of conservation mechanisms / programme or plans in existence in South Africa and KZN Province to be specific. Such conservation mechanisms and programmes include:

a. Protected areas in the form of nature reserves
b. Protected Areas Expansion
c. Marine Protected Areas
d. Stewardship Programme and
e. Identification and Mapping of Important Biodiversity Areas

4.7.2. Topography

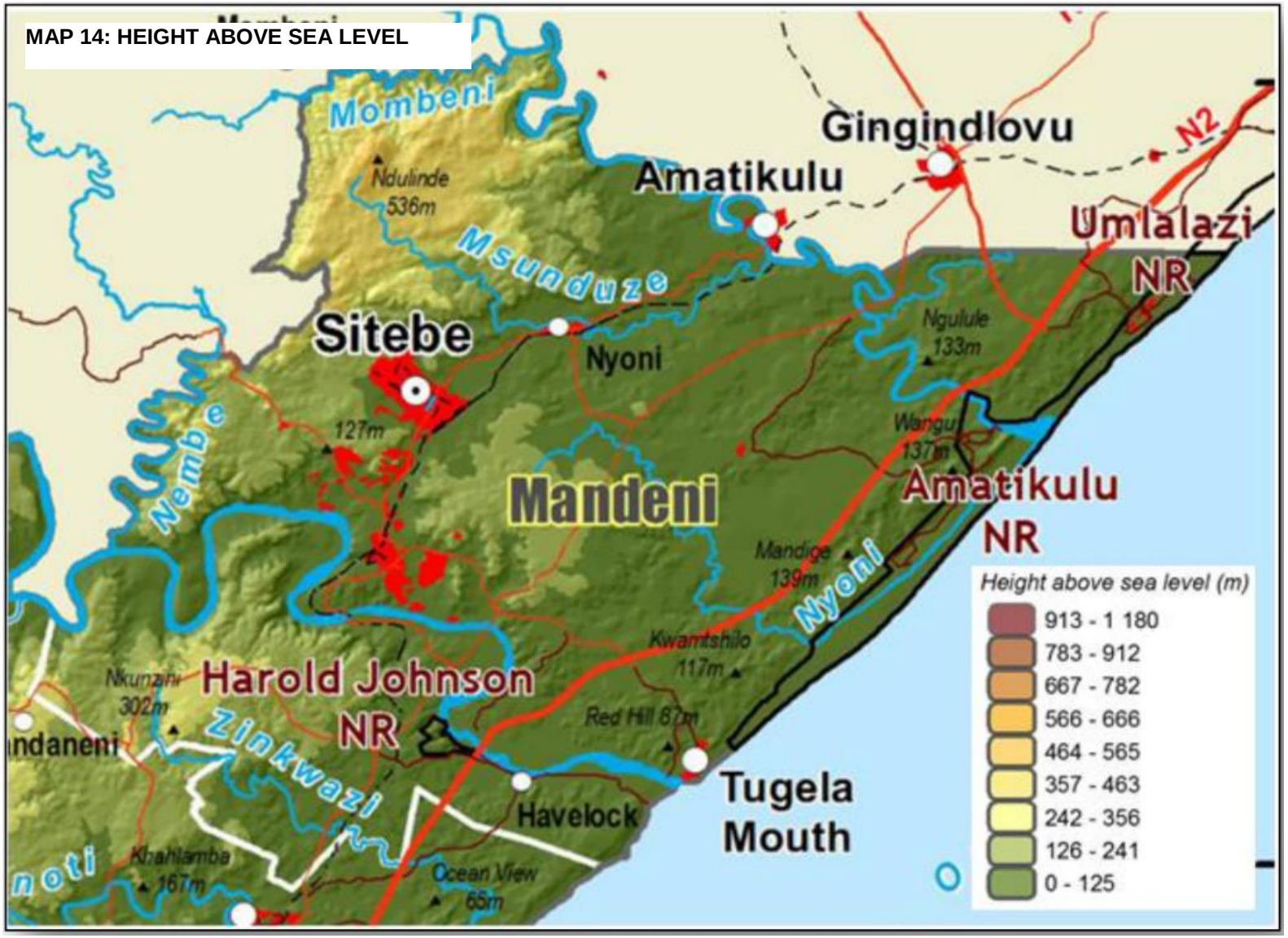
The iLembe District is characterised by flat coastal plains within the KwaDukuza and Mandeni local municipalities, with steeper topography occurring westerns and inland into the Ndwedwe and Maphumulo Municipalities. The altitude within the District ranges from sea level to 1200 metres above sea level along the western

border of the District (GISCOE, 2011). The variable topography characteristic of KwaZulu-Natal and the District creates biophysical habitat and micro climatic conditions which support a range of biodiversity. North facing slopes are generally warmer and drier, supporting habitat types such as grasslands. South facing slopes, escarpments and sheltered kloofs on the other hand tends to be cooler and wetter, commonly providing conditions favourable for supporting indigenous forest. This mosaic of habitat provides opportunity for a diversity of biota with different habitat requirements to exist within relatively smaller areas, in comparison to regions with flat topography. The cool, damp scarps and sheltered kloofs also provide refugia, for example protection of important flora and fauna against fire and utilisation/damage from anthropogenic factors.

The majority of land in the Dokodweni study area is characterised by fairly low laying and even landscapes with the occasional undulating range. The average height of the study area averages 0-125m above sea level. Based on the field survey, the broader area has minor limitations to development as far as topography is concerned. All proposed development is likely to have limited earth works which implies that major disturbance to the soil and stock pile of earth is not likely to occur.

The following map demonstrates:

MAP 14: HEIGHT ABOVE SEA LEVEL

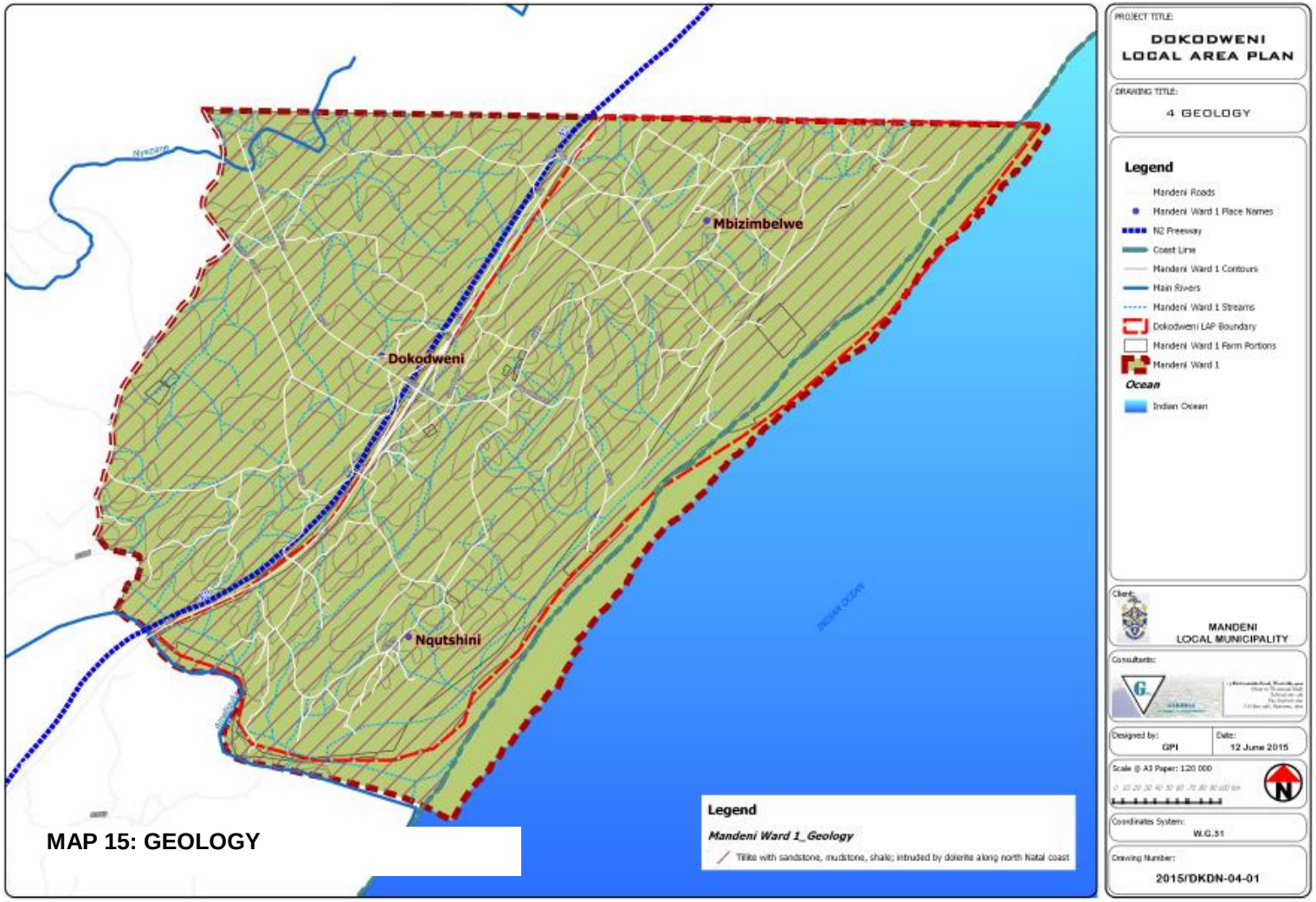


4.7.3. Geology

The underlying geology is predominantly tillite with sandstone, mudstone, shale intruded by dolerite along with North Natal Coast.

Tillite soils are derived from Dwyka sediments. These soils form a hard stony clay which drains poorly, is usually slightly acidic and becomes waterlogged in the wet season. Locally it's known as *vaalgrond*, due to its yellow or grey colour which is caused by a chemical change that occurs during the wet season. [17]

The following map illustrates



MAP 15: GEOLOGY

[17] www.sanbi.org/gardens/hantam/geology

4.7.4. Vegetation

Climate is associated with vegetation types. There are two vegetation types in the Dokodweni study area. These include the Coastal Bushveld/Grassland and Sand Forest. The various vegetation types are described in the proceeding sections:

4.7.4.1. Kwazulu Natal Coastal Belt Grassland

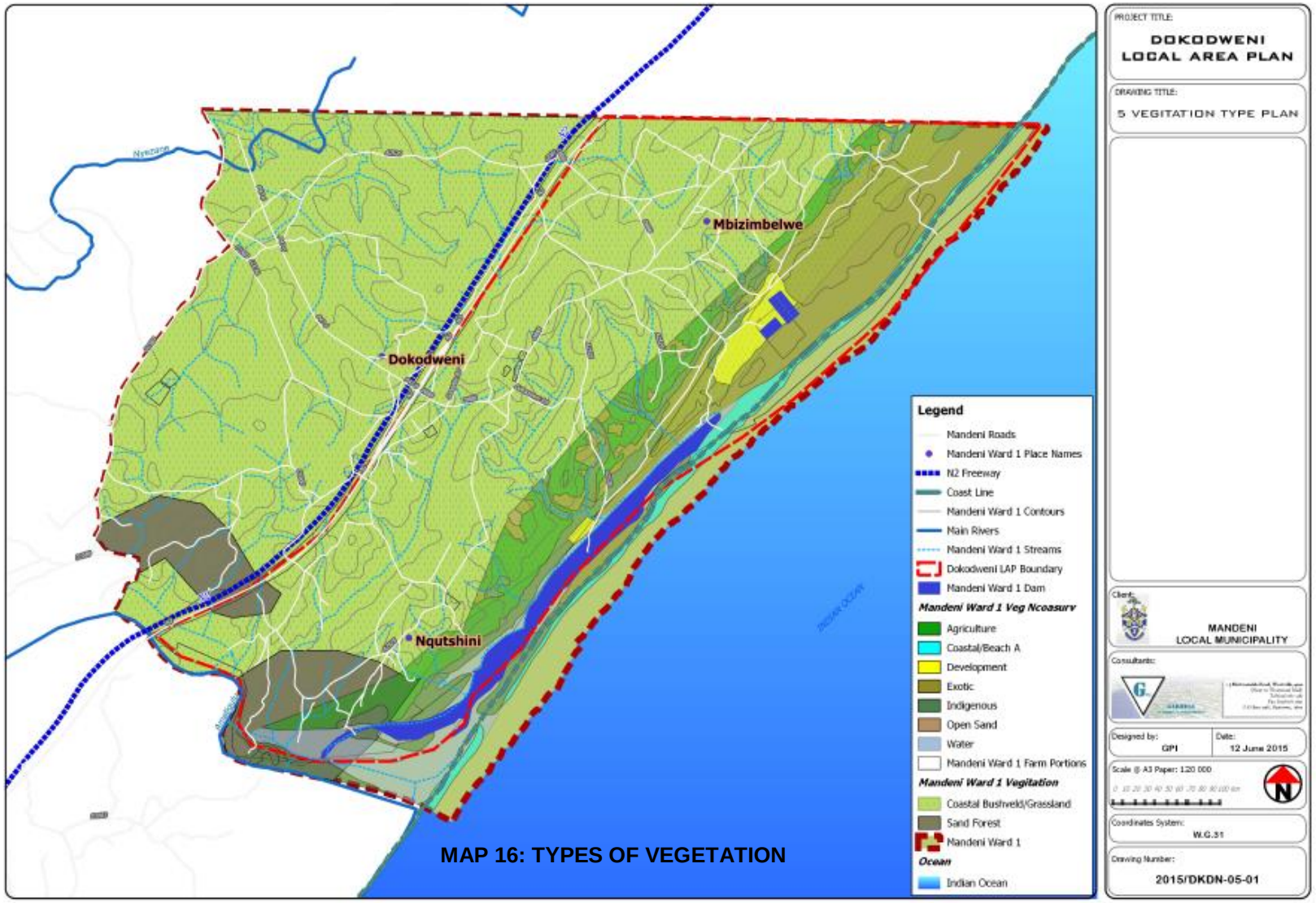
The majority of land within the study area is characterised by this type of vegetation. It occurs in all Izigodi. This vegetation type has a mean annual rainfall range of 820 mm to 1,423 mm. Rain falls is mainly in summer. Dry periods of several weeks can be expected to occur and this has an effect on the yield of sugarcane. Highly dissected undulating coastal plains which presumably used to be covered to a great extent with various types of subtropical coastal forest. Some primary grassland dominated by *Themeda triandra* still occurs in hilly, high-rainfall areas where pressure from natural fire and grazing regimes prevailed. At present the KwaZulu – Natal Coastal Belt is affected by an intricate mosaic of very extensive sugarcane fields, timber plantations and coastal holiday resorts, with interspersed secondary *Aristida* grasslands, thickets and patches of coastal Thornveld.

4.7.4.2. Sand Forest18

The main distribution of this forest is in Maputaland, where still reasonably extensive patches of this forest can be encountered. Special thicket communities, floristically very close to the Maputaland sand forest. At low altitudes between 20 and 160 m, with about half of the area between 100 and 120 m. Dense thickets of 5-6 m up to tall forests with the canopy reaching 15 m, with well-developed shrub layer and very poorly developed ground layer. The dominant trees are *Cleistanthus schlechteri, Dialium schlechteri* and emergent *Newtonia hildebrandtii* in Maputaland, whereas *Baphia massaiensis* subsp. *obovata, Cleistanthus schlechteri* and *Guibourtia conjugata* are most conspicuous in the tree layer in the Nwanbyia and Pumbe regions. The shrub layer is dominated by *Croton pseudopulchellus, Cola greenwayi, Pteleopsis myrtifolia, Psydrax locuples, Drypetes arguta* and the woody climber *Uvaria lucida.* The most conspicuous

[18] KwaZulu – Natal Vegetation Type Description Document for Vegetation Map 2011:

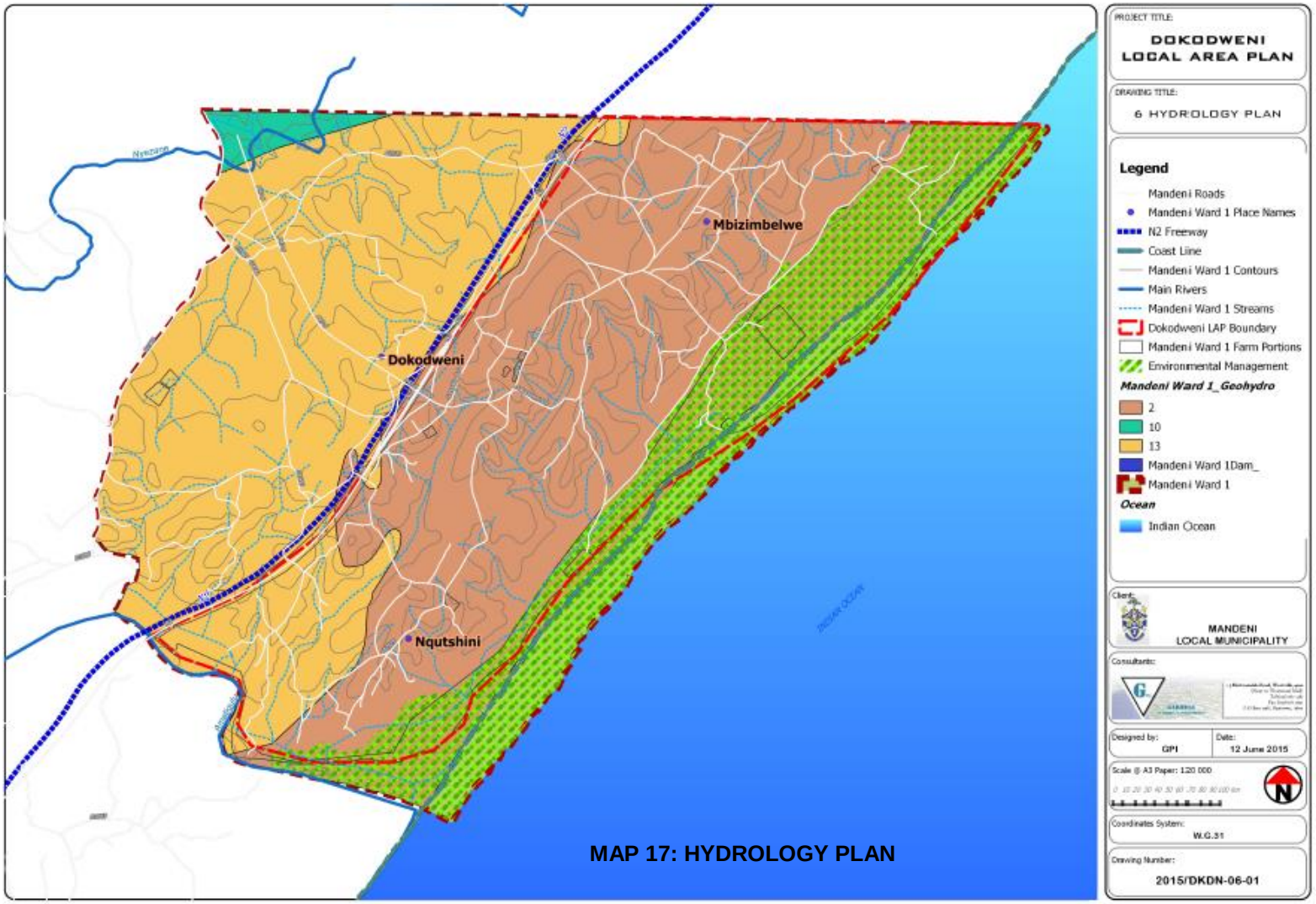
graminoid in the herb layer is Eragrostis moggii. Epiphytic orchids and lichens festoon the tall trees.



MAP 16: TYPES OF VEGETATION

4.7.4.3. Hydrology

There are various drainage lines which are in the form of streams that characterize the study area. Amatikulu River is one of the two rivers of Mandeni municipality and forms the south eastern boundary of the study area.

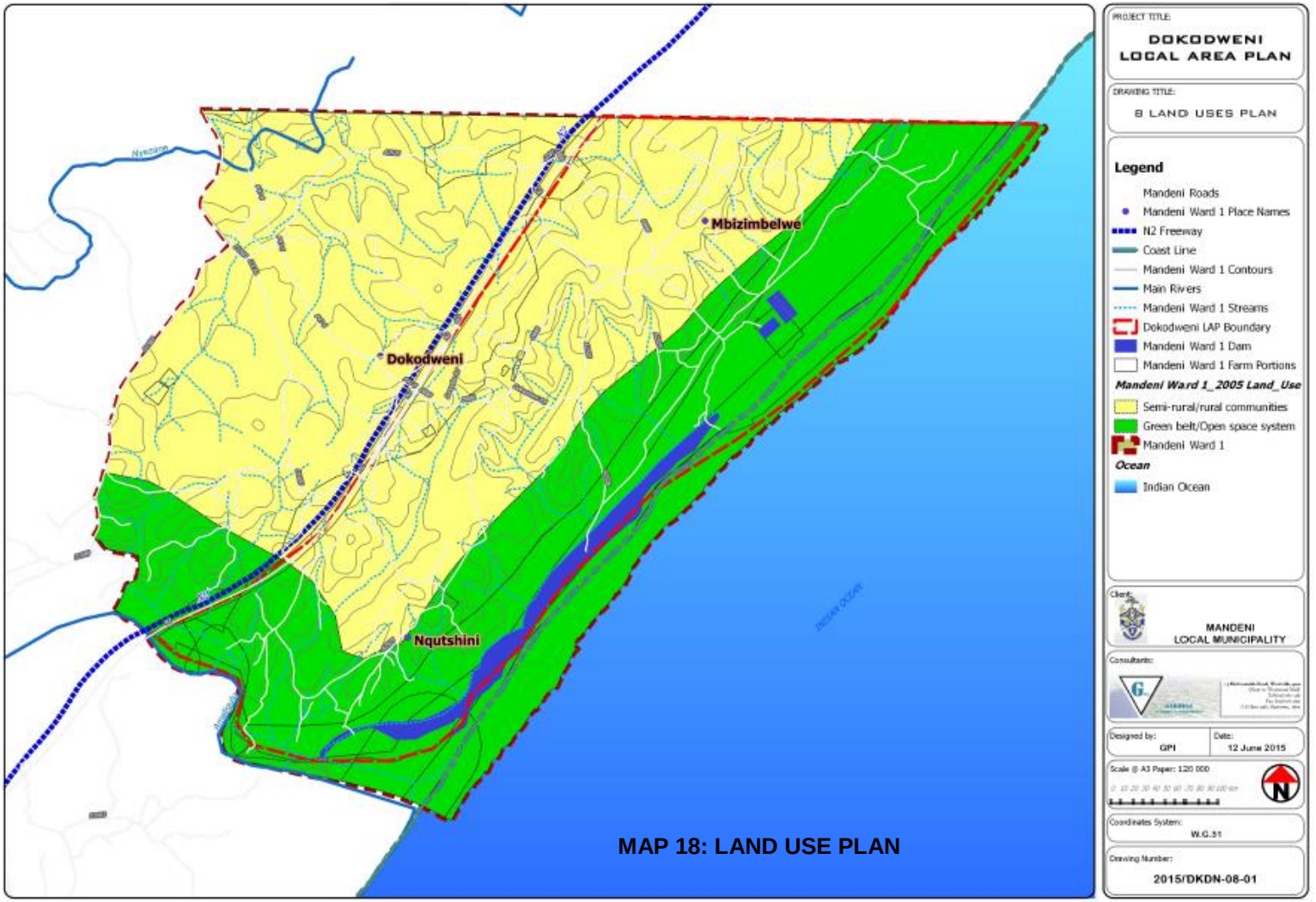


MAP 17: HYDROLOGY PLAN

4.7.5. Land Uses

Generally, land uses tend to follow the movement and settlement patterns. The study area is predominantly rural settlement with households engaging in subsistence farming. There are also households engaged in livestock farming but there is no designated grazing land. The onus is on the owner to monitor their cattle.

During site surveys, it was evident that the dominant land uses are sugarcane and forestry which occur in small pockets within settlements. These land uses are mostly visible along the main route D888 and access roads. There is also evidence of deforestation that has taken place presumably



MAP 18: LAND USE PLAN

making space for commercial sugarcane. Natural vegetation occurs within the Green belt/open space system which is mainly along the beach. The Amatikulu Estuary, captured as a dam, also forms part of a major land use within the study area.

4.7.6. Biodiversity Priority Areas

Biodiversity is the term given to the diversity of plants and animals (living things) that occur in a given area. These plants and animals interact with the physical elements of the area such as the soils, water, and atmospheric conditions (non-living things) in such a manner that the various living and non-living components of that area maintain a suitable living environment for all the components of that environment. The resulting suitable environment provides various benefits for people and communities that live in the area.

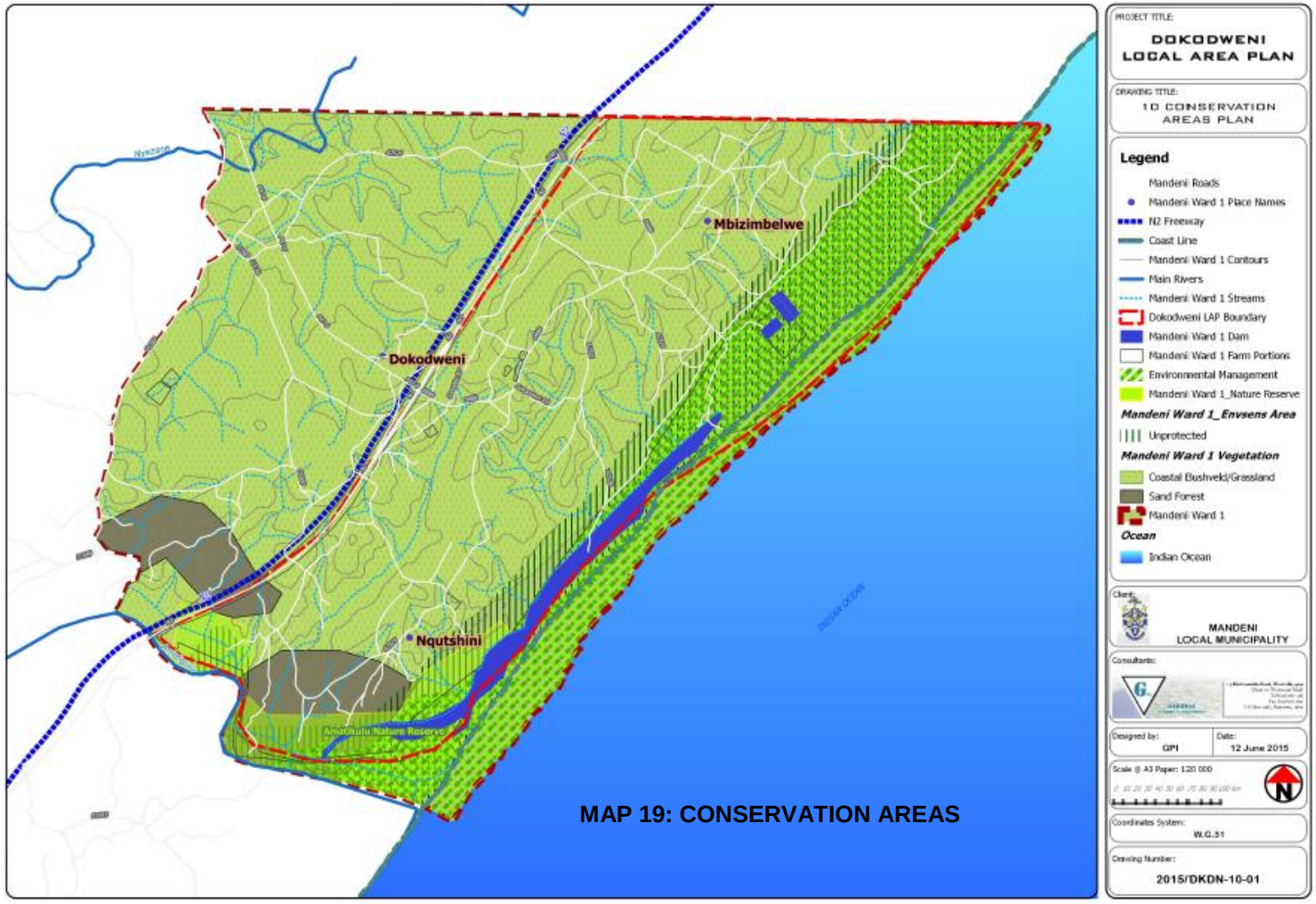
In order to obtain the benefits derived from a given environment on a sustainable basis, there is the need to have a fair understanding of the biodiversity characteristics of our environment and how these must be managed. If the resources of the environment are not used judiciously, the ecological balance upon which the continual flow of resources depends will be disturbed. The resultant effect will be a decline in availability of resources, and a possible loss of productivity in that environment.

South Africa has ratified the International Convention on Biological Diversity, which commits the country, including KwaZulu-Natal, to develop and implement a strategy for the conservation, sustainable use and equitable sharing of the benefits of biodiversity. In the Province of KwaZulu Natal, Ezemvelo KZN Wildlife is the authority responsible for planning and management of biodiversity conservation. As a means of complying with the requirements of the Convention on Biological Diversity, KZN Wildlife has developed management tools to manage the biodiversity resources in the province.

The Ezemvelo KZN Wildlife developed a conservation plan (CPLAN) for the province which indicates biodiversity priority areas which are ranked according to their priority as 1, 2 or 3; where a biodiversity priority 1 area is considered irreplaceable anywhere else in the province should it be lost or degraded. In Dokodweni, there are few areas which can be considered as priority 1.

4.7.7. Conservation Areas

Conservation areas are those which are environmentally sensitive areas. These areas include drainage systems, wetlands, degraded areas, endangered species and natural forests. There are some instances where settlements have already encroached on such sensitive areas. In Dokodweni study area, the coastal strip is considered as an Environmental Management area. This includes the area with natural vegetation, estuary and nature reserve. A buffer, termed unprotected area separates the environmental management area with the settlements. The Mandeni CMP has identified interventions and put in place guidelines for the management of coastal resources.



MAP 19: CONSERVATION AREAS

4.7.8. Climate

The iLembe District has a moderate climate with a mean annual temperature ranging from 21°C at the coast to 16°C inland at higher altitudes, where the winter annual minimum temperatures approaches 12°C (Africa Wide Consulting, 2012). The District falls within a summer rainfall area and has a mean annual precipitation (MAP) ranging from 650mm to 1200mm, generally declining from coastal areas to inland areas (Africa Wide Consulting, 2012) (Figure 2-1) (South African Atlas of Agrohydrology and Climatology, 2001). The rainfall which falls mainly in the summer months is relatively reliable and varies from 400mm to over 1000mm.

Notwithstanding the media publicity around the changing climate, more recently impacting heavily on the UThukela River, the municipality has acknowledged the need to develop a Municipal Climate Change Response Strategy in order to deal with the impacts of the climate change with its jurisdiction.

The study will also cater for issues of vulnerability to impacts of climate change (vulnerability assessment) and to understand the main sources of greenhouse gases (greenhouse gas inventory). The MEC of COGTA has recently introduced water restrictions amidst the water crisis. Some areas within the Ilembe District Municipality, especially in KwaDukuza LM, have also been affected. Therefore it is critical for the LAP to develop mitigative actions should this trend reach areas of Mandeni.

4.7.9. Dokodweni Beach

In simpler terms a beach is a landform along the coast of an ocean or sea. It can be further defined as a narrow, usually gently sloping strip of land that borders a body of water, such as an ocean. All beaches border a body of water, but beaches can have many different characteristics depending on where they are in the world.

Although beaches seem like a place for fun for humans, they are also very important ecosystems. Beaches have lush vegetation, such as mangroves and palm trees that grow in moist, nutrient-rich soil and sand. Beaches are essential habitats to our ecosystem and have critical biodiversity. Certain animals and plants, such as sea gulls, crabs, clams, and other shellfish, only live on the coast. These animals are in danger of extinction if threats to beaches continue at the current pace.

Currently in Mandeni there is no beach for swimming. Initially it was thought the Tugela Mouth will be able to provide this service, but after an investigation, during the development the Coastal Management Programme, it became clear that the only possible alternative is the Dokodweni Beach, especially further north of the beach. Should this beach be developed to its fullest, this will assist in alleviating pressure on the KwaDukuza Beaches such as Blythedale and Ballito. It will also be able to accommodate all people within the Mandeni Municipality and also the people as far as Melmoth, Nkandla, Eshowe and Mthunzini. KwaDukuza Municipality is currently faced with

serious challenges due to the influx of people from as far as Maphumulo, Tongaat and Melmoth. It is an opportune time for the Dokodweni Beach to be developed such that it assist the KwaDukuza Municipality in dealing with the influx of the people into beach especially during the festive seasons.

The Environmental Management Framework has also identified the challenges presented by the ritual practices undertaken within the iLembe Beaches. Such practices has been noted within the Dokodweni beach as well. It will be critical for the Municipality to design a special area for these practices rather than to occur haphazardly, as what is currently happening in the area.

4.7.10. Hydrology

The Dokodweni Beach is fed by the iNyoni and Amatigulu Rivers which converge at the coast to form one estuary mouth. According to the iLembe Environmental Management Framework, the Nyoni River is of special environmental concern given its unique path of flowing parallel to the coastline for approximately 8km before converging with the AmaTigulu River to form an estuary. This joined system is classified as a permanently open estuary despite the frequent occurrence of closed conditions.

A number of wetlands have been identified within the study area which are largely related to the river systems occurring in the area. Studies, recently undertaken within the area, show that even delineated wetlands are found to exceed the delineated boundaries where commercial crops are taken off the land and natural vegetative cover is restored. It critical again to map these features for the development of a plan that will consider the rehabilitation of these features.

4.7.11. Estuaries and the Development of the Estuarine Management Plan

It is not easy to determine the boundaries of an estuary. An estuary may be defined as that portion of a river system which has, or can from time to time, have contact with the sea. **Estuaries** is another coastal resource that is highlighted by the Integrated Coastal Management Act as critical resource requiring management.

Estuaries are extremely variable environments. Typically they experience a daily rise and fall of the tides. The marine and fresh waters, with different temperatures, salinity and density, flow over one another and mix, to a certain extent. Estuaries act as nutrient traps and can support plankton and a unique community of plants and animals that are able to cope with the variable salinity and temperatures. Special salt marsh plants and reed beds line estuaries and mud-prawns and bivalves thrive in the mud banks. Many fishes use estuaries as nursery grounds. Wading birds gather in huge flocks to feed in the South African wetlands.

One of the critical estuary located within the Dokodweni beach is the Nyoni / Amatigulu Estuary. In order to comply with the ICMA an Estuarine Management Plan should be developed by the relevant authority within whose jurisdiction falls. Section 5 of the National Estuarine Management Protocol provides details on the

management authorities responsible for the development of Estuarine Management Plan. In a case of the Nyoni / Amatigulu, the estuary falls within the protected area and according to Section 5.5 of the Protocol the responsible authority is Ezemvelo KZN Wildlife. However, the Municipality needs to determine the boundaries of the Amatigulu Nature reserve to ascertain whether the responsible authority is solely Ezemvelo. This plan is a critical tool for the management of coastal resources of the Municipality, in addition to the Coastal Management Programme.

Although the Amatigulu / Nyoni Estuary does not appear in 21 estuaries recommended for proclamation but it is critical to note that the estuary do meet some of the criteria, as used during the assessment of the estuaries by the Ezemvelo KZN Wildlife, which is:

- The Estuary is in close proximity to an identified proposed MPA focal area;
- The Estuary is in close proximity to a Provincial growth development node

Furthermore, the iLembe Environmental Management Framework has identified areas of environmental sensitivity within the Amatigulu/Nyoni estuarine system and their associated floodplains, which are the Maputaland Coastal Grassland biome, which predominates north of the Thukela River, is also of primary conservation importance and sensitivity. This estuary has got a conservation value and therefore, requires management.

4.7.12. Waste Management

The Mandeni Municipality has recently completed the Integrated Waste Management Plan (IWMP) as required by section 11 of the NEM: Waste Management Act. The IWMP compels Municipality to initiate some waste recycling programme for the entire Municipality including the Dokodweni area. The IWMP has also alluded to the fact that waste management services are not provided throughout the jurisdiction of the Municipality. Therefore, it is critical for the Municipality extend waste services to areas that are currently not serviced and the Dokodweni area is one of such areas. The IDP for iLembe DM 2011/2012, has highlighted the need to consider waste recycling and waste management as part of its overall waste management strategy within the District.

As part of the Dokodweni Plan it is will be critical to promote recycling by identifying a transfer station site to encourage recycling. In addition, within the Dokodweni area, there are fishing activities taking place, although illegal but, it is critical for the plan to accommodate these activities by affording the fishermen a space where they can clean-up their catch.

4.7.13. Biological characteristics

The Convention on Biological Diversity defines biological diversity as the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part. This includes diversity within species, between species and of ecosystems.

South Africa is well endowed with marine biodiversity and is a signatory to the Convention on Biological Diversity. As such this country has an obligation to conserve and maintain plants and

animals, and to utilize marine resources wisely and sustainably along the coast and coastal waters. The iLembe District Municipality traverses five biomes namely, Grassland, Savanna, Indian Ocean Coastal Belt and Forest and Wetland biomes and contains 36 vegetation types.

Threatened ecosystems has been noted within the Dokodweni area. The Ezemvelo KZN Wildlife maps will be used to depict such areas.

4.7.14. Protected areas

Protecting important natural resources is critical for the South African Government as signatory to the Convention on Biological Diversity. In 2010, Parties to the Convention on Biological Diversity adopted the Strategic Plan for Biodiversity 2011–2020, a ten-year framework for action by all countries and stakeholders to safeguard biodiversity and the benefits it provides to people. Therefore, protected areas is important tool used to achieve the biodiversity objectives and protecting essential natural areas and ecosystems services for the benefit of all generations. The NEM: Protected Areas Act (Act No 57 of 2003) creates a legal framework and management system for all levels for the protected areas in South Africa.

Within the Mandeni Municipality, there are 3 reserves covering 2086.8ha (3.6% of municipality), which is a) Amatikulu Provincial Nature Reserve, 1 702.3 ha (2.92% of municipality), b) Harold Johnson Provincial Nature Reserve, 101.7 ha (0.17% of municipality) and c) Red Hill Provincial Nature Reserve, 282.8ha (0.49% of municipality). The Dokodweni Area has a potential also to contribute to the biodiversity objectives.

4.7.15. Challenges or Pressures to natural Resources

Mandeni and the Dokodweni area, to be more specific, is characterised by the high level of poverty and unemployment. The current living standards compels local inhabitants to rely more on the natural resources for their daily survival. Furthermore, the Municipality is lagging behind in terms of the provision of services such as housing, and then the necessary infrastructure like water and sanitation required to support the housing. In most cases, resulting in more transformation of the natural areas which are providing valuable free ecosystem goods and services.

There is also a high level of reliance on livestock farming within the Dokodweni area, which again is dependent on the same resources that needed to be protected for the benefit of current and future generations. Commercial sugarcane cultivation and forest also add impacts and pressures on the surrounding catchments, which associated with high levels of siltation of estuarine environments, reduced water quality and degradation of wetland areas. While these pressure do not originate in coastal areas, the interconnected nature of these ecosystems means that the impacts are felt in coastal areas.

The presence of the alien invasive species specifically in relation to protected areas, tribal areas, and undeveloped land parcels and as a result of poor farm practices is also another pressure to biodiversity and coastal resources' management. Evident of alien species is can be noticed even within the Dokodweni Area. In light of the aforementioned, pressures to the coastal natural resources within the Dokodweni can be summarised as follows:

a) Fragmentation and loss of biodiversity due to provision of necessary services to local inhabitant
b) High modification of endemic and near endemic vegetation types
c) Infestation of alien plants
d) Modification of riparian vegetation
e) Severe erosion and land degradation due to the transformation of land

4.7.16. Synopsis of Environmental Analysis

- Topography is fairly low laying and even landscapes with the occasional undulating range which will not be detrimental to the study area;
- The underlying geology is predominantly tillite with sandstone, mudstone, shale intruded by dolerite along with North Natal Coast.
- There are two vegetation types in the study area namely KwaZulu Natal Coastal Belt and Sand Forest. Further work is required to examine the ecological value of the vegetation areas and how this area should be best managed in the development process;
- The study area is characterised by drainage lines which are in the form of streams. The Amatikulu River, which is one of the two rivers in the municipality, forms the boundary of the study area.
- The study area is predominantly rural settlement with households engaging in subsistence farming. The rest is green belt or open space system.
- In terms of Biodiversity, a couple of patches within the study area can be regarded as Priority Area 1. Therefore any proposed development in this area needs to be done with intensive consultation with key conservationists such as KZN Wildlife and other key stakeholders so as to develop value oriented programmes such as tourism for the benefit of the people.
- There appears to be a significant portion of vegetation of conservation significant in the area and therefore a more careful assessment will be required in the planning process to ensure that these sensitive areas are properly integrated in the development planning process.
- The spatial framework should acknowledge the weaknesses of the area and enhance the strengths of the area through conservation of the last existing natural landscapes;
- It is recommended that rehabilitation of natural assets would enhance the area and create jobs.

4.8. SWOT Analysis

SPECIFIC DESCRIPTION	STRENGTH	WEAKNESS	OPPORTUNITY	THREAT
INFRASTRUCTURE				
Roads	▪ The study area is strategically located along the N2 ▪ D888 is the main route in the study area and extends from the P46-7. This is a transport route which connects the study area with Mandeni CBD and towns such as Gingindlovu and Eshowe.	Access roads to Izigodi are in a poor state.	Settlement patterns tend to follow the road network which would make it cost effective to deliver services.	Poor access roads means settlements located in remote areas will not be able to receive basic services.
Water	There are three reservoirs within the study area. The District also provides a Water truck every month.	High levels of service for piped water are very limited.	There are various sites that have been identified for Bulk Water Projects. In Ward 1, the Macambini Sub-Regional Water Supply has been earmarked.	Lack of access to water means communities rely on alternative untreated water sources. These sources are vulnerable to contamination.
Sanitation	Majority of the population is serviced within RDP standard of sanitation services.	Water borne sewerage is limited.	Only a few people still use the bucket system. There are various sanitation projects which have been earmarked.	Majority of households use VIP latrines and other insanitary types of toilets which are prone to contamination of water sources.
Electricity	Provision of electricity for lighting has increased.	There is a gap in terms of the demand and supply of electricity.	The District Municipality considering renewable sources of energy. Eskom has also built new substations which pave the	There are still a few households not served with electricity and are still using traditional ways such as wood.

SPECIFIC DESCRIPTION	STRENGTH	WEAKNESS	OPPORTUNITY	THREAT
			way for Universal access of electricity.	
HUMAN SETTLEMENTS				
Formal dwellings	The study area has maintained its rural character in terms of housing typologies	High backlog of formal dwelling where the majority of people still living in traditional dwellings.	The Housing Sector Plan is currently under review. This will assist in the identification of housing projects within Ward 1.	Some settlements are located on harsh topographical conditions and environmental sensitive areas which raises safety concerns.
SOCIAL FACILITIES				
Community Facilities	There is a fair number of social facilities within the study area	✢ Poor road conditions leads to inaccessibility of some of these facilities. ✢ The distance between facilities is far apart e.g. schools, clinics ✢ Some facilities need upgrading and maintenance such as sportsfield, post boxes etc. ✢ Some critical facilities are unavailable e.g. SASSA, SAPS, Home Affairs etc.	Existing facilities are strategically located within each isigodi.	The unavailability of certain facilities means higher travelling cost for people.
LOCAL ECONOMY				
Agriculture	✢ The study area is strategically located along the N2 between Durban Metro and Richards Bay. ✢ Commercial sugarcane the most prevalent ✢ Simamisa model ensures that local	✢ Poor access roads ✢ Low yields; ✢ Lack of training and loss of traditional knowledge ✢ Land degradation ✢ Limited formal land ownership ✢ Organizing successful agricultural activities	✢ There is enough land to produce high value crop ✢ Land suitable for different types of sub-tropical fruits such as Oranges, Bananas, Mangos, Guavas, Avocados, Paw-paws, Nuts, Granadilla ✢ Available water resources ✢ Skills from the agriculture department	✢ Lack of comprehensive market and investment strategy ✢ Climate change

SPECIFIC DESCRIPTION	STRENGTH	WEAKNESS	OPPORTUNITY	THREAT
	communities have a market in terms of their produce. Agriculture knowledge and expertise from sugar cane farming Availability of labour Departmental and Municipal support Available water resources.	Lack of linkages among activities Lack of Funding Market access Sugarcane the only dominant sub-sector with other activities limited.		
Manufacturing	Manufacturing is the secondary sector of the study area. The Amatikulu Hatchery is an existing facility which deals with manufacturing of dog chews.	of the location remain relevant; Access to semi-skilled labour; Weak business-to-business networking;	Renovation and upgrading of the Amatikulu Facility to produce fisheries. Organizing successful agricultural co-operatives; Market access; Provision of storage facilities	Lack of funding Impact of HIV/AIDS;
Tourism	Strategic location development Rich cultural and natural Heritage Natural beautiful with indigenous forest and beaches	Weak tourism awareness campaigns Poor infrastructure (access roads, electricity, water) Lack of capital support to local entrepreneurs Poor integration between enterprises Lack of skills to tourism	Skill in arts & crafts Enough sites for new accommodation Transport for visitors More new natural attraction sites Amatikulu nature reserve Link to king Shaka Route King Shaka Airport	Crime HIV AND AIDS Underdeveloped infrastructure

SPECIFIC DESCRIPTION	STRENGTH	WEAKNESS	OPPORTUNITY	THREAT
		• Poor communication – network in some areas, information centres signage, site linkage		
Trade	• Land available for development	• Poor accessibility • Little buying power • Limited trading and business skills • Poor marketing skills • Lack of diversity in products • Existing retail shops scattered •	• Upgrading of access road to facilitate efficient trade • Production of goods & services locally • Co-operatives concept • Support & partnerships with local municipality •	• Crime • Fronting • HIV / Aids •
ENVIRONMENT				
	• The coastal belt and areas along main drainage features are generally in a relatively good condition.	• Loss of biodiversity • Soil Erosion • Spread of invasive alien species	• The availability of the Costal Management Plan.	• Settlements encroaching on protected areas

5. DEVELOPMENT PRINCIPLES

5.1. Broad Planning Approaches

The following is a short overview of underlying principles and approaches expected to guide the execution of this project.

INTEGRATED DEVELOPMENT is aimed at creating development which is integrated in terms of various scales of planning, e.g. local, district, regional, integrating the various sectors of development, i.e. physical/spatial, social, economic, environmental etc, and integrating the various development components, e.g. facilities, movement, agriculture, residential etc.

UNIQUE CHARACTER, acknowledging and building on the existing uniqueness of the area and its community and reinforcing existing qualities, contributing to identity and variety, including the identification of unique investments

ENSURING ACCESSIBILITY should assist in promoting a settlement where the road layout and the location of facilities are concerned with matching the circulation needs of end-user communities and ensuring that levels of access are maximized for the majority of people.

With regards to **AFFORDABILITY** the socio-economic conditions of beneficiaries need to inform the operational plan of infrastructure.

Good **ROAD NETWORKS AND CENTRALITY** on the other hand are important influences in the provision of services and the location of facilities for wider benefit.

NODES and areas attracting larger human thresholds are further crucial influences for locating social services, residential accommodation and infrastructure. Furthermore the use of central areas and nodes can facilitate the **INTEGRATION** of functionally diverse settlements.

Appropriate systems in the **OPERATION AND MANAGEMENT** of facilities should complement capital investment into physical structures.

Associated with accessibility and location is the **HIERARCHY** of development.

- Higher order facilities should be located in places in which they can easily benefit a collection of settlements whereas
- Lower order facilities should allow for location within shorter and easy reach.

With regards to **FUNCTIONALITY, MULTI USE FACILITIES** (especially at higher level / order) can play a major role in integrating functions and ensuring optimal use.

SUSTAINABLE DEVELOPMENT approach would ensure that the envisaged development is sustainable in terms of environmental, social, economic and institutional.

MIXED USE development provides an opportunity to integrate low impact, income generating activities with residential settlement.

5.2. Spatial Planning Principles

Spatial Planning principles are extracted from SPLUMA which came into on 1 July 2015 and is currently operational. The following table highlights the spatial principles as described in Section 7 of SPLUMA:

PRINCIPLE	IMPLICATION
Spatial Justice	▪ 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 should 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 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 must include 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 must include provisions that accommodate ○ access to secure tenure and the incremental upgrading of informal areas; and
	▪ a Municipal Planning Tribunal considering an application before it, may not be impeded or restricted in the exercise of its discretion solely on the ground that the value of land or property is affected by the outcome of the application;
Spatial Sustainability	▪ promote land development that is within the fiscal, institutional and administrative means of the Republic; ▪ ensure that spatial consideration is given to the protection of the prime and unique agricultural land; ▪ uphold consistency of land use measures in accordance with environmental management instruments ▪ 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; ▪ result in communities that are viable;
Spatial Efficiency	▪ land development optimises the use of existing resources and infrastructure;

	↓ decision-making procedures are designed to minimize negative financial, social, economic or environmental impacts; and ↓ development application procedures are efficient and streamlined and timeframes are adhered to by all parties;
Spatial Resilience	↓ flexibility in spatial plans, policies and land use management systems is accommodated to ensure sustainable livelihoods in communities most likely to suffer the impacts of economic and environmental shocks;
Good Administration	↓ 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; ↓ All government department must provide sector input and comply with any other prescribed requirements· during the preparation or amendment of Spatial Development Frameworks; ↓ 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.[19]

TABLE 28: SPLUMA PRINCIPLES

5.3. Economic Development Principles

The following are some of the economic principles influencing the vision, goals and strategies:

Integrated Approach*:* this approach is important as it implies that the interrelationships between economic activities and other development dimensions such as the social, demographic aspects etc. have to be carefully considered.

Agglomeration and clustering of like activities: This principle refers to the concentration of activities in a geographic location strategically positioned to create backward and forward linkages within and outside Dokodweni study area. Clustering activities refers to strategically placing compatible uses near each other to create forward and backward linkages which complement each other thus creating a value added chain. This works best for industry specific businesses and activities. This is used to stimulate the local business environment.

[19] SPLUMA 2013

Linkages: This principle refers to the flow of goods and services with neighbouring economies as leakages and injections. Leakages refer to the net out flow of buying power and injections refer to the net inflow of buying power. Industries which have comparative advantages in terms of potential employment creation, and inter sectoral business linkages need to be identified and exploited to achieve growth and development of the local economy.

Promoting SMME's and Local Businesses: This principle identifies the need to involve and uplift the SMME sector through enhancing the capacity of local entrepreneurs by establishing support measures and incentives to promote participation in order to broaden the economic base of the local economy. It also refers to promotion of existing business, start-ups or external companies coming into a location.

Broaden Economic Base: This principle can be achieved through integration of diverse economic initiatives and incorporates issues such as, introducing new activities which are not currently operational in the area and development of SMME's to have a broader representation base on the size of establishments.

Location of favourable locational factors and improving the investment climate: This refers to productivity levels which are the key determinants of rates of returns to investment, which in turn determine the rate of growth of an economy. Therefore this principle refers to creating an environment within which businesses can operate and thrive in. It includes reducing the establishment and operating costs of businesses, improving infrastructure and facilitating the provision of trained labour. Other factors include increasing of business sophistication through local supplier quantity and quality as well as access to technology.

Enabling Environment: It is seen as imperative to a local area that an enabling environment is created to ensure optimal economic growth and to sustain investment into the area. Examples of factors relating to the creation of an enabling environment include, infrastructure and services, transportation network, human resources development, skills development etc.

Public Private Partnership: This principle has to be taken into consideration in order to create joint business venture opportunities

5.4. Transportation and Traffic Principles

5.4.1. Mobility and access roads

Mobility is the ease with which traffic can move at relatively high speeds with the minimum of interruptions or delay. Access provides entry to the road network through driveways, intersections or interchanges.

Any access, intersection, or associated activity, even if properly designed, will affect the mobility requirement because the act of turning into or out of a driveway or intersection is a low speed manoeuvre and crossing a road requires interruption or breaks in

traffic flow. If not managed, unregulated access results in unsafe travel conditions for both the users of the access and passing traffic.

Mobility roads therefore are higher speed through routes on which movement is dominant and access and pedestrian crossings are limited to defined and clearly demarcated positions at widely spaced intervals. Mobility roads are the “vehicle-priority” routes in a road network (Guidelines for Human Settlement [DOH 2000] uses the term “vehicle only roads”).

Public transport stops can be provided as follows on the following classes of roads (the requirements apply to both rural and urban roads):

- No stops may be provided on Class 1 roads;
- Stops on Class 2 roads are restricted to lay-byes downstream of intersections;
- Stops on Class 3 roads are restricted to intersections, preferably downstream, and should be in lay-byes;
- There is no restriction on public transport stops on Class 4 and 5 streets and lay-byes are not required.

Public transport stops should be located within an acceptable walking distance from generators, attractors and modal transfer facilities. Walking distances to the stops should preferably be within 400 m but not more than 800 m. Public transport stops must be served by an adequate network of footways.

On-street public transport stops should be located as near as possible to intersections and major accesses. At traffic signal controlled intersections, the stops can be located either on the approach or on the far side of the intersection, but preference should be given to the far side. When provided on approaches, the stops should be located sufficiently far back to prevent the intersection or access being obstructed by the stop.

Whereas roads having a local access function are classified as Class 4 - district collector roads and Class 5 - access roads.[20] The following diagram illustrates the classification of functional roads:

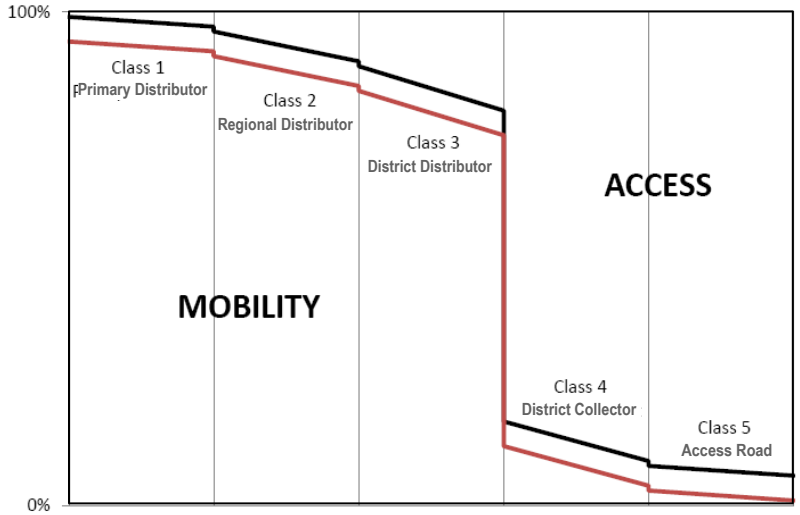


TABLE 29: MOBILITY ROUTES

[20] TRH26

5.4.2. Traffic control at intersections

Where adequate space is available preference should be given to the use of roundabouts at the intersection of two Class 4 - district collector roads, provided there is a reasonable balance in the traffic flows at all times of the day. Roundabouts are not suited to roads with un-balanced traffic flows, especially on high mobility roads e.g. Class 2 and 3 roads, and where there are heavy pedestrian flows.

5.5. Social Facilities Guidelines

The elements that determine where land should be reserved for particular uses and the type of facilities that should be allocated are informed by location, access and threshold population. This is particularly true of community-type facilities – including those provided by the public sector and those provided for by private developers. The CSIR guidelines (2012) were used to guide the process of identifying facilities that are needed within the study area. Notwithstanding, the study area is characterized by difficult (often steep) topography and poor access. These factors should be considered carefully in the provision of services and infrastructure. Rural households are scattered at some distance from each other and topographical features (hills and steeply incised river valleys) contribute to limited accessibility. This means that fewer households will be able to obtain access to social facilities located at points determined by these standards.

In the same way that the development principles and approaches were considered in shaping the future development, the following development concepts are critical

- Multi-purpose facilities promote integration of uses and encourage optimal utilization of facilities and must therefore be considered in the design of higher order social infrastructure in particular.
- Development nodes and development corridors are important influences in locating higher order services and facilities especially where these are aimed at benefiting wider population thresholds. This can further enhance other development spin offs including economic opportunities.

6. AREA VISION

Developing a vision is essentially setting a long-term goal for the study area to which all stakeholders will be working towards achieving. It is a constant reminder to all stakeholders to work towards a common purpose thereby ensuring unity. The vision of the study area should encapsulate the overall vision of the municipality. Therefore the vision for the study area will be underpinned by the long-term vision of the IDP. The following subsections will elaborate.

6.1. Municipal vision

The long-term vision of the municipality was extracted from the IDP and reads as follows:

> "To be a reliable people-centred and sustainable economic hub by 2030"

6.2. Mission

In support of the vision the Mission of the Municipality reads as follows: - We will achieve our vision following a culture of:

- Continuously striving for better
- Excelling in all key processes of service delivery
- Continuously listening and responding to our communities and all stake holders
- Remaining financially astute

3.1. Core Values

In keeping with the principles of Batho Pele, the core values of achieving the above-mentioned Vision and Mission are as follows:

- Honesty
- Transparency
- Integrity
- Inclusiveness
- Commitment

6.3. Local Area Plan Vision

Based on this it is suggested that the above themes should underpin the vision of the study area as follows:

"Dokodweni will offer an authentic African Village Beach Experience and promote sustainable economic opportunities driven by a people-centred ethos"

6.4. Alignment of Vision with Goals, Objectives & Strategies

It is important that the proposed vision for the study area is aligned with goals/objectives and strategies. This will ensure that all issues raised in the previous phase are addressed whilst providing a framework for future development within the study area. This framework should also be aligned with the implementation plan which will indicate the proposed programmes/projects. The following diagram illustrates the proposed alignment process:

FIGURE 37: ALIGNMENT OF VISION, GOALS, OBJECTIVES & STRATEGIES

7. STRATEGIC FRAMEWORK

The following section is a culmination of the issues identified in the Status Quo through desktop analysis and consultations with the various role players. It should set the tone for goals/objectives of the Dokodweni area in response the LAP will identify appropriate strategies in achieving the overall vision, goals and objectives.

7.1.Goals/Objectives & Strategies

7.1.1. Goal 1: Investment in human capital.

This goal stems from the low education and skills base identified among the population of the study area. Therefore investment in human capital can ultimately lead to a higher level of skills which could then boosts productivity and

The skills level in the Dokodweni study area is relatively low. Therefore key interventions should focus on the provision and transfer of skills based on the demand for potential employment opportunities. A clear process should be established for identification of key areas for which the necessary skills are to be developed and for which there is a demand. Critical to that process is the performance across economic sectors.

Strategy 1: Enhancement of educational skill and provision of training

Involvement of the private sector to mentor potential employees. The current situation though is the lack of skills training facilities. Therefore it is important that such facilities are provided to complement any efforts towards improving the educational and skills level. The following are suggested:

- FET college

7.1.2. Goal 2: Identify and expand economic base Of Dokodweni study area

There are various economic opportunities which can be explored in the study area. In exploring these opportunities, attention needs to be given in the sectors identified.

Strategy 1 – Expansion of the agricultural sector

Agriculture in the Dokodweni study area is characterized by subsistence and commercial farming. Sugarcane farming is the most dominant. However there is land available for agricultural activities which have potential to produce different types of fruits and vegetables. The strategy focuses on expanding the agricultural sector with the aim of transforming subsistence farming into commercially based farming. Key interventions could include skills training and informal trading in a conducive environment, provision of access to markets and threshold is also key to urban agriculture. Identify support from government which could help enhance the agricultural sector. A potential project could be the development of a Vegetable market. Also, as suggested by the LED, the agricultural plan will assist in determining the appropriate guidelines to be undertaken for agricultural development. It will also identify opportunities (including new and innovative crops) that can be initiated.

Strategy 2 – Development of the manufacturing sector

The majority of the GVA in Mandeni is generated by this sector through industries such as Isithebe. In the case of the study area,

manufacturing can be seen as small-scale apart from the existing Amatikulu Hatchery which produces dog chews. Key interventions to promote this sector include identification of ancillary light industrial and manufacturing uses that could potentially develop in the area. Identification of potential manufacturing opportunities that could transpire through construction in the area, relating to the housing developments that take place. This could provide an opportunity for local people to gain skills to take advantage of these opportunities. The necessary skills training needed for the potential labour market needs to be identified. Also SMMEs need to be encouraged to manufacture their own products and be supported with finance and equipment so that they can also contribute to the local market.

Key programmes to include

- Revitalization of the Amatikulu Hatchery
- SMME development
- Establishment of FET college
- Skills training programmes

Strategy 3 – Identify and promote potential and/or existing tourism initiatives in Dokodweni study area

Whilst the municipal area is characterised by both cultural/ecotourism and natural heritage, the Dokodweni study area is well positioned and surrounded by some of the municipality's prominent tourist attraction features. This strategy seeks to exploit those existing tourism products for the benefit of study area and will ensure the linkage with existing programmes such as the King Shaka Route.

Key interventions include further investigation into this opportunity in order to determine the inherent possibilities that exist in order to grow this sector. Interventions such as marketing, identifying key areas for which tourism could take advantage of, key projects relating to enhancement and promotion of tourism in the Dokodweni study area such as a memorial site or a museum for example could be formulated according to the specific opportunities that exist. Other key projects that will have advantages to the tourism sector are, the erection of signage, possibly a craft hub and tourism route development.

Potential programme include:

- Linking to existing tourism route
- Development of an Arts and Craft Centre
- Development of an Interpretive Centre/Museum
- Training tour operators

Strategy 4 - Promotion of commercial/retail facilities:

Commercial and retail facilities within the study area are few and far between. The aim of this strategy would be to attract buying power into the economy and retain expenditure and circulate money within the area and not outside of it. Currently, people of Dokodweni, Nqutshini and Mbizimbelwe commute to areas such as Gingindlovu, Eshowe or Mandeni CBD for certain goods and services. This identifies the need to create opportunities, choice and options within the study area. Also, due to the low income earning population in Dokodweni study area, there is a need for the public transport sector to be established.

Key interventions include upgrading existing commercial and retail facilities and provision of extra facilities (such as a community centre for example which incorporates larger chain stores to hinder going out of the study area to purchase higher order goods) identified as a need where there is demand. Taxi and bus ranks need to be provided and upgraded with the necessary facilities needed such as ablution and sheltered areas for waiting. Another potential could be the development of a petrol filling station to cater for passers-by and also the local public transport.

Strategy 5 – Enhance the informal sector

The informal sector plays a major role in the local economy. However it should be borne in mind that the informal economy is characterised by people with low educational skills. Therefore key interventions should include provisions of facilities to host informal business support services information and training sectors, more developed market areas for informal traders to congregate therefore promoting local markets. Other interventions as options are training and advice.

Key programmes to include:

- Identification of appropriate location of trading stalls especially in areas of higher thresholds like centres

7.1.3. Goal 3: Provision of basic services and infrastructure development

Strategy 1: Road construction, upgrade and maintenance

The majority of roads within the study area are in poor condition and need upgrading. It is critical that important access routes are prioritised and linked with the Road Maintenance Plan which is currently being prepared by the municipality. In this case the tourism route may be upgraded as well as areas important to attract in business investment.

Key programmes to include

- New roads
- Road upgrade
- Road maintenance

Strategy 2: Efficient movement and public transport system

The current movement system in the study area represents a conflict between vehicles and pedestrians. The Status Quo revealed that pedestrians often find themselves contesting space on the road with vehicles. Key interventions include construction of pavements for pedestrians.

In terms of public transport, it is important to create linkages through transportation network which will integrate areas which are inaccessible and spatially divided. Transport Nodes are key input to economic development as they enhance accessibility and mobilisation of people and goods. Dokodweni study area being predominantly rural and with low income earning population provides an opportunity for the promotion of public transport through provision of bus and taxi terminal with the necessary facilities such as ablution and sheltered areas for waiting. Key interventions include key programmes such as the production and upgrades of taxi and bus ranks where there is demand, preferably at key nodes. Another important issue identified which will spur related intervention is

communications infrastructure, as technology can increase the productivity of businesses

Strategy 3: Provision of water and sanitation services

The status quo indicated that provision of water and sanitation remains a challenge within the study area with many households relying on water sources which are prone to contamination. This strategy puts emphasis on these services being provided at a basic level. The level of service will depend on the intensity of the area. Due to the topography, higher level of services is not feasible on steep areas. Therefore areas which are highly accessible with high to medium densities could receive a higher level of service as opposed to remote areas.

7.1.4. Goal 4: Ensuring proper land management

It is accepted that the land management function will continue to be performed by the traditional institutions. However it important to equip traditional authorities with the necessary skills and appropriate tools so as to deal with rapid densification in the near future.

Strategy 1: training institutions and structures involved in land management

It is suggested that training programmes be developed to ensure that the traditional authorities are kept abreast of land management techniques. The training should include land restrictions e.g. servitudes, road reserves, environmental zones etc.

Possible programmes will include:

- Training ward committees o
- Training and education on environmental issues
- Training and education on road safety

Strategy 2 Mapping of the traditional households

Because traditional households do not have proper subdivision, a process should be embarked upon to GPS all existing households so that they are linked to GIS. Future allocations should henceforth be linked to GPS coordinates so that there is ongoing update of the GIS system.

Possible programmes will include:

- GIS capture and of households
- Appropriate land management database

Strategy 3 Training of area monitors

The community should be encouraged to play a meaningful role in land management. Land monitors should be appointed for each area on voluntary basis to:

- Monitor and Report environmental programmes issues, including reporting environmental violations, illegal allocations (not sanctioned by the traditional leaders etc.)
- Assist in areas of road crossing in areas closer to schools

Strategy 4: Provide a spatial framework that encourages orderly development in line with the spatial intensities.

This should result in the identification of areas for:

- housing development
- Agricultural development

- Environmental protection and development
- Future roads
- Etc.

Strategy 5: Roll out equipment to selected izinduna to manage land allocations

Once proposed training has been undertaken the following equipment should be provided:

- GPS equipment
- Area map with structures already linked to GPS

7.1.5. Goal 5: Promotion of sustainable development and the sustainable use of coastal resources.

Overview

The development within the Dokodweni area needs to be approached with caution. This suggests that it is critical to serious consider environmental sensitivity of the area prior to allocating sites for a specific land use. There is a need to improve on the coastal access and accessibility to coastal resources, and to link the coast with major transport routes in the hinterland. Other critical plans to the efforts of coastal resources management include, the development of the Nyoni / Estuarine Management Plan, the Coastal Planning Scheme, and the development of the Municipal bylaw. This is crucial to providing appropriate amenity to areas earmarked for camp sites, picnic sites, beach access and parking areas for fishermen along the Dokodweni coast for the benefit of both tourists and the local community. There is huge potential for recycling in the Dokodweni area. Therefore, structures that encourage recycling should be introduced by the Municipality. This will assist the Municipality to meet the objectives of the Waste Management Act and recently developed Integrated Waste Management Plan.

The threats described above require intervention at a strategic level and the following are key strategic issues for the coastal environment within the Dokodweni area:

Strategy 1: Development of the Coastal Setback line
Strategy 2: Development of the Coastal Municipal Scheme:

- Establish erosion line and ensure incorporation of 10m contour into all coastal planning applications
- Soft coastal systems should be addressed with “soft engineering” solutions. The optimum buffer is a natural dune cordon. Soft-engineered, artificial vegetated dunes are also deemed appropriate. “Hard” engineering should only be employed as a last resort as they cause erosion

Strategy 3: Coastal access and accessibility:

- Identification and management of coastal access land; and
- Improve the transport routes into the Dokodweni
- Find a site for ritual practises
- Identify site for livestock grazing

Strategy 4: Management and conservation of the remaining natural areas particularly coastal forests, dunes, wetlands and grasslands in the face of the continued demand for tourism and housing development:

- Restoration / rehabilitation of coastal habitat types in line with recognised biodiversity targets;
- Possible expansion of the Marine Protected Area (MPA) network; and

- Sustained and continued management action in respect to invasive alien species control.

Strategy 5: Upgrade and maintenance of sanitation and transportation infrastructure.

- Investigate alternative uses for sugar cane; and
- Consider desalination as a possible alternative.

Strategy 6: Sustainable utilisation of coastal resources:

- Prioritise wetland rehabilitation and management;
- Monitor and enforce sand winning activities;
- Facilitate the recovery of overexploited resources; and
- Control the use of resources – sustainable harvesting of natural products.

Strategy 7: Hazard and risk mitigation as well as adaptation strategies which address coastal vulnerability and strengthen coastal resilience:

- Rehabilitate natural habitats that play a critical role in adaptation – dunes, estuaries, mangroves, salt marches etc.;
- Recreate and maintain damaged dune systems; and
- Promote soft defence in hazard prone areas where retreat is not possible.

Strategy 8: Recreational opportunities and constraints:

- Identify additional swimming beaches and recreational nodes along the coastline
- Investigate alternate coastal recreation beyond swimming beaches; and
- Promotion of non-consumptive resource use and recreation activities.

Strategy 9: Prevention, minimisation and control of coastal pollution

- Introduction of the Blue Flag programme

Strategy 10: Dealing with waste management

- Introduction of waste recycling

Strategy 11: Dealing with farming

- Poor farming practices and land usages has caused severe erosion and land degradation
- Overgrazing and overstocking especially in traditional areas

Strategy 12: Human capacity development:

- Empower key stakeholders for improved cross-sectoral integration, management efficiency and alignment of sustainability objectives;
- Invest in knowledge base; and
- Strengthen adaptive management capacity.

Strategy 13: Responding to impacts of Climate Change

- Develop a Climate Change Response Strategy
- Develop a Municipal Disaster Management Plan
- Beach Nourishment
- Artificial Sand Dunes and Dune Rehabilitation
- Seawalls
- Flood Hazard Mapping
- Land Claim
- Wetland Restoration
- Develop an alien invasive clearance plan

Strategy 14: Facilitate appropriate coast dependant activities and developments.

8. DESIGN ELEMENTS

There are different design elements and ideas that could utilised in achieving the aforementioned vision, goals and objectives. Notwithstanding, the main focus of the designs would be the development of the beach. However, in developing the beach different aspects would need to be examined for the whole study area to see what works where. The following would be considered when suggesting appropriate designs and will be discussed briefly:

- Movement
- Greening
- Infrastructure development
- Precinct planning

The following diagram illustrates the design concept of the Dokodweni beach development:

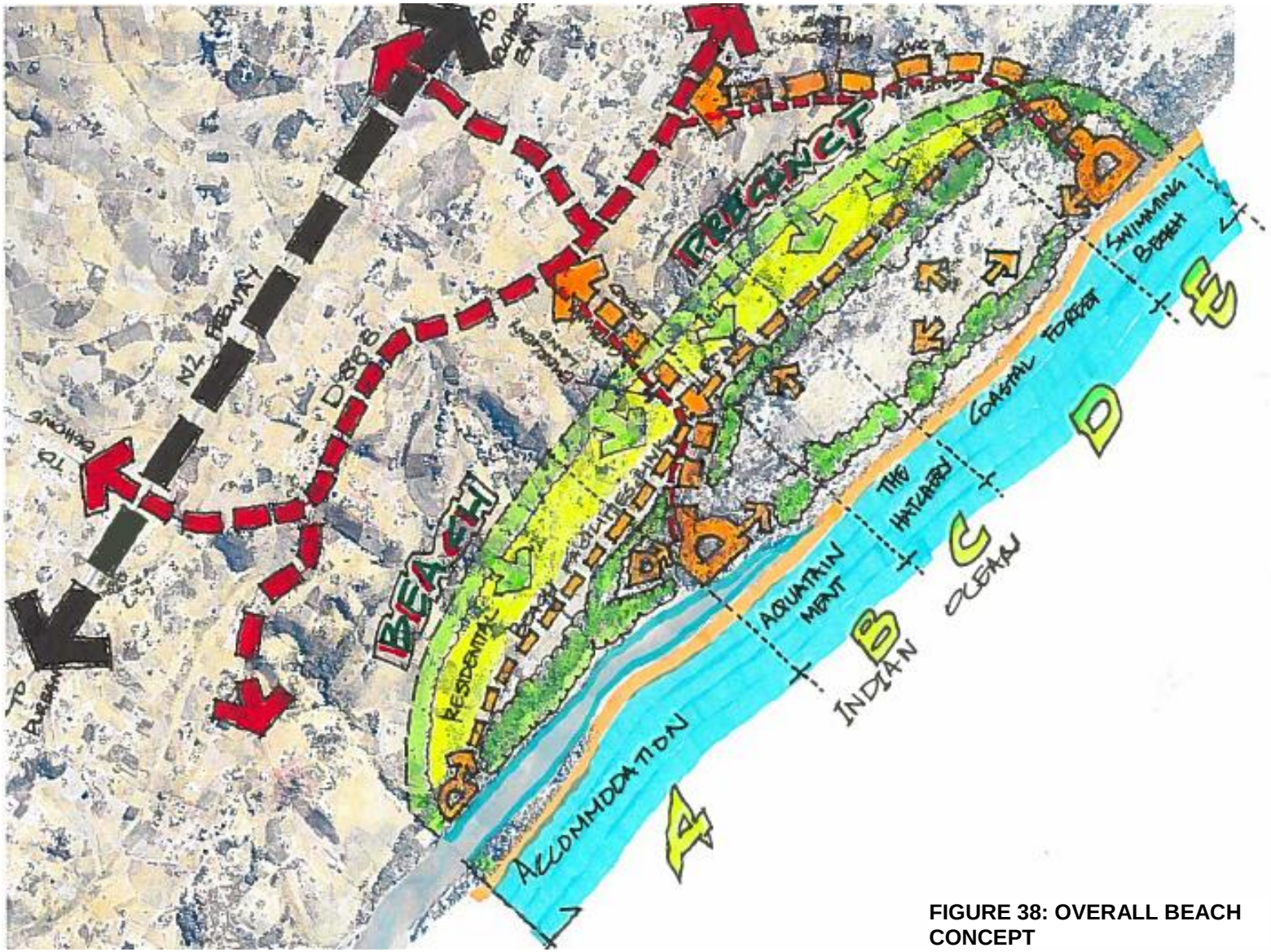


FIGURE 38: OVERALL BEACH CONCEPT

8.1. Movement

Access to the study area is gained through from the N2 Highway which links with D888. The N2 Highway is a regional corridor which is significant in the long-term planning of the province. This is a national road and SANRAL has ensured that it is maintained on a continuous basis. The municipality does not have that extra burden to maintain this route. The location of the study area along this route is therefore strategic in nature. The study area is also located between the major port cities of Durban and Richards Bay. It is also in close proximity to the Dube Tradeport and King Shaka Airport which is earmarked as an Aerotropolis. This has potential benefits for the study area in terms of logistical and freight activities along the N2 Highway. There are also added opportunities for tourism related activities. The development of the Dokodweni beach could tap into those opportunities.

Road improvements are critical and necessary particularly the D888 as it serves as the spine. Asphalt and tar surfacing could be used to harden the roads to ensure designated lanes with proper road markings are achieved. Demarcating road reserves could assist for future plans should there be a need to widen the roads. For instance, the proposed 20m road on D888 will virtually accommodate four lanes (two lanes running in opposite directions). However the widening of the road could be a phased approach owing to financial constraints and further investigations that might be required.

Sidewalks provide a critical component of pedestrian movement and safety. Where these are used, classic paving (concrete slabs, 120 mm x 110 mm) is proposed. In some cases this paving will be on both sides of the road. The paving by bricks is an expensive alternative but is common. In the case of the beach, the two could be used to together.

Pedestrian crossings are proposed at critical areas where pedestrians cross the main roads, and at traffic calming areas. Pedestrian crossing will be used for both traffic calming and as crossing areas for pedestrian. This will ensure that traffic slows down when approaching pedestrian crossing rather than having a normal painted pedestrian crossing. This has worked well in other areas, where pedestrian crossings are lifted off the ground and provide the dual function

Traffic calming techniques such as Traffic circle, speed humps and other forms of speed reduction measures should be considered to enhance the safety of pedestrians walking from one block to the other.

FIGURE 39: TYPICAL BUS TERMINAL

Public transport that would be accessible to the local community. Appropriate bus/taxi shelters should be provided in strategic locations along main roads.

Designated **emergency lanes** will be marked along

the access route to the beach. This lane will provide a right of way for emergency vehicles such as ambulances, fire fighters and police etc. to pass especially during the peak times of the year or when there are functions held.

8.2. Greening

Environmental **conservation** is critical and should assume significance in the study area as there are green areas made up of natural vegetation particularly along the coastal. These areas are untransformed and should be protected from major developmental impact. Any vegetation introduced in the study area for beautifying should also be indigenous and seek to integrate with existing natural vegetation. There are also various pockets of sugarcane and forestry need to be demarcated on the plan. There are pockets of land that comprise either sugarcane or forestry whilst the area along the beach is characterised by natural vegetation. It is critical that any new vegetation brought to the study area be integrated with the current natural vegetation systems. The Green areas within the study can then form the broader Municipal Open Space System (MOSS).

Landscaping and maintenance is fundamental in the management of the environment. Certain areas should be designated as public open spaces. There would be cases that would require new trees to be planted especially along roads. The municipality's parks department can play a major role in defining appropriate indigenous trees for planting along the main roads. There are different options such as the queen palm trees which could be proposed along the roads on both sides. In fact, they should be aligned with pavements – where sidewalks are planned, trees should be planted.

The predominance of **sand dunes** has a major impact in balancing climatic conditions along the beach. The Department of Environmental Affairs in the Province has also indicated that these sand dunes should not be disturbed in any way. Therefore proposed designs of roads should seek to meander between the sand dunes and limit as much as possible to cut through them.

8.3. Infrastructure

Access roads to various parts of the study are in poor condition in serious need of upgrading and rehabilitation.

Stormwater drainage will be required as roads are hardened to deal with surface runoff.

Appropriate **street furniture** in certain public spaces especially in the beach can be used such as benches, park tables, public bins etc.

Appropriately designed **street lights** are suggested along the roads, paths and public spaces. This will contribute towards safety in the centre. Such appropriate design should consider what the municipality uses in the neighbourhood as well as appropriate themes.

Appropriate **signage** contributes towards order and appearance of the area. The contrast is equally true in that unregulated signage can lead to filth and confusion. The municipality has erected signs in different parts of the study area. Proposals might require additional signage since it will be new developments.

Safety and security is also important particularly at the beach for tourists. Visitors need to feel safe while on their vacation. CCTV cameras could be installed in the beach and other strategic areas and also timeous patrolling of police.

FIGURE 40: TYPICAL SIGNAGE

8.4. Precinct zonation

Development within the beach will be confined within a precinct. The Beach Precinct divides the proposals into different portions. This is also tied with the budgetary constraints in that development will be phased. As a point of reference, the different portions are labelled A, B, C, D and E. This are described below:

Accommodation (A) – This sub-area takes into account existing accommodation facilities located here namely The Hatchery Beach and Luxury Experience and Zinkwazi camp. There is also the famous Prawn Shak restaurant.

Aquatainment (B) – This sub-area combines “aquatic life” and “entertainment”.

The Hatchery (C) – This sub-area takes into consideration the existing Hatchery facility which closed some years ago which has led to ageing infrastructure. Currently the facility produces dog chews.

Coastal forest (D) – The idea here is to maintain the existing natural vegetation by proposing uses which will not have a negative impact or transform the area. A Nature Game Reserve will be proposed in this sub-area and consist of different animal species.

Swimming beach (E) – Swimming is more suitable on this beach therefore this sub-area will be proposed as the main swimming beach. The following diagram is an illustration the proposed beach precinct:

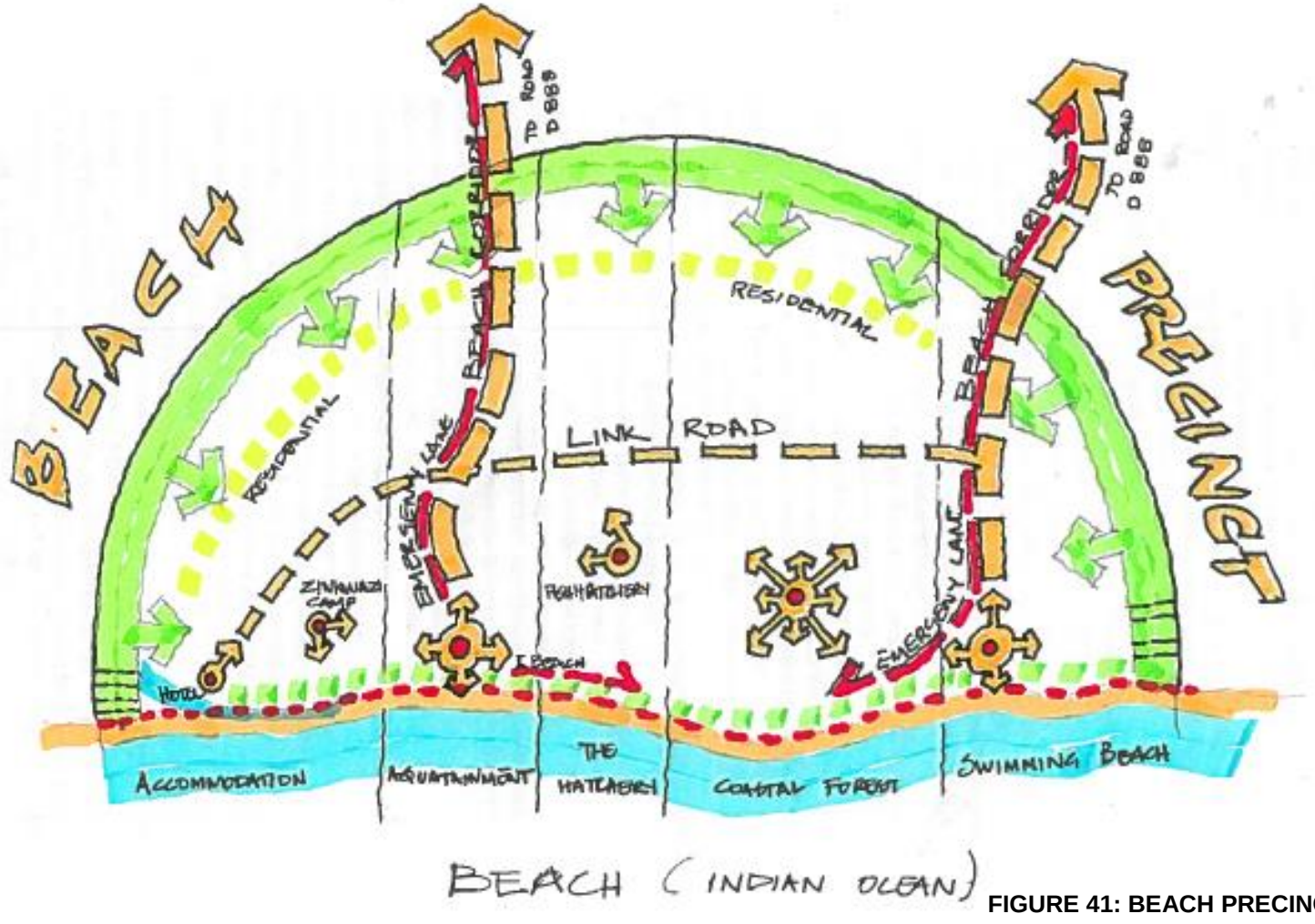


FIGURE 41: BEACH PRECINCT

8.4.1. Accommodation

Sub-area A will cater for accommodation taking into cognisance already existing facilities. There are two existing accommodation facilities namely “The Hatchery Beach and Lagoon Experience” and “Zinkwazi Camp”. Both these facilities are located in Nqutshini, on the south western part of the study area at the interface between the Amatigulu lagoon and residential settlements. Natural vegetation is in abundance surrounding the two facilities. It is important to note that both these accommodation facilities are in keeping with the African Beach Experience thinking. Building structures are customized in line with surrounding traditional settlements.

The Hatchery offers accommodation solutions (self-catering with communal kitchen) to visitors who want to experience the coast within a rural setting. This facility was once operated by Faan Myburgh as a prawn hatchery. The pump house, arteria and maturation rooms have since been changed into 8 rooms – each one can be experienced and enjoyed because they offer a fun take on the history of the building.

The Nkwazi Camp is a rustic fishing camp run by the local community. Within close proximity of the camp is the famous Prawn Shak. The Prawn Shak is a restaurant and pub that offers a variety of dishes which namely local (Shisanyama), Mexican and Mocambiquecan cuisines etc.

Design parameters should seek to beautify the area and upgrade the road linkages to these facilities. The current road linkages are gravel. Access to these facilities is obtained through local access roads which are linked with the main mobility route (D888). The Hatchery gains its access through A2528 whilst Zinkwazi Camp is accessible through A2529. There is also a link that joins both A2528 and A2529. The following diagram illustrates

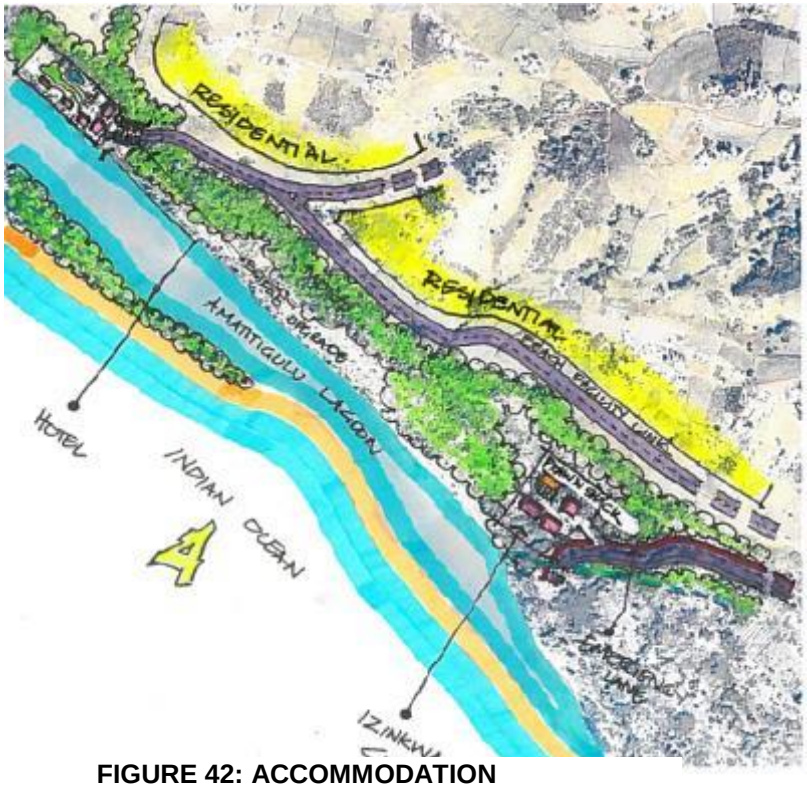


FIGURE 42: ACCOMMODATION

8.4.2. Aquatainment

Sub-area B is considered as an Aquatainment area. The term Aquatainment is derived from the merger of two things namely aquatic life and entertainment in form of with festivities that are held annually on the beach. As indicated, the municipality is trying to attain the Blue Flagship status and this beach is utilised to also drive that point. The space in front of the lagoon is generally used by people for gathering purposes. The idea is thus to make proposals that seek to support existing activities. The following could be suggested:

- Upgrading of the access road with a temporary boom gate placed on the entrance to restrict traffic during events. An emergency lane could also be designated for emergency vehicles.
- Ablution facilities
- An amphitheatre in the area where people gather
- Camp site
- Swimming pools

FIGURE 43: AQUATAINMENT

8.4.3. The Hatchery

Sub-area C is the Hatchery facility. This facility is important in terms of production and manufacturing within the study area. Therefore upgrading and rehabilitation of this facility will assist in job creation. The design parameters for this facility are as follows:

- Access road to the facility needs upgrading
- Proper fencing required needs to be rehabilitated.
- Upgrading of cold rooms for storage purposes

FIGURE 44: THE HATCHERY

8.4.4. Coastal forest

Sub-area D comprises of natural vegetation and is earmarked for environmental conservation. It is envisaged that proposed activities should have limited negative impact on the area. Initial thoughts were to establish a Nature Game Reserve in this area but due to the size, Ezemvelo KZN Wildlife advised that it will not have the required capacity. Therefore it is proposed that Nature Reserve activities are promoted here. The following are considered for this sub area:

- Upgrading of road that passes along the beach
- Bike trail which will link with the one the Siyaya trail.
- Retaining wall along road

FIGURE 45: COASTAL FOREST

8.4.5. Swimming beach

Sub area E is proposed as a swimming beach. This beach is located on the north eastern part of the study area. It is conducive for swimming purposes due to its flatness and beauty. Current activities include informal fishing. The access road to this beach is currently poor and needs upgrading. There is also an abundance of natural vegetation and sand dunes within the study area. The following could be considered in improving the area:

- Upgrading of the access road
- Fish pier
- Swimming bathrooms
- Life guard offices
- Shops
- Parking
- Coastal resort

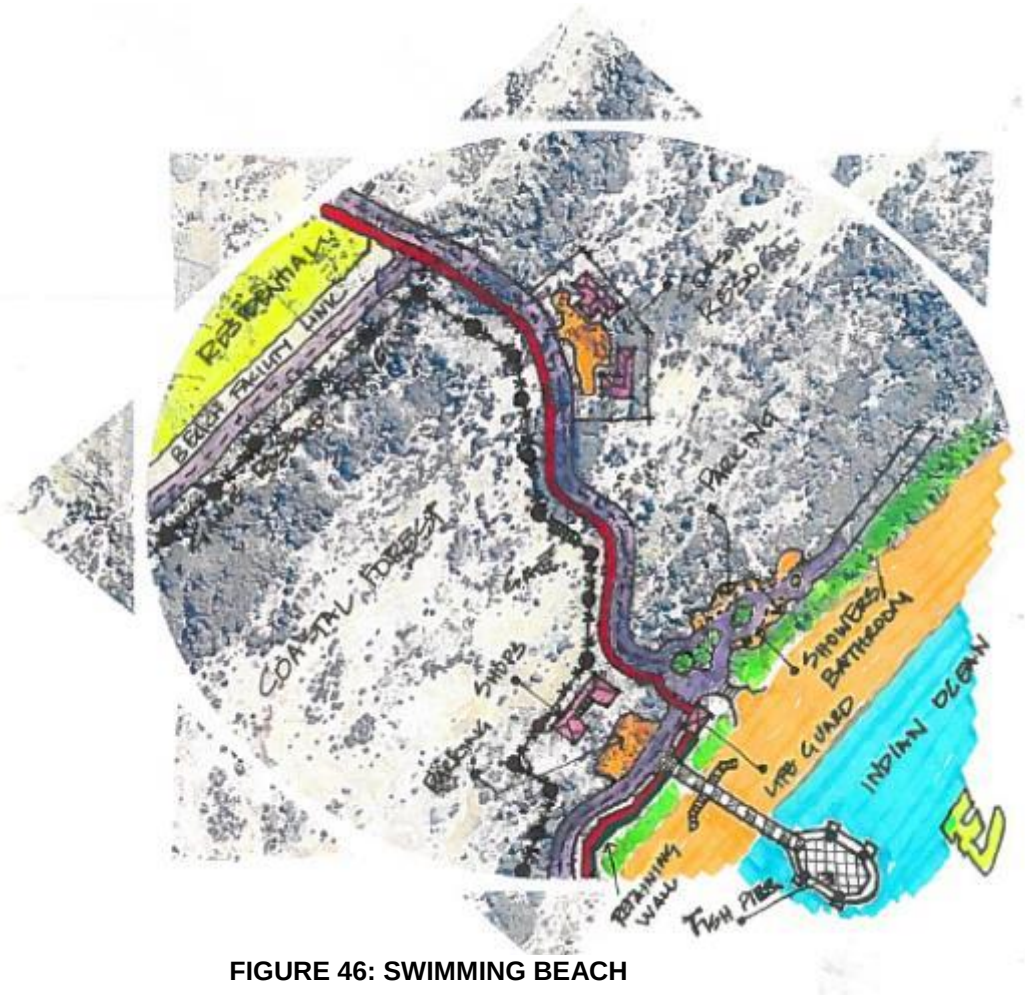


FIGURE 46: SWIMMING BEACH

9. TOWARDS A SPATIAL FRAMEWORK FOR THE DOKODWENI LAP

9.1. DEVELOPMENT INTENSITIES

In defining the intensities for the study area, its rural character needs to be considered. The status quo revealed that the current settlement structure is dispersed and scattered low density rural settlements which are surrounded by sugarcane and forestry. The spatial framework classifies settlement areas according to their level of intensities. These are classified as follows:

- High density
- Medium density
- Low density

The following table elaborates on the abovementioned densities by providing a description and level of service:

TABLE 30: DEVELOPMENT INTENSITIES

AREA	DENSITIES	DESCRIPTIONS	LEVEL OF SERVICE
A	30 du /ha	➢ These are typically high density areas within the study area where development has already taken place at a rapid level or where there is a potential to densify. ➢ To a large degree the location of these areas is strongly influenced by good road network system linking such areas with neighbouring amenities.	Whilst these areas remain, to a large extent, under Ingonyama Trust, development and provision of services should nonetheless follow fully serviced high density sites. These should provide the following services: ➢ Water borne sanitation ➢ Water to each site ➢ Access to each ➢ Storm water measures
B	20 du / ha	These areas are typically medium density that could still use some form of on-site sanitation They are also influenced by good road network system linking with adjoining communities	The following services are to be provided: ➢ On site sanitation ➢ Individual to communal water ➢ Subsistence agriculture
C	10 15 du / ha	Areas here are generally a buffer between environmentally sensitive areas and settlements areas.	The following services are to be provided: ➢ On site sanitation ➢ Individual to communal water ➢ Subsistence agriculture
D	6 du/ha	These are low density areas of rural setting.	The following services are to be provided: ➢ On site sanitation ➢ Individual to communal water ➢ Subsistence to commercial agriculture

9.1.1. High Density

High density type development is not evident in Dokodweni due to the rural nature of the study area. However this type of density is necessary considering the proposals that have been made in terms of bulk infrastructure. The growth of this area is anticipated to take place over the years to come with or without the proposed development given the demand for land in the Dokodweni area. Therefore it is proposed that high density development to be mainly along the primary corridor (D888). Such density is prohibited when one moves towards the beach. Densities in this zone are currently estimated at 30 dwelling units per hectare Due to the extension of the primary corridor in the Nqutshini area, proposed high density development takes a south westerly direction. This informed by the meandering corridor and existing households in this area. Therefore the zonal notation is a guide for future high density proposals. The areas closer to the Amatikulu Nature Reserve will remain as is but high density development should not promoted here given the agricultural buffer zone between the Reserve and proposed densities.

9.1.2. Medium density

This type of density is characterized by a mixture of generally good quality self-built dwelling structures. Medium densities are spread across Dokodweni, Nqutshini and Mbizimbelwe. Densities in this zone are currently estimated at 10 to 15 units per hectare. It is recommended that that density in this zone should be 15 du/ha. It is also important to commence with planning of local accesses in this the area so that future densification occurs within a guided framework.

9.1.3. Buffer zones

There are few settlement dwelling located along environmentally sensitive areas. The spatial development framework recommends that a buffer zone be promoted on such areas. The buffer recognises the relatively high density in the settlement area but encourages reduced density as one approaches the sensitive sites. A 20m buffer is recommended along these environmentally sensitive areas. Future residential development located along environmentally sensitive areas should be at least 10 du/ha.

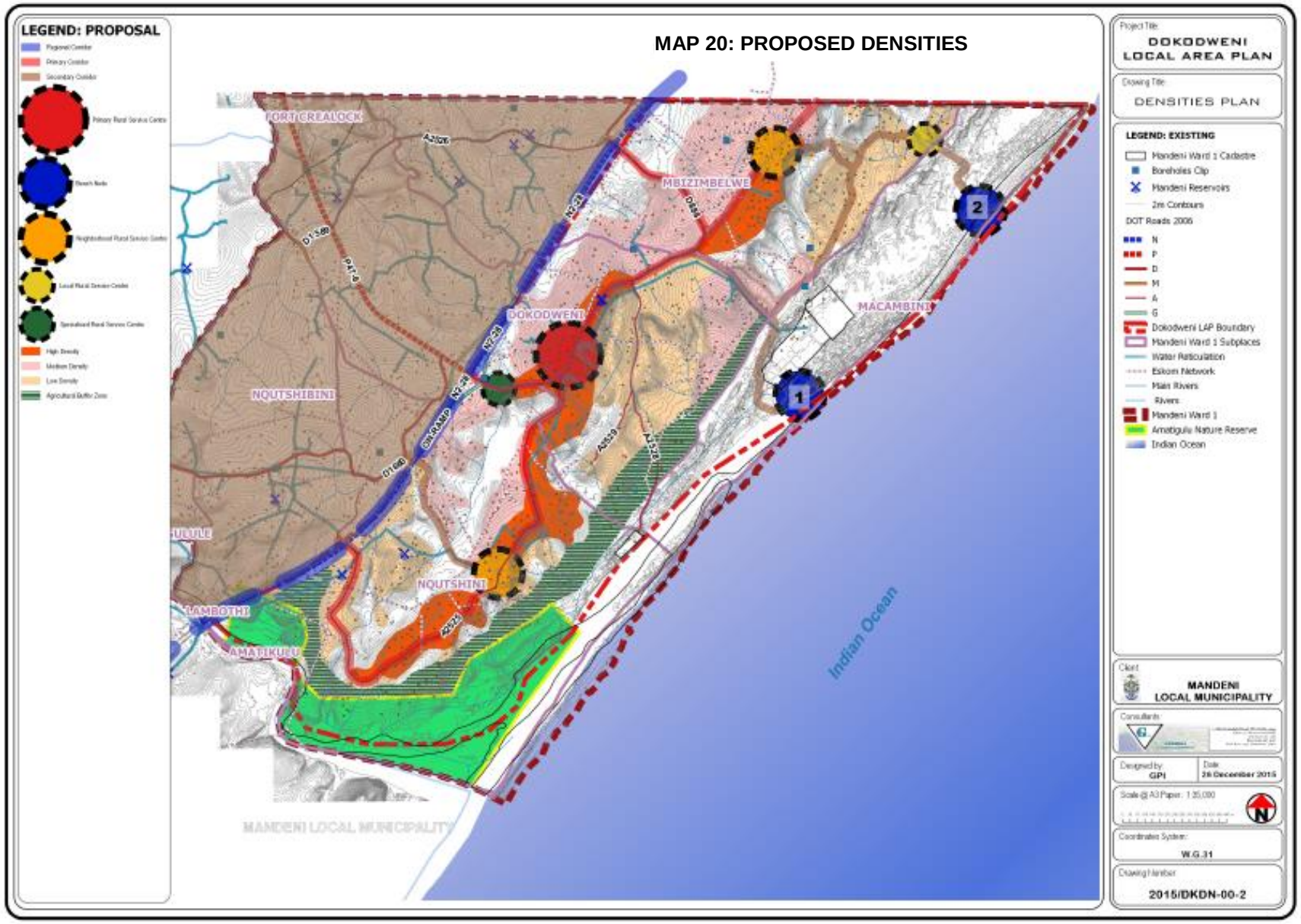
9.1.4. Low density

Low densities within the study area are approximately 2 to 5 dwelling units per hectare. Many households are engaged in subsistence and commercial agricultural activities. The LAP promotes households residing within these densities to engage in agricultural activities with a buffer zone proposed between the households and natural vegetation. It is proposed that up to 6 du/ha is promoted in these areas in the short to medium term.

The following should be promoted here:

- Agriculture
- Environmental protection
- Medicinal plants

MAP 20: PROPOSED DENSITIES



9.2. Road and Transport Planning

9.2.1. Context

The status quo provided a clear hierarchy of roads with the assistance of the TRH 26, South African Road Classification and Access Management Manual, 2012 (RCAM). Access to and within the study area is generally not problematic. The N2 Freeway from Durban to Richards Bay traverses the study area from south to north. It provides access to the study area and acts as the main buffer on the west of the site as it sits on the project boundary. The P47-6/D888 forms the linkage that provides access into the study area. Generally the road network within the study area is operating within capacity and public transport will remain road based due to the dispersed nature of the settlements and the general topography of the area. There is no rail link within the study area. The following is the classification of roads within the study area:

- The N2 is a Class 1 National mobility route which carries high volumes of traffic across the country.
- P46-7/R66 is a Class 2 Regional mobility route providing access from the N2 Freeway in the west of the study area,
- D888 is a Class 3 District mobility route extending from the P46-7/R66 providing access to the study area.
- There are also Class 4 Access roads which provide access to settlements which include A2525, A2528 and A2529.

9.2.2. Recommendations

- D888 is a primary distributor and should be surfaced and realigned to appropriate road standards. The new road reserve should be 20m wide with pedestrian sidewalks on either side which would be 2m wide. This road should have four lanes with two on each side running opposite of each other.
- Existing access roads are collectors which feed off from the main D888. These roads need to be surfaced and realigned to appropriate standards. The new road reserves should be 15m wide with pedestrian sidewalks on either side measuring 2m in width. These roads would be a two lane carriageway with one lane on running opposite of each other. Water drainage which is 1.5m wide on both sides.
- The existing unsurfaced access roads which form the present internal road network should be upgraded to engineered alignment standards and paved with appropriate materials to suit the purpose intended. Mostly this will comprise asphalt surfacing, but other materials such as segmental paving may be introduced in community focus areas. Water drainage which is 1.5m wide.
- There is a need to control speed along D888 especially within the vicinity of schools. Provisions for pedestrian crossings should be demarcated. Currently uncontrolled pedestrian crossings exist, and this can addressed through appropriate road markings, proper road signage and signals. Fencing around grazing areas along this route could limit cattle crossing.
- Traffic circles should allocated using appropriate standards. One traffic circle is proposed near the N2/D888 intersection.

This traffic circle could be between 700m – 1500m in diameter.

- A Symbol will erected at the middle of the traffic circle representing Dokodweni
- The public transport network is one that is operated through buses and mini buses/taxis. It is proposed that a bus/taxi rank be established. Bus and taxi stops should be provided with appropriate shelters.

The following table provides a hierarchy of roads within the study area:

TABLE 31: ROAD HIERARCHY

Category	Road Surfacing	Road Surfacing Width	Road Reserve Width	Road Drainage
Primary Distributor (Class 3)	Gravel (tarred if sufficient budget)	16m	20m	1.5m wide road side drains both sides
Collector roads (Class 4)	Gravel (tarred if sufficient budget)	7m	15m	

9.3. Infrastructure Framework

9.3.1. Water

The Guidelines for Human Settlement Planning and Design outlines the following objectives when planning to supply water to a settlement:

- The provision of sufficient water for domestic consumption and hygiene
- The improvement of public health
- The improvement of the quality of the existing supply
- The improvement of the living standards of the community

9.3.1.1. Levels of service

Occupation densities, available sources of water and current infrastructure will inform the decision of the planned level of service. The available levels of service are identified below:

- Level 1 - The minimum acceptable reticulation includes a single standpipe serving people within a 250m radius.
- Level 2 - This level includes the provision of one communal standpipe for every 10-20 sites within the development.
- Level 3 - provides a standpipe per site (yard connection) with the connection being metered and requiring the consumer to pay for the service which may include a 200l roof tank with a low pressure connection. This allows for the 6kl/month free basic water service.
- Level 4 - This level relates to on-site reticulation which is considered as part of the building costs of a dwelling resulting in a minimal difference in cost to level 3 water supply. This level must only be implemented if the consumer fully

understands the connection and ongoing costs associated. This allows for a semi to high pressure connection.

9.3.2. Sanitation

The minimum basic level of service of sanitation, as described by the Department of Water Affairs and Forestry is as follows:

- A toilet facility for each household
- Appropriate health and hygiene awareness and behaviour
- A system for disposing human excreta, household wastewater and refuse, which is acceptable and affordable to the users, safe, hygienic and easily accessible.

9.3.2.1. Levels of service

When determining the level of service for a particular area, factors such as occupancy densities, cost implications and terrain must be carefully scrutinized. The levels of service are discussed below:

- Level 1 - A Ventilated Improved Pit latrine detached from the dwelling is the most basic and cheapest acceptable option. The costs may vary depending on whether the superstructure is commercially manufactured or self-built.
- Level 2 - The Anaerobic Digester unit is a level 2 sanitation service but is more expensive than level 1. It is possible to upgrade this system to a low volume flush. This system is not recommended because poor management of the mechanism i.e. excessive usage of water will result in the system being saturated and not functioning properly.
- Level 3 - The usage of a septic tank/ soakaway system is suitable for areas of low to moderate density and provides an alternative to level 4 sanitation. The effectiveness of this system is reliant on acceptable ground infiltration rates.
- Level 4 - Waterborne Sewer – A full waterborne sewer system is regarded as the highest level of sanitation. This system is implemented for higher capacities and is the most costly level of service.

9.3.3. Stormwater

The Guidelines for Human Settlement Planning and Design identifies the following goals for effective stormwater management:

- The protection of life and property from flood hazards
- The improvement of the quality of life of the community
- The preservation of the natural environment
- To protect water resources from pollution
- To prevent loss of life and reduce damage to property by the runoff from frequent storms

9.3.3.1. Stormwater management principles

The following principles will govern the perspective on the management of stormwater within the project area.

- Care must be taken not to concentrate roadside stormwater to the extent that it then causes erosion. Extensive damage to the hardened roads within due to erosion indicates the need to provide appropriate yet affordable and long lasting roadside stormwater drains.
- Flood plains should be protected and preserved to perform their natural stormwater conveyance and storage functions.
- The stormwater drainage system (‘V’ Drains, Open Channels etc.) should be designed to convey runoff in a controlled manner that will not adversely affect upstream, adjacent or downstream properties on watercourses.

- Watercourses should be inspected and maintained to control blockage, erosion and physical and chemical pollution.
- Individual developments should have stormwater drainage systems that are integrated with the master drainage plan.

9.3.4. Electricity

9.3.4.1. Principles and levels of service

There are two basic levels of service for electrical supply and the choice of technology depends on load density classifications amongst other factors. The key attributes of the different levels of service are discussed below.

- Prepaid Systems – The prepaid system is utilized in low income, developing settlements with a 20A basic service and a 60A service for higher income areas.
- Standard connections – The standard electrical supply for suburbs consists of a 60A connection. Economic Hubs with high demands may require a 3-Phase electrical supply system

9.4. Framework for Natural Resource Management

9.4.1. Ilembe District

There are two critical tools at the District Level that is, the **Integrated Regional Spatial Plan** (IRSP) and **Environmental Management Framework** (EMF).

9.4.1.1. The Integrated Regional Spatial Plan

The IRSP requires all Local municipalities to develop the Municipal Open Space system (MOSS) plan. This plan should be in line with themes like ecological systems, recreational, heritage objects, and rehabilitation of degraded important ecological features such as wetlands and rivers (see also Open Space Plan). The LAP currently demarcates open space systems and environmental management areas.

9.4.1.2. Ilembe Environmental Management Framework

The Environmental Management Framework (EMF) sets out five environmental management zones, which apply across the District (refer to the map below). The focus of the EMF is to identify areas of natural resource importance, ecological sensitivity, as well as transformation pressures in order to formulate a spatial environmental plan to guide decision making and relevant spatial development plans. It also identifies areas having / showing the conservation value.

An EMF primarily qualifies as ‘information and maps’ that inform assessments for environmental authorisations, and the framework may be used to inform the Minister or MEC in terms of the identification of ‘geographical areas’ when interpreted or used as ‘spatial development tools’. Therefore it is imperative for the proposed Dokodweni Plan to accommodate the objectives of the EMF. According to the recommended EMF Zones, the study area falls within two zones which are a) Coastal Management zone and b) Commercial Agricultural zone.

The Commercial Agricultural Zone represents areas with high land capability and suitability for commercial agriculture. These areas are important for food production, food security and the employment opportunities that are linked to the agricultural activities. The Dokodweni Area-based Plan has identify all areas having / showing agricultural potential and are indicated in the Draft Plan.

Coastal Management zone was developed to recognise and manage the unique and complex nature of the coastal area within iLembe. Coastal specific environmental assets, risks, pressures and activities within this zone will be managed in accordance with the relevant legislation and policy and such policies include the Integrated Coastal Management Act, Living with Coastal Erosion in KwaZulu Natal, just to mention a few.

Due to dynamic nature of the coastal strip, there is a need to develop coastal set-back lines (no-development area along the coastal edge) in terms the EIA Regulations and the Integrated Coastal Management Act, for the management of sensitive environments within the existing built environment, mitigate loss of biodiversity, and prevent or limit damage to infrastructure through coastal erosion processes. As indicated above, development of setback line is a responsibility of the Provincial Department of Environmental Affairs.

Furthermore, within Coastal Management zone, management of wetlands and estuaries needs to be carefully managed to ensure ecosystem functioning is maintained. It will be critical for the Dokodweni Plan to identify and map all sensitive areas such wetlands, estuaries and dunes and these area may be either classify as areas of conservation or open space system depending on the size.

9.4.2. Disaster Management

From the recently finalised Disaster Management Plan for the iLembe District, it has been noted that it did not consider the occurrence of the Disasters along the coastline of both the KwaDukuza and Mandeni Municipal Coastlines. It is crucial to consider the possibility of disasters along the coastline which might have a negative impacts on both the natural features and proposed structure within the area, especially taking into consideration the 2007 storms occurred within the KwaZulu Natal coasts including the iLembe region and the predicted impacts of climate changes, which include the increased storminess and marine surges, sea level rise and increased frequency of extreme natural events. Although major impacts were recorded within the KwaDukuza Municipality, however, it is necessary that provisions be made for coastal disaster management even within the Dokodweni area, and that these provisions are in compliance with the Disaster Management Act (Act No. 57 of 2002) which was established to provide for a) the development of an integrated and co-ordinated disaster management policy that focuses on preventing or reducing the risk of disasters, mitigating the severity of disasters, emergency preparedness, rapid and effective response to disasters and post-disaster recovery; b) the establishment of national, provincial and municipal disaster management centres; and c) other matters concerning disaster management within that particular area.

FIGURE 47: NATURAL VEGETATION

Fortunately, the Mandeni Municipality is still working on its Municipal Disaster Management Plan. This plan should be able to map disaster prone areas within the coast. This information could be obtained from the Department Economic Development, Tourism and Environmental Affairs – Coastal Management Unit. This unit has developed a software known as Coastal Vulnerability Index.

9.4.3. Biodiversity Management

The Dokodweni Local Area-Based Plan has accommodated and supported the objectives of the main strategies in KZN, promoting conservation of important biodiversity, which is the Protected Areas Expansion, the Stewardship and Identification and Mapping of Important Biodiversity Areas

9.4.3.1. Protected Areas Expansion and Marine Protected Areas

In order to conserve biodiversity, amongst other policies, the Department of Environmental Affairs has developed the National Protected Area Expansion Strategy (Government of South Africa 2010). This strategy defines Protected Areas as “areas of land or sea that are protected by law and managed mainly for biodiversity conservation”. This strategy should include habitat and species representation and protection. Protected areas are recognised in the National Environmental Management: Protected Areas Act (Act 57 of 2003) are considered formal protected areas in the NPAES, this includes MPAs proclaimed through South Africa’s Marine Living Resources Act.

Therefore, Marine Protected Area (MPA) is one of the most effective means of protecting areas of particular importance within the coastal waters. The MPA is the term used to describe any part of the intertidal or sub-tidal region that is reserved by legislation for the protection of living marine resources. MPAs have been designed to protect turtle nesting beaches, seabird breeding areas, fish spawning and nursery areas and exploited crustaceans and molluscs.

The Tugela MPA is being proposed within the iLembe District Municipality and it will include the Dokodweni Area as well. Therefore

the Dokodweni LAB is in support of the both the Protected Areas Expansion and Marine Protected Area. Hence some conservation sites have been identified and accommodated in the Plan.

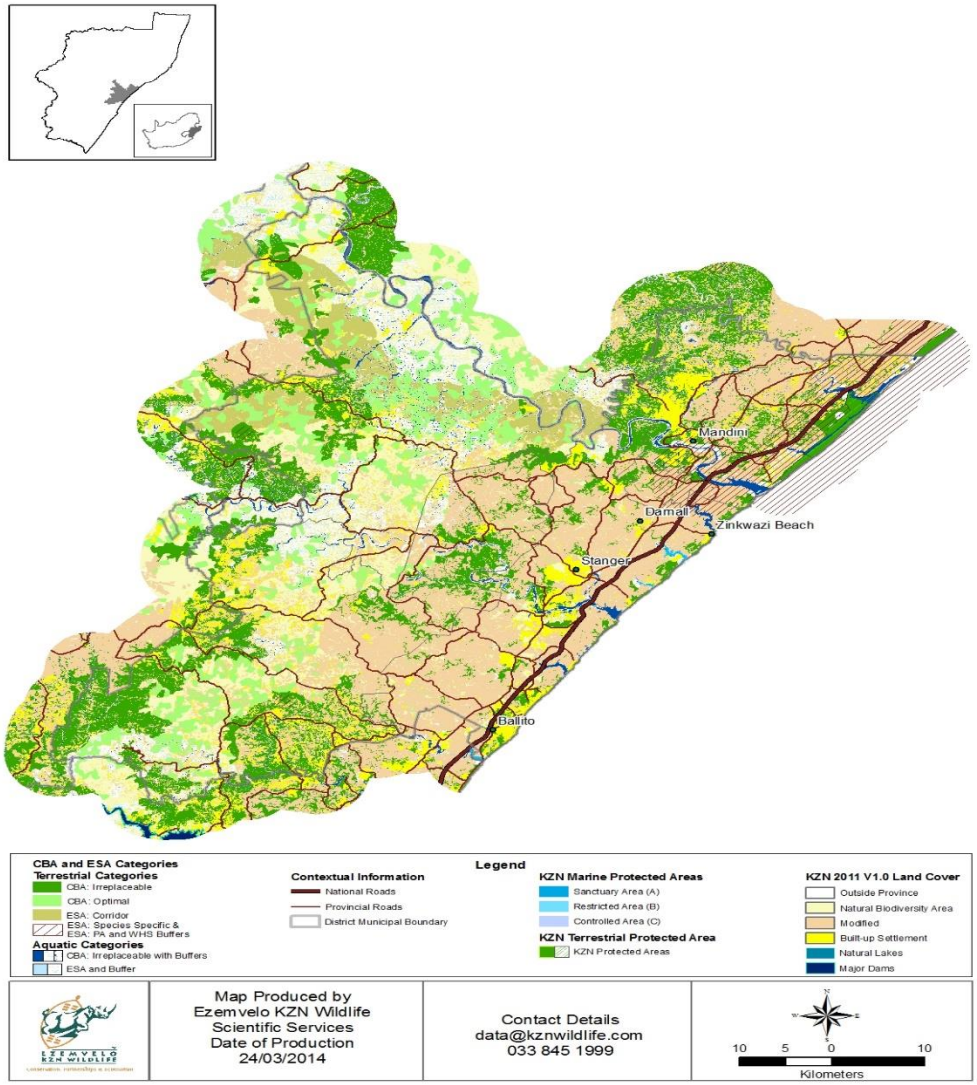
9.4.3.2. Stewardship Programme

The iLembe Environmental Management Framework has identified areas of conservation value within various Local Municipalities, including Mandeni Municipality. Within the Dokodweni area, several areas have identified, and the Framework recommends that such areas should be included in the Stewardship programme. The Dokodweni LAB proposes some of the land to be zoned for conservation or open space system.

9.4.3.3. Identification and Mapping of Important Biodiversity Areas

The mapping the important Biodiversity Areas exercise aims to determine important areas for the conservation of biodiversity, in order to guide sustainable development as well as focus conservation efforts within the District. The biodiversity mapping profile covers the terrestrial and aquatic environs of the district and is reflected as a biodiversity sector map consisting of two main layers namely Critical Biodiversity Areas (CBAs) and Ecological Support Areas (ESAs).

Taking into consideration the type of biodiversity occurring within the Dokodweni, it is likely that important Biodiversity areas will be identified from this area. The Map below provides the details.



MAP 21: CRITICAL BIODIVERSITY AREAS

9.4.4. Plans for the Management of Coastal Resources

9.4.4.1. The Open Space Plan

The iLembe Environmental Management Framework, and the Integrated Regional Spatial Development Plan (IRSDP) have all highlighted the need for the iLembe Family of Municipalities to develop a Municipal Open Space System (MOSS) plans and bylaws in order to achieve the sustainable development objectives of the National Environmental Management Act.

An Open space can be defined as a land or an area, which is not yet developed for residential, commercial, industrial or institutional use purposes. Others define it as an area of natural landscape essentially undeveloped, such as ridges, streams, natural shorelines, scenic buffer areas, and so on. EThekwini Metro categorizes the Open Space System into two, which is the urban and natural Open Spaces. The urban open space "are the human made or legally designated places and areas that are developed for community use, which include parks, sports fields, agricultural fields, streets, town squares, road reserves, servitudes for services such as electricity transmission line, dams, private gardens, etc." The natural open Space on the other side is "the remaining undisturbed natural and undeveloped areas containing the core terrestrial, freshwater, estuarine and marine ecosystems. These ecosystems include land cover types such as grasslands, forests, beaches, estuaries, rivers, wetlands, etc."(*Durban MOSS, Durban Metropolitan Council, 1999).*

In light of the afore-stated definition, the open space plan should be understood as a plan that seeks to preserve any undeveloped or natural land within and beyond the urban edge, which can fall within the following categories, namely, the **ecological, social, institutional, heritage**, and **prospective** (degraded land requiring rehabilitation). It has been agreed that this is the approach that following within the iLembe District in order to achieve the recommendations of the abovementioned plans.

The Dokodweni area is one of the areas that possesses environmental sensitive fitting the ecological, heritage and prospective themes. The table provide a more detailed information of the themes:

TABLE 32: THEMES

MAIN CATEGORY		SUB-CATEGORIES
Ecological open space	Existing	• Nature reserves • Water bodies (wetlands, rivers and streams and be buffered by 500m) • Nature trails
	Desired	• Areas of "high" conservation value, as determined in the EMF • Areas with "high" habitat diversity as determined in the EMF • Areas with a low disturbance as determined in the EMF • Red Data fauna, as determined by the Ezemvelo KZN Wildlife C-Plan • Red Data flora by the Ezemvelo KZN Wildlife C-Plan • "Natural" land cover categories as determined in the EMF
Heritage		• Art galleries • Cemeteries of historical importance • Archaeological sites • Cultural / heritage sites

Prospective open space	➢ Refuse sites / waste transfer station ➢ Landfill sites ➢ Mining land & quarries ➢ Areas affected by erosion

9.4.5. Coastal Management Programme

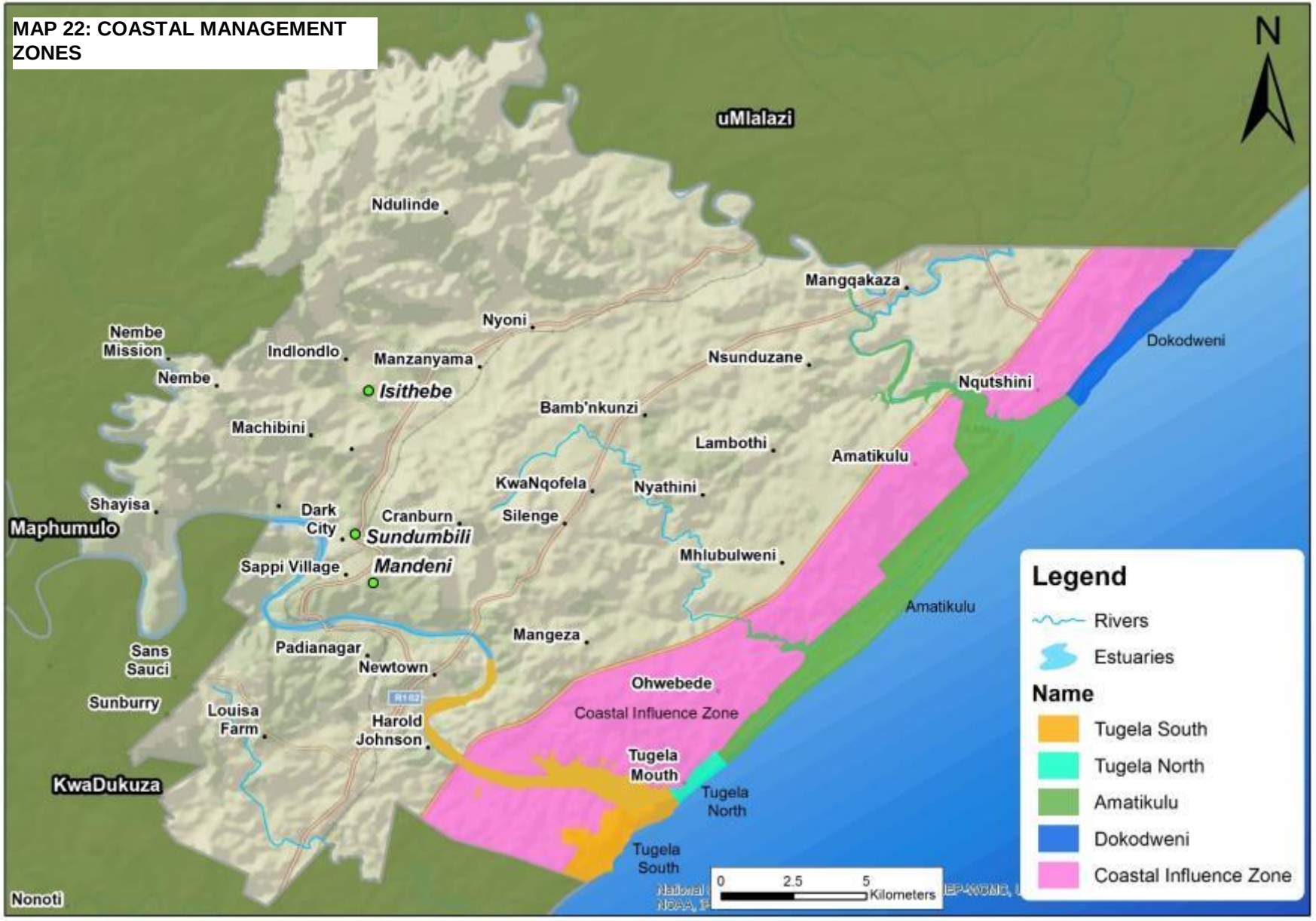
Section 48 (1) (a) of the Integrated Coastal Management Act (ICMA), states that a coastal municipality, must, within four years of the commencement of this Act, prepare and adopt a municipal coastal management programme for managing the coastal zone or specific parts of the coastal zone within the municipality.

The Mandeni Municipality has finalised and adopted the Coastal Management Programme (CMP). The programme provides a number of recommendation within it five precincts. The proposed plan falls within the Dokodweni precinct.

The proposed activities within the Dokodweni are in line with the recommendations of the Mandeni Coastal Management Programme. The plan also recommend the implementation of the Blue Flag Programme which is currently underway.

Although the Blue Flag programme currently implemented adjacent to the lagoon, but in the near future the programme will be move further north, where there is the beach is much wider and better swimming opportunities. Hence more swimming activities are suggested further north of the Dokodweni area.

MAP 22: COASTAL MANAGEMENT ZONES



9.4.6. Coastal Access

Coastal Access generally means the ability of the public to reach, use the shoreline of coastal waters, commonly for swimming or any other recreational purposes. Section 18 of ICMA (1) states that each municipality whose area includes coastal public property must within four years of the commencement of this Act, make a by-law that designates strips of land as coastal access land in order to secure public access to that coastal public property.

The main intention of this Section of ICMA is to promote equitable, safe and environmentally sensitive access to the coastline for all abled and disabled citizens to enjoy, and as a means to further enhance the socio-economic value of our coastline. Equitable access to the coastline is very important in our country given our past where the exclusion and discrimination of other racial group was prevalent. Even this is necessary it is critical to conducted coastal access in an environmentally responsible manner that will not diminish the value of our coastline.

In light of the above, the Municipalities are required to both designate strips of coastal access land (CAL) and develop a Coastal Access Management Strategy according to the requirements of the National Environmental Management: Integrated Coastal Management Act, Act 24 of 2008 (ICM). This includes setting out the responsibilities of municipalities with regard to CAL. These responsibilities include the following:

- signpost entry points to that coastal access land;
- control the use of, and activities on, that land;
- protect and enforce the rights of the public to use that land to gain access to coastal public property;
- maintain that land so as to ensure that the public has access to the relevant coastal public property, including parking areas, toilets, boardwalks and other amenities, taking into account the needs of physically disabled persons;
- ensure that the provision and use of coastal access land and associated infrastructure do not cause adverse effects on the environment;
- remove any public access servitude that is causing or contributing to adverse effects that the municipality is unable to prevent or to mitigate adequately;
- describe or otherwise indicate all coastal access land in any municipal coastal management programme and in any municipal spatial development framework prepared in terms of the Municipal Systems Act, and perform any other actions that may be prescribed, and
- Report to the MEC within two years of the Act coming into force on the measures taken to implement this section" (DEA, 2008:38).

The Mandeni Municipality has not yet finalised their Coastal Access Plan as required by Act. The Dokodweni plan has recommended that the swimming beach will be located at the North beach (refer to proposals in next section) which will be in line with the provisions of the Act. It is important to note that the Municipality has finalised the Coastal Management Programme and it indicates some few areas for accessibility into the Dokodweni beach. Most of these access points are informal, meaning the Municipality must upgrade them in order to meet the acceptable standards.

9.4.7. Development of the Estuarine Management Plan

Section 33 (1) of the ICMA states that estuaries within the Republic of South Africa must be managed in a co-ordinated and efficient manner and in accordance with a National Estuarine Management Protocol. There are two critical estuaries located within the Mandeni Municipality that is the Tugela Mouth on the south and Amatigulu Estuary north. The Amatigulu Estuary falls within the Dokodweni Area-Based Plan. The plan will take into consideration the development of the Amatigulu Estuarine Management Plan, which is currently not yet undertaken by the Municipality.

In developing an estuarine management plan, it is essential to consider the zonation of the estuary in order to guide sustainable utilization of the estuarine resources without degrading these resources. Therefore, zonation should attempt to demarcate:

a) The geographical boundary of the estuary by indicating important habitats (e.g. open water, main channel and flood plains);
b) The surrounding land uses and existing infrastructure;
c) Areas designated for the conservation and protection of biodiversity;
d) Appropriate buffers in which land use and development are strictly controlled and monitored; and
e) Zones where certain types of activities (recreational, commercial, industrial etc.) are allowed or not allowed to occur.

Furthermore, it is important to consider the requirement of the National Water Act, 1998 and other policies such as the A Practical Guide to Wetland and River Delineation. These policies suggest that there should be the environmental lines to be used to inform the development control Zone. For instance, the 32m river buffer and 100m of 1:100 floodline, as well as 100m and 1km from the high water mark and current estuary area. All these controls will be indicated in the draft plan and will used to inform the development.
It should be noted that the development of the Matigulu/Nyoni estuarine management plan would need to be undertaken in partnership with Ezemvelo KZN Wildlife as the estuary falls both within the Amatikulu Protected Area and outside this Protected Area delineation.

9.4.8. The Coastal Planning Scheme

The coastal zone hosts a diversity of unique species and ecosystems not found in the interior region. As such, the management and protection of coastal biodiversity of the Municipality needs to be in accordance with the National Environmental Management: Biodiversity Act. For the Municipality to better manage the coastal areas and resources, it is important to develop a scheme, which the Integrated Coastal Management Act refers to as a coastal planning scheme. Developing a coastal planning scheme can assist the Municipality in making an informed decision about specific areas within the coast and stipulating good conditions for the management of any land use permitted within the coastal zone areas.

The Coastal Planning Scheme should focus on areas within the coastal zone or coastal management area which may be exclusively or mainly used for a specified purpose or activity. This plan may also restrict or prohibit certain activities in, or uses of a specified zone.

The Municipality has finalised its Coastal Management Programme and has been adopted by the Municipality council. The Coastal Planning Scheme will have to be developed by the Municipality to assist in the implementation, enforcement and administration of the Coastal Management Programme and other Coastal Municipal bylaws. Furthermore, it will assist the Municipality to enforce other conditions such as the introduction of the soft engineering as recommended by the Living with coastal Erosion in KwaZulu Natal, a provincial policy.

9.4.9. The Coastal setback line

The coastal setback line refers to a line determined by an MEC in accordance with section 25 in order to demarcate an area within which development will be prohibited or controlled in order to achieve the objects of this Act or coastal management objectives. In most cases the coastal protection zone is a focal point for human activities including infrastructure like stormwater management, harbours, airports, road and rail networks, as well as being critical from a strategic and military perspective. Taking into account the inherent complexities of the coastal zone, it becomes clear that such an area requires specialised management efforts.

It can therefore be stated that a coastal set-back line refers to the prescribed boundary that indicate the limit of development along ecologically sensitive or vulnerable areas, or an area that poses a hazard or risk to humans. The coastal set-back line may even be situated outside the coastal zone. This line prohibits or restricts the construction, extension or repair of structures that are either wholly or partly seaward of the line (Celliers, *et al.* 2009). The intention of the coastal set-back line is to protect or preserve coastal public property; coastal private property; public safety; the coastal protection zone; and the aesthetics of the coastal zone

The development of the coastal set-back lines is the responsibility of the Provincial Department which must be done in consultation with the affected municipalities and interested and affected parties. Once determined this line must be delineated on the map or maps that form part of the municipal zoning scheme.

The coastal set-back is proposed to give specific direction in respect to locating the future development, whereas the coastal planning schemes will zone the coastline in respect to proposed activities and land use. Coastal set-back lines may be established for various reasons. For instance, one set-back line may be for an anticipated erosion set-back line, while another may relate to aesthetics and control the height of buildings to protect a specific scenic landscape.

The Coastal Setback line is not yet done within the Dokodweni area. An indicative line of 1km and 100km distance from High Water Mark has been indicated in the LAP (refer to the following map). The iLembe Environmental Framework indicates that the process of developing a set-back needs a careful consideration, due to the fact that if it done correctly it can assist in the management of sensitive environments within the existing built environment, mitigate loss of biodiversity, and prevent or limit damage to infrastructure through coastal erosion processes. Within this zone, management of wetlands and estuaries needs to be carefully managed to ensure ecosystem functioning is maintained. This should include compliance monitoring, mitigation measures, and where necessary rehabilitation. Similarly, dune systems and sand forests must be recognised as sensitive environments and the development constraints associated

with this assessed per development, e.g. within feasibility studies, specialist studies and the EIA process.

9.4.10. Existing and Future Programmes

9.4.10.1. The Blue Flag Programme

South Africa has joined the Blue Flag program in 2001 and became the first country outside of Europe to be awarded the right to implement the program. At the time the Department of Environmental Affairs and Tourism through the Marine and Coastal Management Section was responsible for the program and has put in place the Blue Flag as one of responses and vehicles to implement the requirements of the Government White Paper on Sustainable Coastal Development that came into effect in 2000.

The Blue Flag programme promotes sustainable development in freshwater and marine areas. It encourages the local authorities to achieve high standards in the four categories which are **water quality**, **environmental management**, **environmental education** and **safety**. Over the years, the Blue Flag has become a highly respected and recognised as an eco-label working to bring together the **tourism** and **environmental** sectors at local, regional and national levels.

It will very critical, going forward, for Mandeni Municipality to make attempts to integrate the Blue Flag with other initiatives taking place around the Dokodweni area. This should also include attempts to incorporate recommendations from the planning tools, such as the Coastal Management Plan (CMP), Coastal Access Plan, Estuarine Management Plan, Environmental Management Framework and Spatial Development Framework that are being developed and others finalised along the iLembe District in general and Mandeni coast specifically.

9.4.10.2. Launch Boat Club

Two public launch site exist within the Mandeni Municipality, which are Amatigulu and Tugela Mouth Public Launch Sites. Amatigulu Launch Site is located within the study area. The access, into the sea, of the club members is located along the lagoon. However at this point in time the launch site at Amatigulu has been closed and the permit withdrawn.

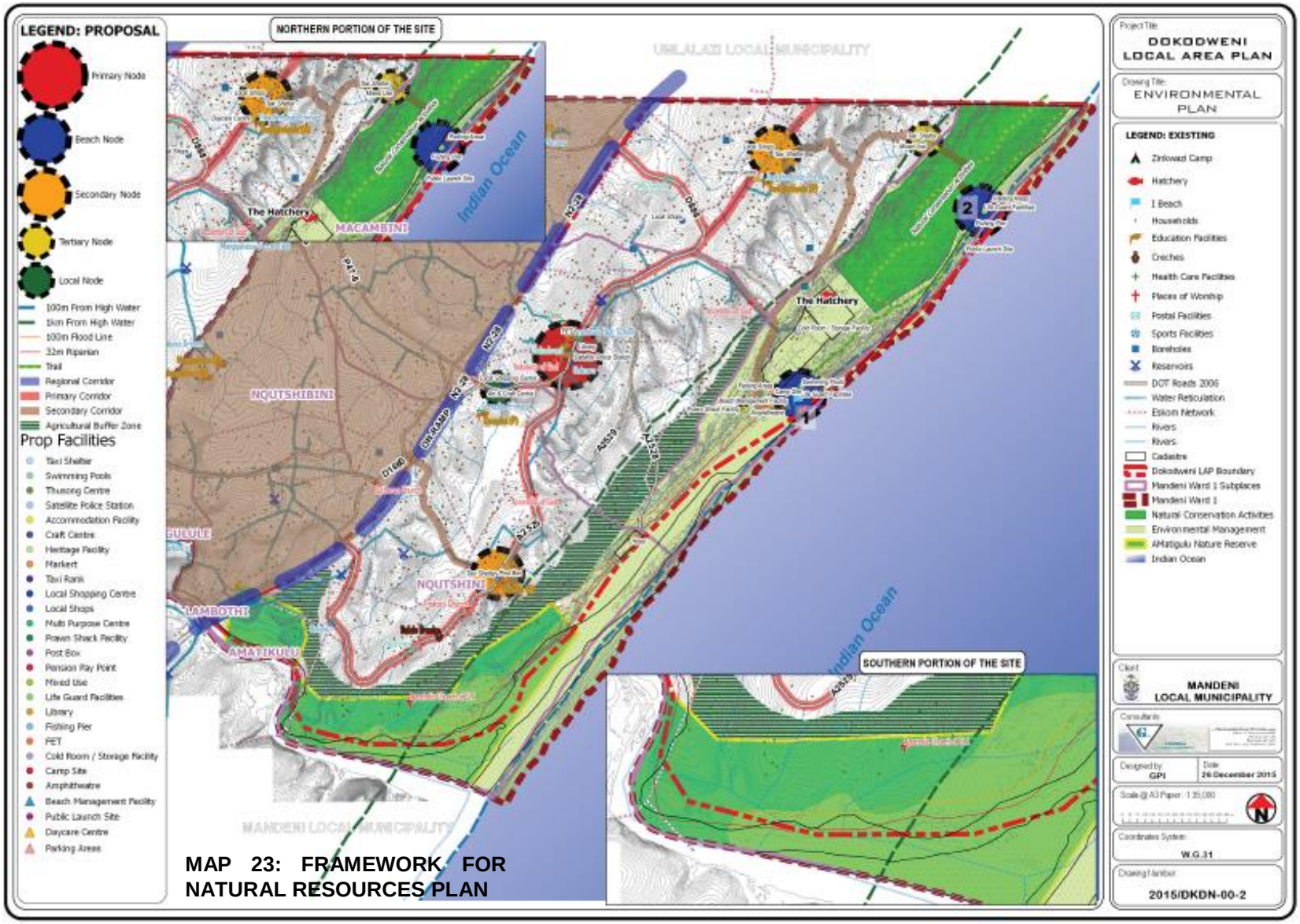
9.4.10.3. The Operation Phakisa

There is **Operation Phakisa** which appears to promote Aqua-culture along all the coastal areas. The plan needs to make provision for this programme. In line with the aforementioned, currently there is a permit issued to local people for subsistence Fishing which need to investigated further and be accommodated within the proposed plan.

There is a proposal (uMlalazi-Amatigulu Plan) by the Ezemvelo KZN Wildlife to develop some activities that links the Amatigulu Nature Reserve with the uMlalazi Nature Reserve. The proposed plan will consider this proposal by coming with in a number of activities possible in this area such as hiking trail etc.

9.4.10.4. Fishing in general

A fishing sport / facility will have to be identified within the plan to accommodate legal fisherman in the area. This should be accompanied by an area / site where fisherman can clean their catch.



MAP 23: FRAMEWORK FOR NATURAL RESOURCES PLAN

9.5. Social Facilities Framework

The social facilities framework is based on interpretation of previous related studies and consultation with various stakeholders, site visits and telephonic interviews. Social facilities are hallmarks of a settled and permanent population that has sufficient thresholds to support them. Accordingly, public investment should be limited in areas that are declining, but should be focused on growing, diversifying and well-located centres. The location of social facilities should adhere to the parameters outlined in spatial development frameworks, including:

- Clustering settlement, services, facilities and socio-economic opportunities around identified nodes to increase densities and support thresholds, thereby to improve equity, accessibility and efficiency.
- Nodes should function as service centres to rural communities as well as points of contact with other residents in the municipal area.
- Nodes should be located in close proximity to or alongside public transport corridors to facilitate accessibility
- Development should consciously promote the conservation of natural resources and rural character

The CSIR Accessibility Model was used to guide social facility backlog. The following tables were sourced from the CSIR Guidelines:

TABLE 33: CLASSIFICATION OF SETTLEMENT TYPES AND CATCHMENT SIZES

Hierarchy of settlements		Catchment size (No. of people)
A	Metropolitan cities/regions	>1 0000 000
B	Large cities/small metros	350 000 – 1 0000 000
C	Large towns/regional service centres	100 000 – 350 000
D	Small to medium towns/regional service centres	60 000 – 100 000
E	Small towns/isolated regional service centres	25 000 – 60 000
F	Dense dispersed settlements	10 000 – 100 000
G	Villages	5000 – 25 000
H	Remote villages	500 – 500 000

TABLE 34: SOCIAL FACILITIES REQUIREMENTS

FACILITY	POPULATION THRESHOLD RANGE	ACCESS DISTANCE	SIZE
Education			
Pre-School (Incl. Crèches & Day Care centres)	✚ Grade R (ECD) - 1 class per 1000 people; ✚ Creche (ECD) – 2400 – 3000 ✚ Resource Hub and Care Centre – 20 000 people	✚ Grade R (ECD) - 2km preferred, 5km; ✚ Creche (ECD) – 2km ✚ Resource Hub and Care Centre – 5km	✚ See National Department of Education guidelines for Primary Schools ✚ Creche small(capacity: 35 children younger than 5 years) ✚ Large (capacity: 35 – 150 children younger than 5 years)
Primary School	✚ 7 000 people (for large primary school); ✚ 1000 people for Settlement Type H	✚ 5km; ✚ 10km for Settlement Type H	✚ Minimum 2.8 ha (including sports fields); ✚ If sharing community sports fields – 1.4ha/two primary schools each of 1.4 ha and sharing sports ground of 2.0 ha – 4.8 ha; ✚ School size – 960 learners for threshold of 7000 people; ✚ Class size 20 - 30 learners – Grade R; ✚ 40 learners other grades
Secondary School	✚ 12 500 people (for large secondary school); ✚ 2500 people for Settlement Type H	✚ 5km; ✚ 10km for Settlement Type H	✚ Minimum 4.8 ha (including sports fields); ✚ If sharing community sports fields – 2.6 ha; ✚ School size – 1000 learners; ✚ Class size 40 learners
Special School	✚ Regional demand – needs driven, World Health Organization estimates between 2.2% to 2.6% of learners disabled or impaired	✚ Variable, preferably 20km – 25km	✚ Site sizes are larger than conventional schools to increase accessibility of the facility and the demand often residential facilities
Further Education & Tertiary Institutions (Excl. University)	✚ ABET and skills training : variable; ✚ Large tertiary institutions that are not universities: 400 000 people	✚ ABET and skills training : variable: 25km ✚ Large tertiary institutions that are not universities: 20km	✚ Very little documented information: site and facility size relate to demand, below are merely indicative
Library	✚ Local: 5 000 – 70 000 people	✚ Local: 8km – 10km ✚ Regional: 15km	✚ 0.05 ha (minimum 0.03ha) ✚ Varies depending on facilities provided and if stand-alone building.

FACILITY	POPULATION THRESHOLD RANGE	ACCESS DISTANCE	SIZE
	✚ Regional: 200 000 people		
Health & Emergency Facilities			
Clinic	Optimal 40 000 people (Range 5000 – 70 000 people. Largely for those not privately insured)	90% of population served within 5km	0.5ha (range 0.2ha – 1.0ha)
Community Health Centre	60 000 – 140 000 people	90% of population served within 5km	1.5ha
Fire Station	100 000 people (indicative only overriding factor is reach and density)	8 – 23 minutes response times. Response times and area risk classifications are major considerations for location of fire station	✚ 0.3ha suburban station ✚ 1.2ha regional headquarters
Police Station	60 000 – 100 000	8km urban/metro; 15km peri-urban; 24km rural and settlement Type E; settlement types F, G, and H subject to SAPS work study and requirements for the area.	0.1ha – 1ha
Social & Cultural			
Performing Arts Centre	50 000 people	10km – 15km	Site and purpose specific
Museum	✚ Small/medium museum: variable ✚ Large museum (the main collections): 500 000 people	✚ Small/medium museum: variable ✚ Large museum (the main collections): 30km	Site and purpose specific
Home Affairs Office	✚ 40 000 – 400 000 people	✚ 15km or less preferred; ✚ 25km maximum to at least one facility category	✚ 0.006ha (office space as part of Thusong centre) ✚ 0.02ha or larger if stand-alone building
Thusong centre	✚ 1 per Local Municipality	✚ 15km; maximum 25km	Varies depending on range of services offered and facilities provided; Thusong – minimum floor area of 0.06ha translates into site area of approximately 0.16ha – 0.2ha

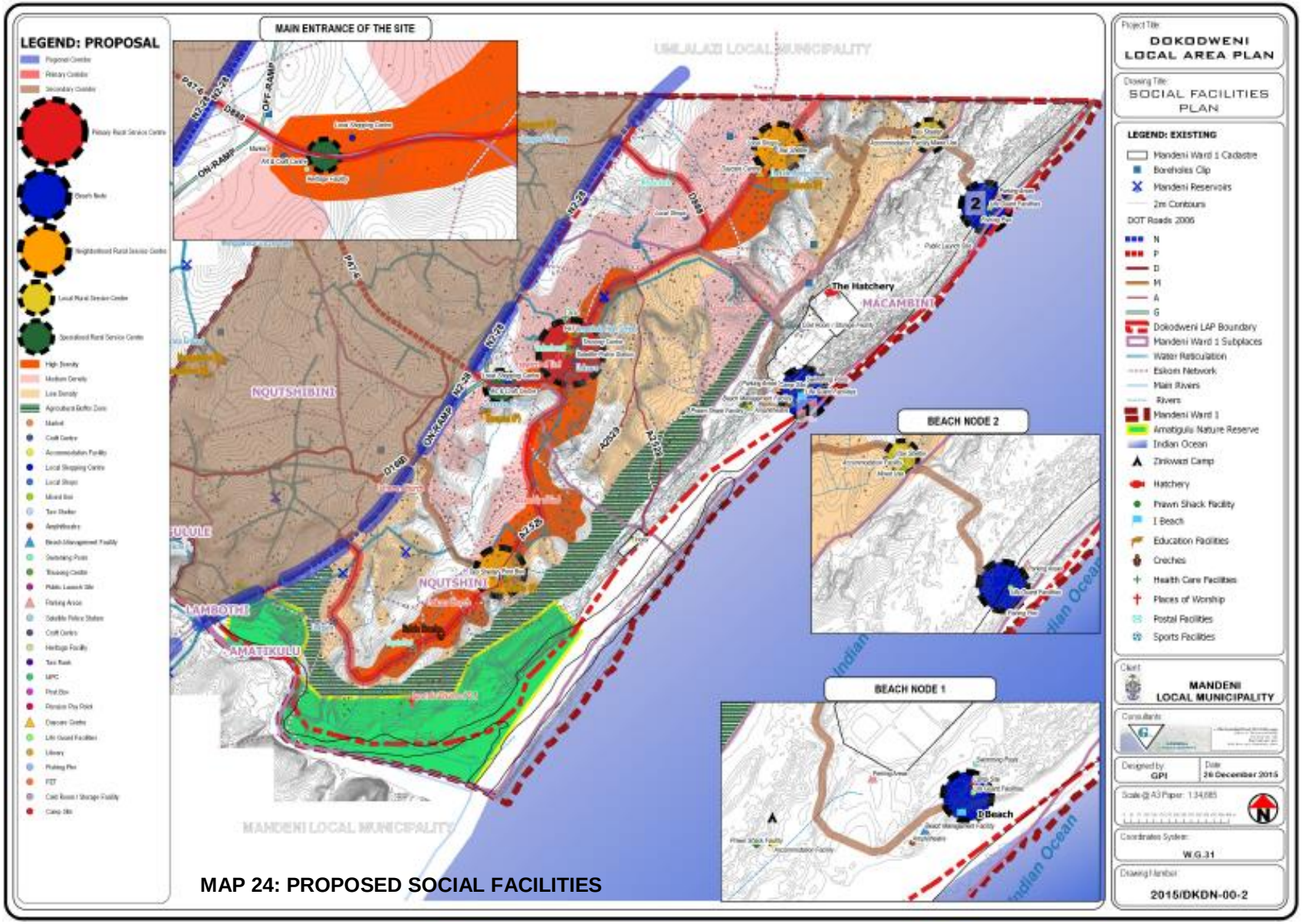
FACILITY	POPULATION THRESHOLD RANGE	ACCESS DISTANCE	SIZE
Cemetery	Large: 17.2ha/100 000 people Medium: 8.8ha/50 000 people; Small: 4.4ha/25 000 people Very small: 0.88ha/5000 people	✚ Large: 30km ✚ Medium: 15km – 30km ✚ Small and very small: 0.88ha/5000 people	
Orphanage	Variable		Varied: demand-driven; site specific (1ha – example)
Community Hall	10 000 - 60 000 people	✚ 10km – 15km ✚ 25km for Settlement Type G	0.2ha – 0.5ha
Old Age Home & Service Centre	Variable		Varied: demand-driven; site specific (2ha – example)
Worship	3000 – 6000 people	✚ Varies depending on demand; ✚ 2km typical maximum	0.15ha – 1ha
Post Office	10 000 – 20 000 people	✚ 5km – 10km ✚ 25km for Settlement Types H and G	0.01 ha office space/0.03ha land
SASSA	Variable	✚ 15km urban ✚ 20km peri-urban ✚ 40km rural	Variable, 42m² plus for office space or more. Pay Points may need a large area for queuing and / or waiting.
Local Market	5000 people	Variable	Varied demand-driven, site specific 0.02 – 4ha
Sport & Recreation			
Sport Field (Neighbourhood & Community)	3000 people	3km – 10km	0.23ha
Parks (Neighbourhood & Community)	3000 people	1km or 20 minutes' walk	0.3ha

The baseline information used for the social facilities framework was extracted from the previous Censuses. The population statistics

reflect that of Ward 1 of which the study area is located. The following table shows the existing social facilities against what is required according to the abovementioned guidelines:

TABLE 35: EXISTING FACILITIES VS REQUIRED

FACILITY	EXISTING	BACKLOG	STATUS
Pre-School (Incl. Crèches & Day Care centres)			
Primary School	4	0	Not needed as per guidelines
Secondary School	1	2	One each for Nqutshini and Mbizimbelwe
Special School	0	1	Investigation needed
Further Education & Tertiary Institutions (Excl. University)	0	1	Investigation needed
Library	0	1	Investigation needed
Clinic	1	0	Not needed as per guidelines
Community Health Centre	0	0	Not needed as per guidelines
Fire Station	0	1	Investigation needed
Performing Arts Centre	0	1	Investigation needed
Museum	0	1	Investigation needed
Home Affairs Office	0	1	Investigation needed
Thusong centre	0	1	Investigation needed
Cemetery	0	1	Investigation needed
Orphanage	0	1	Investigation needed
Community Hall	0	1	Mangqakaza Hall is also available
Old Age Home & Service Centre	0	1	Investigation needed
Worship	0	6	Investigation needed
Post Office	3 post boxes	1 Post Office	Investigation needed
SASSA	0	1	At least one pay point
Sport Field (Neighbourhood & Community)	7	0	Not needed as per guidelines
Parks (Neighbourhood & Community)	0	1	Investigation needed



MAP 24: PROPOSED SOCIAL FACILITIES

9.6. Economic Framework

The Economic framework will focus on interventions that will support the four sectors that were identified in the Status Quo namely Agriculture, Manufacturing, Tourism and Informal sector.

9.6.1. Agriculture

The study area is characterized by subsistence and commercial agriculture. Sugarcane is the main activity whilst subsistence agriculture is more focused on small-scale crop farming. The following are proposed activities which could assist in transforming this sector:

- Diversification of the agricultural sector is critical. In achieving this, emerging farmers need to be able to sell their products in the local market. Currently, goods are sold along the N2 near the Tollgate. It is therefore proposed that a fruit and vegetable market be established near the N2/D888 intersection. Agricultural buffer zone has been demarcated in between the natural vegetation and existing households. This can promote community gardens and izivande were communal farming can take place.
- Identification and fencing of grazing areas particularly along D888 accompanied by relevant infrastructure and veld management.

9.6.2. Manufacturing

Development of this sector will focus around rehabilitating the Amatikulu Hatchery. This is the main facility within the study area which has the potential to create job opportunities in the manufacturing sector. It should be noted that skills are in short supply within the study area and this sector relies upon labour intensive techniques. It is proposed that an FET be located at Dokodweni which could prove to be important in the growth of this sector. It is therefore proposed that the Hatchery be revitalized. Perhaps this could a phased approach. The renovation of cold rooms would assist local entrepreneurs who engage in fishing activities on the beach.

FIGURE 48: AMATIKULU HATCHERY

9.6.3. Tourism

There are various tourism opportunities within the study area which could be explored. However this would need to be linked to the programmes being done by the District municipality. One such programme is the King Shaka Route. Already there are existing accommodation facilities such as the Hatchery lodge/hotel, Zinkwazi Camp as well as the Prawn Shak which is a restaurant. The following are proposed tourism activities:

FIGURE 49: SCENIC BEAUTY IN NQUTSHINI

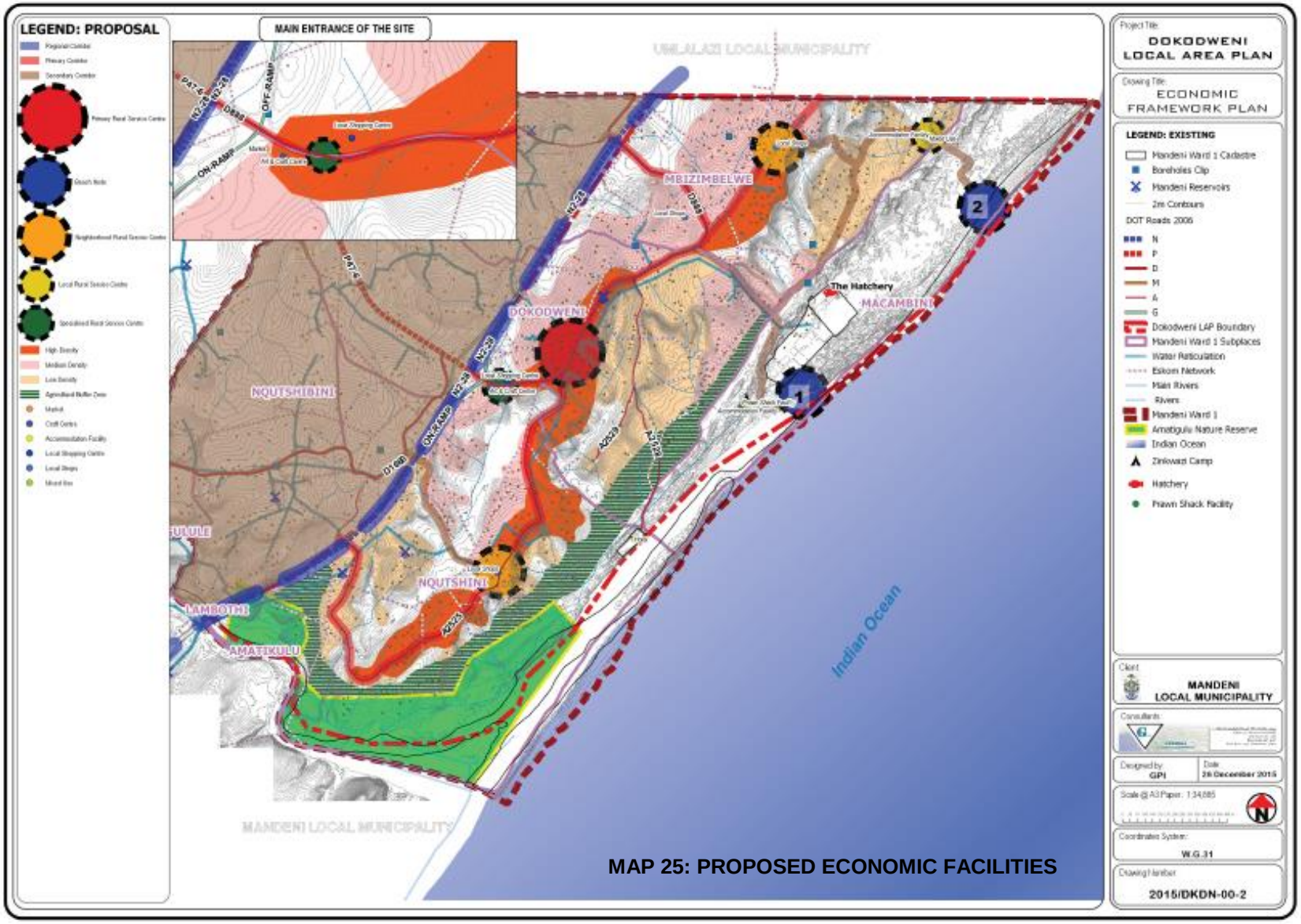
- Arts/Craft and Heritage Centre is to be located near the N2/D888 intersection. This will be the starting point of the African Beach Experience theme.
- Upgrading of the beach on the south of the coast. This beach is home to the iBeach festivities which usually occur during the festive time. It is proposed that an Amphitheatre, parking facilities, swimming pools, camp site, bathing facilities and camp site.
- Upgrading of the beach on the north and make provision for bathing facilities. Fishing activities occur on this beach therefore supporting facilities should be allocated. A Nature Game Reserve is proposed near this beach as well.
- Accommodation facilities in the form of holiday resorts are proposed in Mbizimbelwe which is approximately 15km away from the beach.
- The trail proposed at the conservation area is intended to align with the Siyaya Coastal trail and is located in the middle between existing trails in Amatikulu Nature Reserve and uMlalazi municipality.

9.6.4. Retail

Commercial and retail activities within the study area are limited to small tuck shops. It is proposed that such activities should be across the study area.

FIGURE 50: LOCAL SHOP NEAR N2

Local shops land uses are proposed in Nqutshini and Mbizimbelwe respectively as well as mixed uses. These areas will also locate shelters for public transport. A shopping centre is proposed near the N2/D888 intersection which will comprise of major retailers including supermarkets, ATMs etc.



MAP 25: PROPOSED ECONOMIC FACILITIES

9.7. Institutional Framework

9.7.1. Land ownership

The majority of land within the study area is owned by Ingonyama Trust and held in Trust by Macambini Traditional Council. Whilst the community understands and accepts this arrangement which has been in place for many years it comes with its own dynamics in terms of land management mechanisms and what the municipality can or can't do.

To date large scale developments within Ingonyama Trust land have been known to be through Rural Housing Subsidy approach.

Furthermore all housing developments currently allowed in land owned by Ingonyama Board do not translate into freehold titles but rather lease hold which is understood to replace Permission to Occupy (PTO) arrangement.

9.7.2. Land management

An attempt was made to meet with the Macambini Traditional Council to discuss issues relating to land management within the area. However at the time of preparing this report, that meeting did not materialize. Notwithstanding, we understand that land allocation in the study area is mainly the responsibility of the Traditional Council. The project team is of the view that there needs to be extensive training programmes to sensitize all role players involved in land allocation about their responsibilities.

In addition the analysis had identified the following challenges:

- Major challenges in the traditional allocation system include:
  - ⇒ Lack of cadastral data at a level below that of traditional leadership.
  - ⇒ Neither izigodi nor individual households are surveyed.
  - ⇒ The system is not codified, and this makes decision making inconsistent.
  - ⇒ There are no proper checks and balances to prevent corruption and allocation of sites in inappropriate areas.
  - ⇒ There is no register of all people who hold land and development rights.

In the light of the above the following programmes are strongly advocated:

- Training of ward committees
- Training of traditional leaders
- Establishment of structure that will ensure bilateral engagement with the municipality
- Provision of GPS to empower custodians of land.

10. SPATIAL DEVELOPMENT FRAMEWORK

The spatial development framework provides the basis of guidance for the provision of essential services and facilities within the study area. The study area has different settlement characteristics and different intensities in development and therefore the framework remains a broad guidance to address all this uniqueness.

The study area is further characterized by difficult (often steep) topography and poor access. These factors should be considered carefully in the provision of services and infrastructure.

From a spatial planning point of view the development framework is structured around the hierarchy of different development building blocks and structuring elements, particularly:

- Development corridors
- Development nodes
- Development intensities

The issue of the spatial elements defined at a project level vis-à-vis wider municipal level merely becomes a matter of level of planning. However there could potentially be different impacts exerted at these two planning levels.

The combination of various development potentials can trigger a number of locally driven initiatives. The development nodes and corridors can serve as essential markets for such initiatives, e.g.

- Craft / art work
- Various agriculture products
- Tourism related local initiatives
- SMME
- Facilities
- Shops, etc.

The Local Area Plan needs to earmark where such initiatives could be located.

10.1. Development Corridors

According to the Guidelines for the Formulation of SDFs (2011), “Corridors are links between nodes, along which an increased intensity of development will naturally be attracted and should be encouraged. Similar to nodes they improve access to opportunities. Corridors should provide an appropriate level of access to the opportunities along the corridor and would typically include public transport routes.”[21]

Whilst development corridors are strongly influenced by access and key roads, they can be defined as routes of highest intensity of activities that should be managed in a particular way. There are three levels of development corridors within the study area:

- Regional Corridor
- Primary Corridor
- Secondary Corridor

The following subsections will detail a clearer view of the corridors structure and make recommendations. Again, the TRH 26 is the document sourced for the classification of the road network hence corridors.

10.1.1. Regional corridor

In line with provincial planning policy, the Dokodweni LAP regards the N2 Highway as the Regional/Provincial Corridor. This is an important route in that it links the study area with major centres on the north and south of the Province such as Richards Bay and Durban. The N2 Highway is therefore important in terms of exposing the Dokodweni study area to holiday travellers and tourists coming from both the north and south of the Province. The King Shaka Airport is near the study area making it accessible through the N2. The N2 is also important in linking with the King Shaka Route (Route 66) which stretches from Gingindlovu to Pongola. The status quo describes the N2 Highway as a responsibility of National government. Therefore any upgrading or maintenance needed on this road is done by SANRAL.

The TRH26 defines roads similar to the N2 as Class 1 mobility routes. These routes carry countrywide traffic between:

- Rural principal arterials carry countrywide traffic between:
- • Metropolitan areas and large cities (population typically greater than about 500 000);
- Large border posts;
- Other Class 1 Arterials; and
- Smaller centres than the above when travel distances are very long (i.e. longer than 500 km).[22]

[21] Guidelines for the development of Municipal Spatial Development Frameworks 2011

[22] TRH 26

Indeed, the N2 is a continuous route which carries high traffic volumes. Therefore direct access to individual properties is not permitted on this route. In terms of its role in the study area, it serves as the point of entry where P47-6 (R66) joins from it through the Dokodweni Toll Plaza. As indicated above, R66 is best known as Route 66 which comprises of historic and legendary tourism attractions which is significant in this Province. Access requirements are already catered for and do not need to be adjusted. Should there be any adjustments needed, again the onus will lie on SANRAL.

Recommendations

The Mandeni SDF proposes the following public interventions for the management of this corridor:

- Constant Inter Governmental communication and coordination relating to the development of the provincial primary corridor and its impacts on the Mandeni Area.
- Developing a localised Corridor Development Strategy which will focus on spatial structure, infrastructure provision and attracting both public and private sector investment. [23]

10.1.2. Primary corridor

D888 is the main primary activity corridor in the study area. This route is the spine in which local access roads feed off from. According to the TRH26, roads similar to D888 are classified as Class 3 mobility routes. These routes carry inter-district between:

- Small towns, villages and larger rural settlements (population typically less than about 25 000);
- Smaller commercial areas and transport nodes of local importance that generate relatively high volumes of freight and other traffic in the district (public transport and freight terminals, railway sidings, small seaports and landing strips);
- Very small or minor border posts;
- Tourist destinations;
- Other Class 1, 2 and 3 routes.
- Smaller centres than the above when travel distances are relatively long (longer than 50 to 100 km). [24]

A closer view of this corridor suggests that there is a strong correlation between accessibility and settlements. Accessibility provided by this route seems to have attracted a number of settlements. This means there are many settlements located along this route compared to more inland. The assumption is that this trend is likely to continue in the foreseeable future. Therefore settlements located along this corridor should be prioritized for upgrading in terms of service delivery, road infrastructure, housing and development of higher order public facilities.

D888 is also a public transport route with high pedestrian movements including school children. Bus/taxi stop need to be provided in strategic locations with appropriate shelters and also pavements for pedestrians. There is also the situation of stray animals crossing the road. This raises safety concerns especially for

[23] Mandeni SDF

[24] TRH26

motorists/commuters. Safety precautions could explored including fencing, traffic calming etc.

Recommendations

- In Nqutshini it is proposed that D888 and A2525 join to form one continuous route which should enter/exit the study area linking with the neighbouring Ingulule area. In Mbizimbelwe there are two proposals for D888.
    - Firstly it should join with the access road which links with the neighbouring Umlalazi municipality. Currently there is commercial forestry within the immediate neighbouring land. However this proposal will ensure that future plans by Umlalazi are linked through this corridor for alignment purposes.
    - Secondly, it should continue towards the neighbouring Mangqakaza area.
- Surfacing and realignment of the corridor to measure 20m in width. The road reserve will be a four way carriageway with two lanes each travelling in opposite directions. Pavements should be accommodated on either side of the road which should be 2m in width.
- Traffic calming will be applied at the entry point of the corridor which should be in the form a traffic circle. This will be in the area where proposals such as the Shopping centre, market and Heritage centre are made.
- Provision of bus/taxi along this route within the area of Dokodweni.
- Fencing of grazing areas along this route.

10.1.3. Secondary corridor

There are three proposed secondary corridors. These include:

- The road from D888 to the beach (Dokodweni)
- The road from D888 to the fishing area (Mbizimbelwe)
- The road from D888 that passes over N2 (from Nqutshini)

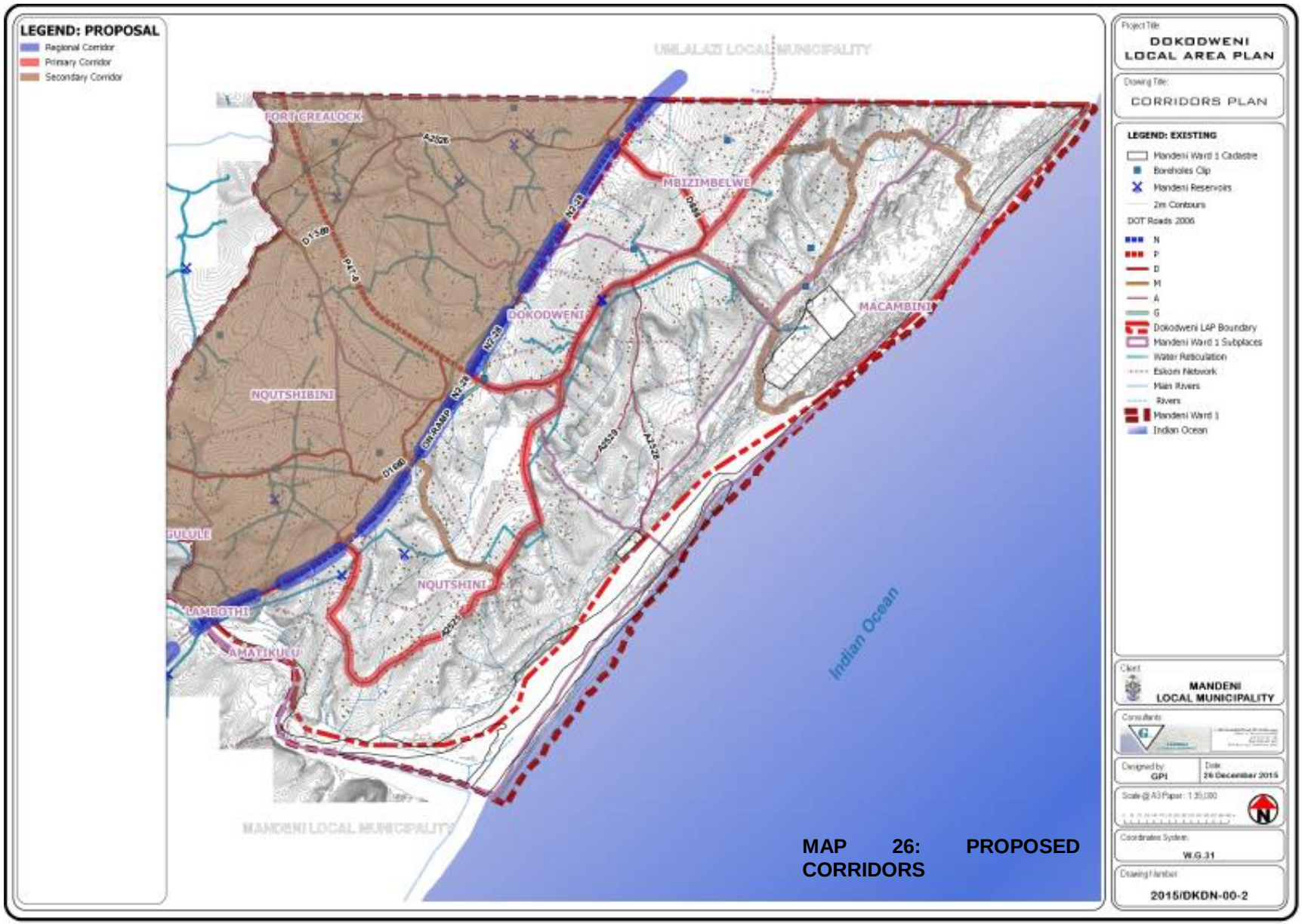
According to the TRH26, roads similar to these are classified as Class 4 access routes. These roads provide local access to settlements. They do not carry through traffic but only traffic with an origin or destination along or near the road. A collector road must never be quicker to use to pass through an area than the alternative mobility road.

These roads would typically give access to smaller rural settlements, tourist areas, mines, game and nature parks and heritage sites. The roads can also provide direct access to large farms. Collector roads can also be provided within larger rural settlements to provide a collector function in such settlements.
The length of these roads would mostly be shorter than 10 km. Traffic volumes should not be more than about 1 000 vehicles per day.

Recommendations

- Secondary corridors providing access to the coast are critical. There will be link roads between the accommodation facilities and the two beaches.
- Secondary corridors will measure 15m in width. Pavements should be allocated on either side measuring 2m in width.
- Trees or plants should be planted at the centre forming islands at appropriate standards.

- Upgrading and asphalt surfacing of all secondary corridors according to engineering standards.
- Proposed realignment is around 15m with a two-lane carriageway. Provision of pavement on either side.
- Road markings and appropriate signage where necessary.
- Traffic circles and crossing areas at various strategic points on the roads.
- Emergency lanes will be provided on the corridors providing access to the beaches.
- Access road along the beach will meander around the sand dunes. In certain areas a retaining wall should be considered to keep the sand at bay.



MAP 26: PROPOSED CORRIDORS

10.2. Development Nodes

According to the Guidelines for the Formulation of SDFs (2010), "These are areas where a higher intensity of land uses and activities will be supported and promoted. Nodal development improves efficiency as it provides easy access and creates thresholds for a variety of uses and public transport services."[25]

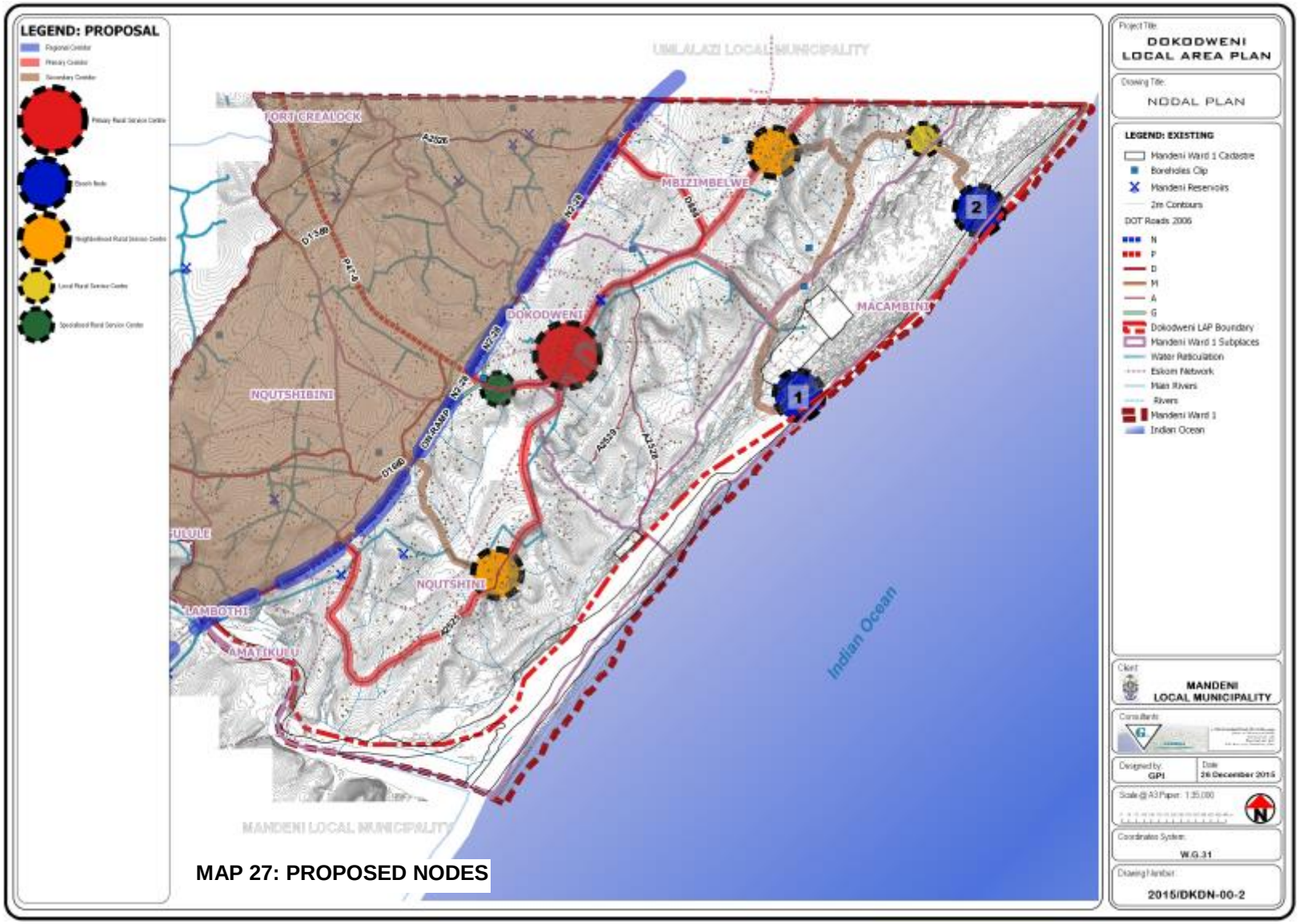
- Inevitably the development nodes are largely main centres (albeit at different levels) which are being fed by development corridors in terms of people and physical thresholds.
- Nodes are important points providing concentration of different activities.
- Again nodal points have a potential to expand in size based on different uses.
- Nodal points can be used to concentrate specific activities which could have a multiplier effect to a broader municipal area. Apart from this it can be far cost effective to put certain land uses together for both the supplier and the user in that other associated services could be found within a short radius.

Due to the fact that the study area is rural in nature, the application of the terminology and description of activities could differ from that of the urban context. The LAP identifies five tiers of nodes:

- Primary Rural Service Centre
- Neighbourhood Rural Service Centre
- Local Rural Service Centre
- Specialised Rural Service Centre
- Beach Node

In describing the abovementioned tiers, the following plan illustrates where the proposed nodes are located:

[25] Guidelines for the development of Municipal Spatial Development Frameworks 2011



MAP 27: PROPOSED NODES

10.2.1. Rural service centre

Context

The **Rural Service Centre** is the first level of planning in the LAP and may arguably be referred to as the Primary Node. The term “primary” is of course restricted to catchment size. Services provided at this level should be sizeable enough to serve the entire study area and surroundings. The location of the primary node within the study area should be such that it is easily accessible from transportation network.

Typical services or facilities that may be included here include:

- Thusong centre
- Mini Shopping centre
- Multi-Purpose Centre which incorporates -
  - Sports facility
  - Training facility
  - Arts craft or market stall
  - Administration
  - Telecentre
- Primary Health centre
- Main Library
- Police station
- Firefighting service
- Post Office
- Taxi rank

In terms of retail the size of land suggested is 1.5ha – 3.6ha. Recommended activities that could take place include:

- Petrol filling station
- Informal trade and markets (up to 50m²)26
- Activities related to food, clothing, furniture, anchor store, take-aways, and ATM facilities.
- Light industrial and manufacturing are also feasible in the primary rural service centre.

The rural service centre is suggested to locate at Dokodweni. It is suggested that the services provided here are not only municipal but also other tiers of government Existing facilities in this node include:

- Dokodweni Primary School
- Amatikulu Secondary school
- Yandisa Ulwazi Sewing Centre
- Dokodweni Clinic
- Recreational facilities

Recommendations

[26] According to Planning Guidelines for Retail Facilities in KwaZulu-Natal. KwaZulu-Natal Planning and Development Commission

It is proposed that the following land uses are considered here:

- Thusong centre which will comprise of:
  - Councillor office
  - Sports Indoor Centre
  - Information centre (Sizakala)
  - Pension Pay point
- Satellite police station
- Further Education Training (FET)
- Taxi rank
- Residential development will be high density estimated at 30du/ha.

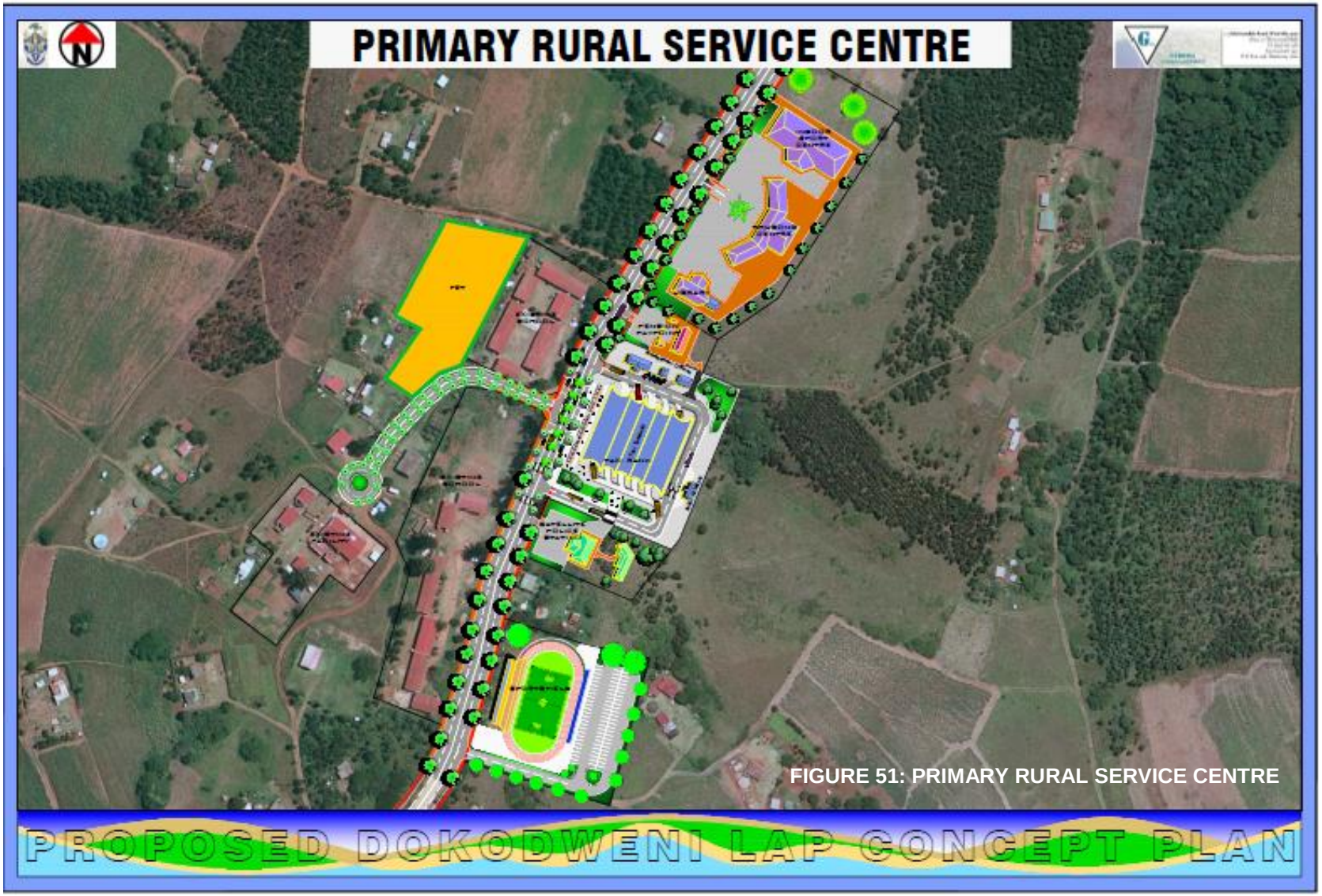


FIGURE 51: PRIMARY RURAL SERVICE CENTRE

10.2.2. Neighbourhood rural service centre

Context

The **Neighbourhood Rural Service Centre** is the secondary level of planning. The study area is spatially dispersed due to topographical conditions. In this project we suggest that the secondary nodes are the next level of catchment for service provision. Existing level of services are taken into account so that the level of nodes consolidates with services that are already there. As in the case of Rural Service Centre, this level of nodes should also support adjoining areas. These activity points are also located along the transportation route linking them areas which may be outside the study area. Thus the location of certain types of services and facilities within these nodes can also benefit Ingulule and Mangqakaza respectively.

The typical facilities and services to be provided here should include:

- Supermarkets
- Taxi rank
- Crèches/ preschools
- Community Hall
- Administration
    - Arts craft
    - Mobile stops
    - Telecentre
    - Cluster Boxes
- Mini Library

Recommended retail facilities include:

- Informal trade and markets (up to 50m²) and convenience stores with a variety of products sold such as food, clothing, fruit and vegetables, music and DVDs and electronic equipment.
- Light industrial and manufacturing are also feasible in the secondary node such as hardware stores and panel beating workshops.
- An agricultural hub is also recommended for potential location within the secondary node if there is substantial reason to locate it here.

There are two proposed Neighbourhood Rural Service Centre namely in Mbizimbelwe and Nqutshini.

The Neighbourhood Rural Service Centre a (*Nqutshini)* is also located along a mobility route at an intersection. Again, the intersection plays an important role for local residents either as a stop for public transport or to buy from the local shop.

The following facilities are present here:

- Shembe church
- Ebendle Primary School
- Ebendle Netball Ground

The Neighbourhood Rural Service Centre B (*Mbizimbelwe)* is located along a mobility route at an intersection. This intersection is important in that local residents gather either for public transport, to buy at the local shop (Thembitshe) or to fetch water delivered by water trucks with their containers.

The following facilities are present here:

- Thembitshe local shop
- Thekelimfundo Primary School (15km away)

Recommendations

The following facilities are proposed at Nqutshini:

- Local shops
- Taxi/bus shelter
- Daycare centre
- High density residential development estimated at 20-30du/ha.

The following land uses are proposed at Mbizimbelwe:

- Local shops
- Mixed Use
- Taxi/bus shelter
- Daycare Centre
- Medium to high density residential development estimated at 10-30du/ha.

10.2.3. Local rural service centre

Context

The **Local Rural Service Centre** is the third level of planning in the LAP. These nodes are relatively small and play a supporting and complementing role at the local level. These would generally be located in bus or taxi stops in area of intersection. In the context of the study area, this node will either support activities in the secondary or beach node.

The services should therefore include:

- Mixed Uses
- Recreation facilities
- Accommodation
- Spaza / local shops
- LED activities

This node is in Mbizimbelwe closer to the boundary and almost north of the study area. This area is currently an open space surrounded by settlement dwellings. This node is to play a supporting role to the Mbizimbelwe Neighbourhood node and also the beach node.

Recommendations

The following facilities are proposed here:

- Mixed use
- Accommodation facilities
- Braai areas
- Parking

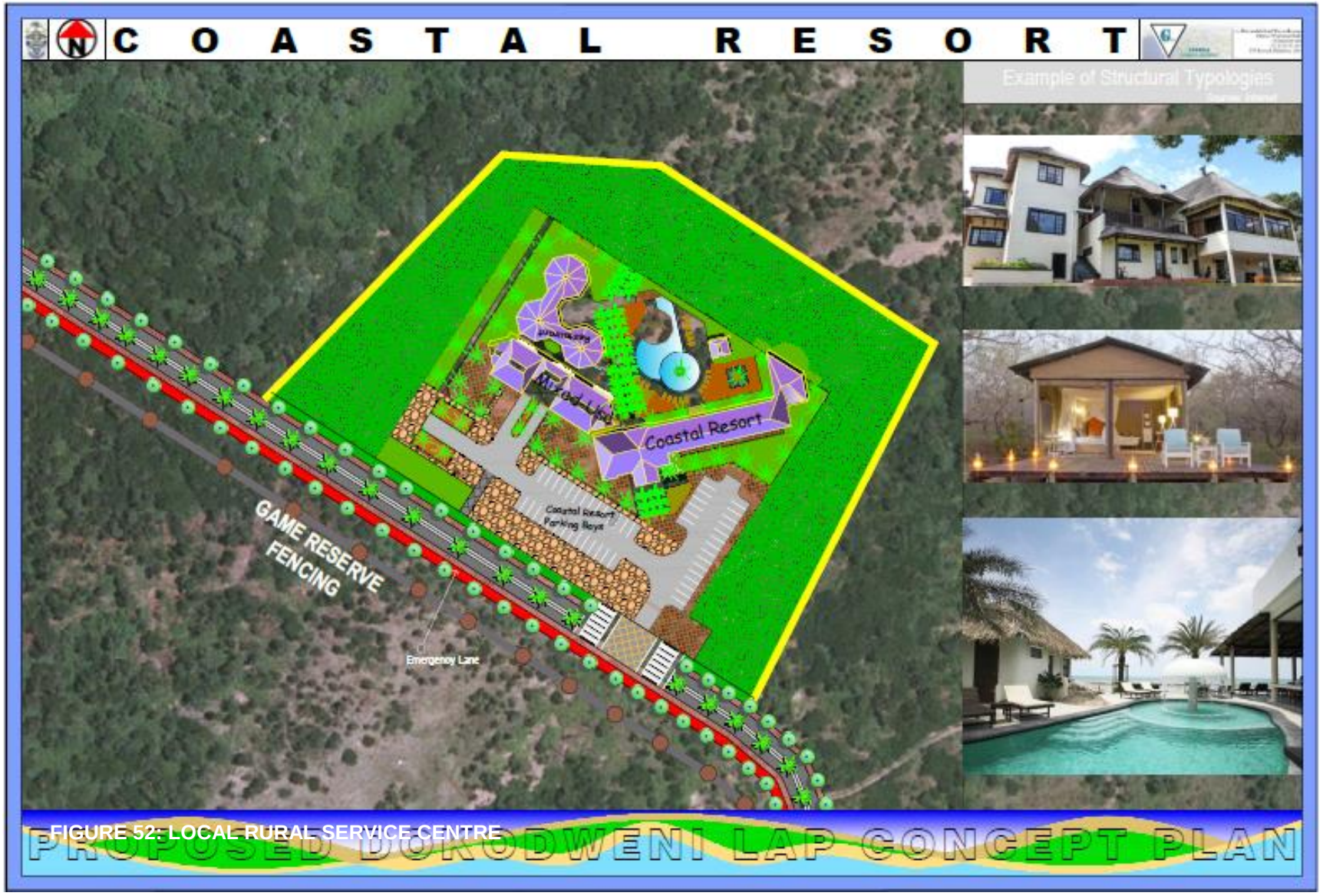


FIGURE 52: LOCAL RURAL SERVICE CENTRE

10.2.4. Specialised node

Context

The **Specialised Rural Service Centre** is proposed as the fourth level of planning for the LAP. This could be argued to be a quaternary node at best. However the term specialized in this context is used because facilities that will be located here should be more flexible. It has to be borne in mind that some areas might have the potential to attract investment but might not necessarily meet the commonly used requirements of locating a "node". The proposed specialized rural centre was driven by that thought process. Typical facilities would include:

- Shopping Centre
- Market
- Arts and Craft

The specialised rural service centre is suggested to locate at the N2 intersection. This node is specialized in that facilities located here are aimed at also serving vehicles passing through the N2 and residents from neighbouring areas. The idea here is to make use of the movement along the N2 and locate activities which will be better suited. Currently there are street vendors who sell vegetables particularly to vehicles passing through the N2. The proposed land is currently vacant. Also, this intersection is important as a starting point of portraying the African Village experience. Therefore activities located here should introduce the theme. The proposed site is currently vacant. However there are street vendors who sell vegetables to people passing by through the N2.

Recommendations

The following facilities are proposed here:

- Fruit and vegetable market
- Arts and Craft Centre
- Heritage Centre
- Local Shopping Centre

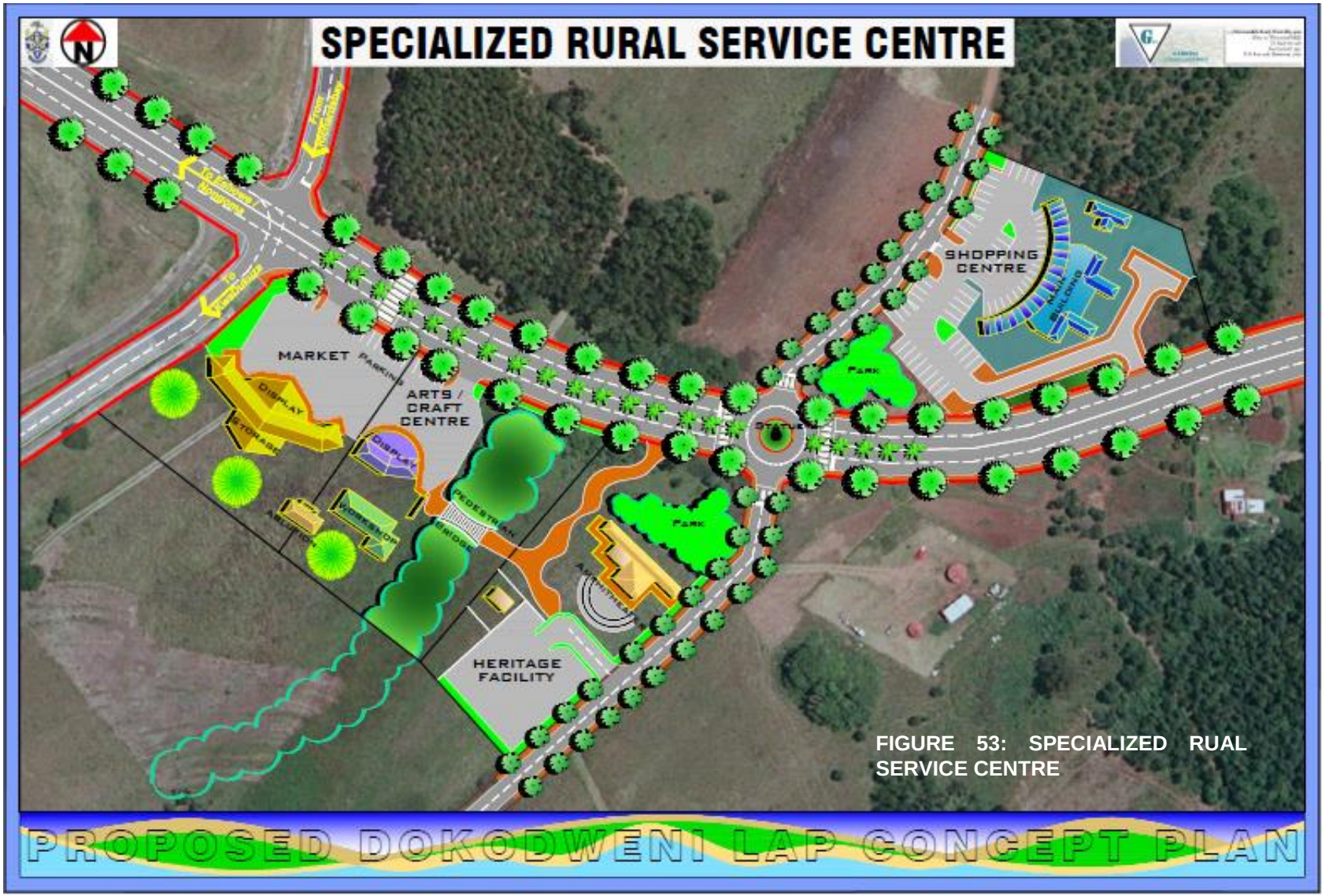


FIGURE 53: SPECIALIZED RUAL SERVICE CENTRE

10.2.5. Beach node

Context

The Beach nodes are the primary level for tourism planning within the study area. Facilities located here should complement activities undertaken at the beaches. There are two proposed Beach nodes in the study area namely Beach node 1 (South Beach) and Beach Node 2 (North Beach).

FIGURE 54: BEACH SIGNAGE

Proposed *Beach Node 1* is the beach located at the south west of the study area. This beach is the one used as a catalyst to attain Blue Flagship status as indicated in the status quo. It currently boasts the hosting of the iBeach Festival which attracts musical artists and people around the Province and beyond. The festival is held on an annual basis during the December festive season. The open space in front of the lagoon is used to accommodate the numbers of people who come to enjoy the festival. The stage where artists perform is a temporary structure which is embedded in the water when erected. This type of platform is not sustainable for the foreseeable future for such types of events. The following diagram illustrates:

FIGURE 55: iBEACH ARTIST PLATFORM

Local people also meet here and hold their own gatherings singing “Ingoma”. The beach is also used for swimming activities. However it is noted that a number of incidents have been reported about people disappearing on suspicions of drowning and being recovered on another day. The municipality has since put in place a temporary

lifeguard facility aimed at assisting people in need of help in emergency situations. There are also cases of mugging and robberies that happens during festivities. This raises safety and security surveillance concerns. In terms of security, the South African Police Service (SAPS) assists however more needs to be done. Existing facilities within this node include:

- Prawn Shak
- Zinkwazi Camp
- Lifeguard office
- Ablutions
- Braai areas with shelters

FIGURE 56: ABLUTIONS

FIGURE 58: PRAWN SHAK

FIGURE 57: LIFE GUARD FACILITY

Recommendations

The **general access** road will have two lanes running in opposite directions. The road reserve will be 15m and 2m pavements. A temporary boom gate should be erected at the entrance to control traffic especially during the peak times of the year where there is more movement of people and vehicles. The existing boom gate is too close to proposed activities and will not be effective.

Two **traffic circles** are proposed to slow down traffic. These traffic circles will have high masts which will be operated by solar power.

An **emergency lane** will be demarcated in red to allow emergency vehicles right of way. During events, emergency situations are possible therefore this lane will be reserved and opened only in the case of emergency. **Pedestrian crossings** will be demarcated at strategic sections of the road. These are proposed before and after the traffic circles near:

- Zinkwazi camp and Prawn Shak
- Swimming pool area
- Amphitheatre
- Shops

An **access road** is proposed to run parallel to the beach. This road is informed by the existing road trail which is currently visible within this area. The current state of this road consists of beach sand which make it difficult for private cars to access other parts of the beach. Therefore the proposal is to improve the existing road. It is also proposed that a gabion **retaining wall** is built along this road to prevent sand from falling onto the road. This area is characterised by a number of sand dunes which play a role in protecting the inland and they act as a buffer to sea movement. Therefore, the idea is not to destabilise the current ecosystems and natural processes but to promote development that will conform to existing environmental features. The sand falling onto the gabion will infiltrate hardening the wall.

Open parking and **camp site** are proposed in the inland area. This area is relatively flatter than the area along the beach which is characterized by dunes. Both these spaces will not be hardened. Therefore parking bays will not be demarcated. However it is recommended that an assessment is established to determine its feasibility, based on biodiversity, linkage and coastal management issues.

A permanent **amphitheatre** structure is proposed the iBeach is currently held. This structure can also be used by local people for their own gatherings. The structure is proposed inland as opposed to the temporary structure that is normally entrenched in the water. It will comprise of a staircases due to the stage being at an upper level, shelter and change rooms behind. It is noted that the proposed construction of the permanent platform should be informed by an environmental management plan to ensure that the impacts are adequately mitigated during the event.

Swimming pools are proposed on this beach to allow those visitors interested in swimming. Whilst this beach is not endorsed to be a swimming beach, the swimming pools will provide that alternative. There will be pools for children and adults with offices for supervisory office. Ablutions and change rooms are proposed across the swimming pool which will be accessed through pedestrian crossings. For drainage, it is proposed that relative piping should connect with the existing Hatchery drainage system to limit costs.

Life guard offices and offices which could be utilised for security personnel are proposed at the centre near the traffic circle. This will allow life guards to be close to the swimming pools. A small **shop** is also proposed within the same vicinity.

Beach Park is proposed which will consist of temporary umbrella structures and braai stands. There are existing shelters and braai stands within this area. More modern options could be assessed.

The following plan illustrates proposed Beach Node 1and its proposals:

FIGURE 59: BEACH NODE 1

Beach Node 2 is located at the north west of the study area. This beach is more favourable for providing a better swimming experience than the one on the south. It is proposed that swimming activities occur on this beach due to its beauty, flatness making it friendly for swimming. There are currently people who are engaging in illegal fishing activities. The main challenge is accessibility to the beach. The access road is in need of upgrading as it is inaccessible through vehicles.

Recommendations

It is proposed that the **access road** the beach be upgraded and surfaced with asphalt or tar. This road will have two lanes running (one lane running opposite of each other). The road reserve should measure 15m with 2m pavements. The road will also meander so as to utilise spaces between sand dunes. The **retaining wall** will be built along sand dunes to prevent sand from falling onto the road. This would be in the form of gabions to ensure that if sand infiltrates the wall it remains intact within the stones. This will also lead to a natural wall. **Traffic calming** will be in the form of traffic circles. Two traffic circles are proposed within this sub-area which will have high masts operated by solar power. **Pedestrian crossing** will be marked before and after these traffic circles. **Parking** will be in three designated spaces. These parking spaces are situated between natural vegetation so will therefore not be hardened to avoid surface run off and negative impact on the environment. An **emergency lane** will also be demarcated in red to allow for emergency vehicles such as ambulances to pass.

Life guard office will be erected along the road so that equipment is easily accessible. Temporary lifeguard structure will be placed along the beach for surveillance. Ablutions and showers will be located across the lifeguard office. Pedestrian crossing will provide access for pedestrians. Shops will be located across the showers to provide refreshments for people who may need them.

A **Fish pier** will be erected for existing fishermen. Whilst there are processes that need to be followed when obtaining a fishing licence, this pier will assist fishermen reaching deeper. It will be long in that it will be built from the parking lots onto the sea shore. Staircases will be available halfway for people who may want to access the beach shore from the pier. The elevation will also be high allowing for people walking on the shore to pass under. It will be critical that environmental authorisation is obtained for such a development so as to establish the impact it would have on sand movement along the intertidal area and within the sea, as well as on wave action. An EIA process could assist in that a feasibility study could be conducted to ascertain the impacts.

Nature Reserve Activities are proposed within the vicinity of the beach for conservation of the natural vegetation. As indicated in Sub Area D, a Nature Game Reserve was proposed here which was going to comprise different animal species. This will ultimately lead to the area being fenced so as to protect the animals inside. This would cause limitations in access to such area and a range of other issues which would need to be the satisfaction of Ezemvelo KZN Wildlife such as the size of the Nature Reserve. Nonetheless, it is thereby proposed that Nature Reserve activities are promoted in this area. Such Game Reserve activities could accommodate visitors of all ages such as game viewing, birding, outdoor sporting *activities* and overnight trails, as well as youth camping facilities. This type of development would require thorough consultation and might trigger

the EIA process and the preparation of feasibility studies to ascertain the type of activities that could be conducted.

A **trail** is also proposed within the conservation area which is intended to link with the Siyaya trail into uMlalazi municipality. This trail is demarcated on the plan and will ensure alignment between Dokodweni and uMlalazi municipality future planning.

A **Coastal resort** is proposed opposite the Game Reserve approximately 15 minutes' walk away from the beach. The resort will provide accommodation and hospitality services to people visiting the beach. This will include mixed uses, restaurant and parking bays.

The following plan illustrates Beach node 2 and its proposals:

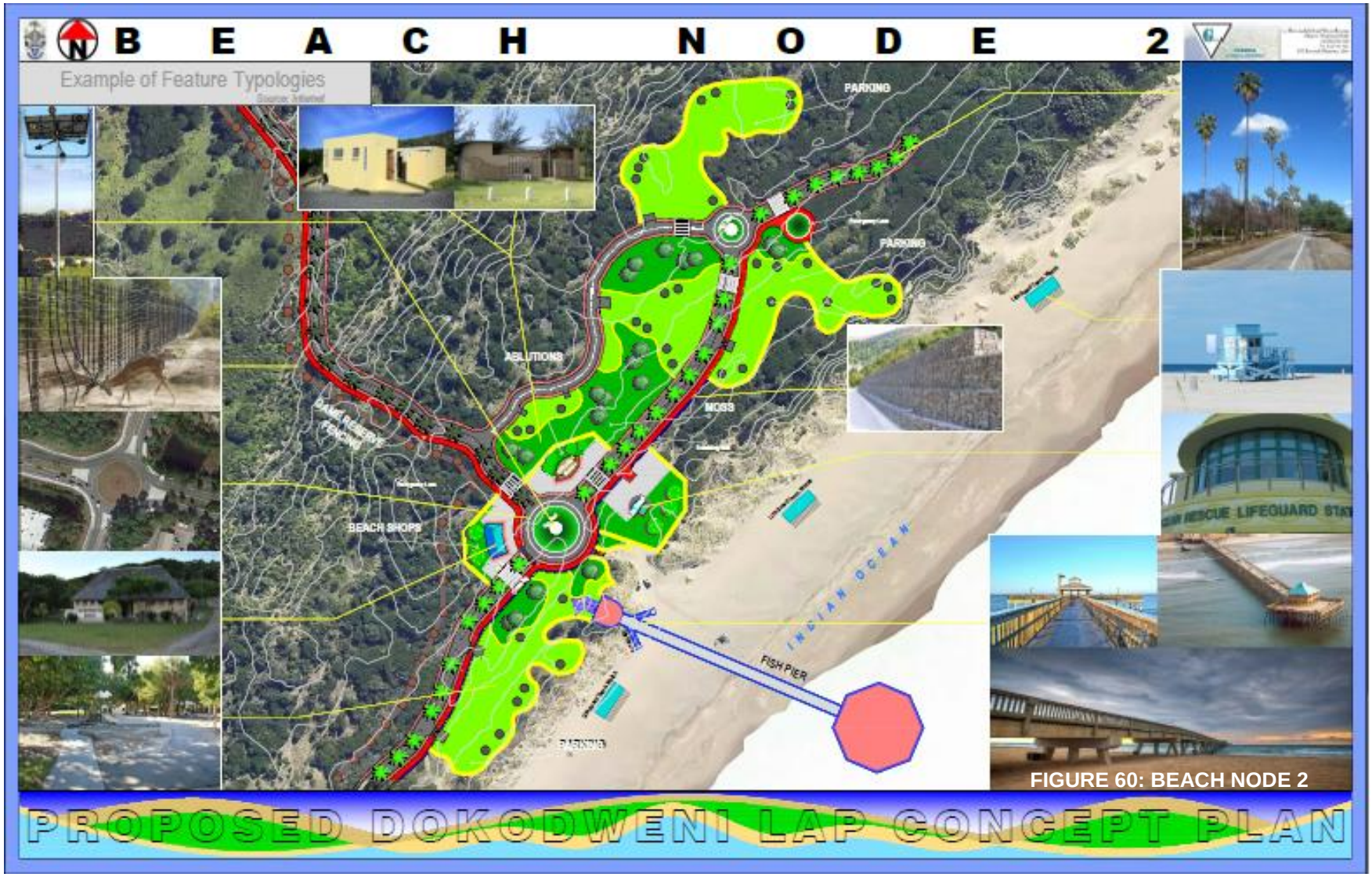
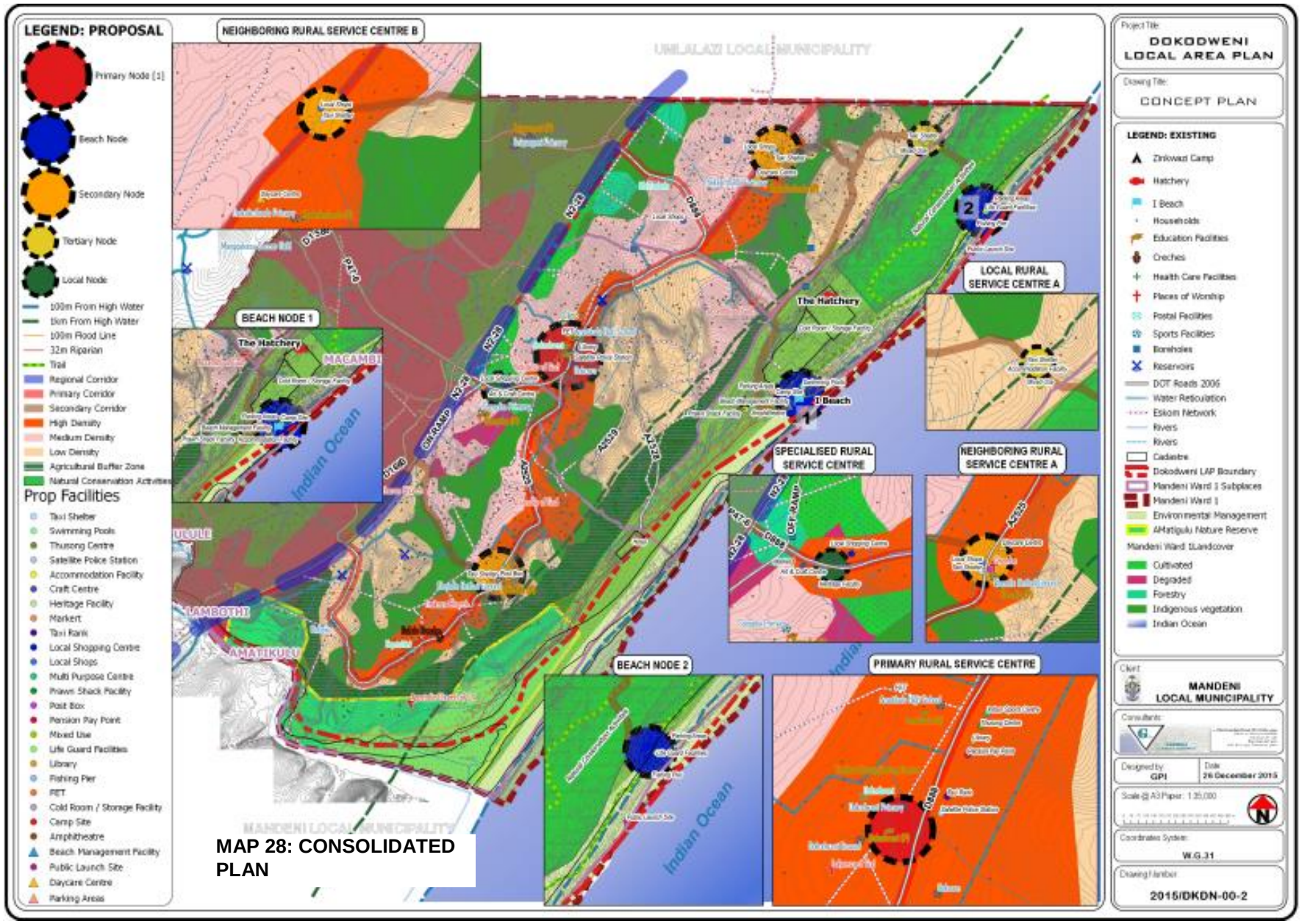


FIGURE 60: BEACH NODE 2

10.3. CONSOLIDATED LOCAL AREA PLAN

The following plan is a consolidated plan which shows all existing and proposed activities within the Dokodweni study. It is a proposed conceptual framework:



MAP 28: CONSOLIDATED PLAN

11. IMPLEMENTATION PLAN

For any planning process to be successful it requires implementation of projects. The availability of funding will therefore play a major role in determining the roll-out of the various projects. The reality is that Mandeni municipality might not have the necessary funding that is required to undertake these projects. Therefore it will be necessary to seek external funding from other sources as well. Regardless of the source of funding, the internal departments within municipality will be responsible for coordination of project activities that fall within their mandates.

The implementation plan proposes implementation at different periods namely:

- short term – 1 to 3 years
- medium term- 3 to 5 years
- long term- longer than 5 years

As indicated, the **traditional leaders** are responsible for land allocation in the study area. The project team is of the view that there needs to be extensive training programmes to sensitize all role players involved in land allocation about their responsibilities.

In the light of the above the following programmes are strongly advocated:

- Training of ward committees
- Training of traditional leaders
- Establishment of structure that will ensure bilateral engagement with the municipality. Such committee will assist in the monitoring of working relationship with the municipality.

In relation to the **facilities** there needs to be establishment of small local committees that will see to the maintenance and management of the community facilities.

No	Period	Project Description	Development type	Location	Source of funding	Responsibility
1.	Long term	Development, surfacing and realignment of road D888 with appropriate pavements.	roads and transportation	LAP wide	To be confirmed	Technical services & Infrastructure
2.	Medium term	Development, surfacing and realignment of the road to Beach Node 1 with propose pavements and landscaping.	roads and transportation	Beach node 1	To be confirmed	Technical services & Infrastructure
3.	Medium term	Development, surfacing and realignment of the road to Beach Node 2 with propose pavements and landscaping.	roads and transportation	Beach node 2	To be confirmed	Technical services & Infrastructure
	Medium term	Development, surfacing and realignment of the road to the Hatchery Accommodation.	roads and transportation	Nqutshini/Hatchery accommodation	To be confirmed	Technical services & Infrastructure
4.	Medium term	Surfacing of the road to the Hatchery facility	roads and transportation	Hatchery facility	To be confirmed	Technical services & Infrastructure
5.	Medium to long term	Development of traffic circles on D888 and roads along the beach.	roads and transportation	LAP wide	To be confirmed	Technical services & Infrastructure
6.	Medium to long term	Erect a symbol or statue that will define the area of Dokodweni at the traffic circle within D888. High satellite masts can be erected on the other traffic circles.	roads and transportation	LAP wide	To be confirmed	Technical services & Infrastructure
7.	Medium term	Development of a Taxi/Bus rank with associated management offices	roads and transportation	Primary Rural Service centre	To be confirmed	Technical services & Infrastructure
8.	Medium term	Erect Taxi/bus shelters at strategic areas	roads and transportation	LAP wide	To be confirmed	Technical services & Infrastructure

9.	Short term	upgrade boom gate at Beach node 1	roads and transportation	Beach node 1	To be confirmed	Technical services & Infrastructure
10.	Long term	Provision of parking at Beach Node 1 and 2	roads and transportation	Beach node 1 & 2	To be confirmed	Technical services & Infrastructure
11.	Medium to long term	Designation of Camp site	roads and transportation	Beach node 1	To be confirmed	Technical services & Infrastructure
12.	Long term	Construction of new waterborne sewer at certain parts of the study area	infrastructure	LAP wide	To be confirmed	Technical services & Infrastructure
13.	Long term	Upgrading of the water system in certain parts of the study area including: Installation of piped water	infrastructure	LAP wide	To be confirmed	Technical services & Infrastructure
14.	Long term	Electricity connections at certain parts of the study area where new developments are to take place	infrastructure	LAP wide	To be confirmed	Technical services & Infrastructure
15.	Short to medium term	Street lighting particularly along the beach	infrastructure	Beach node 1 & 2	To be confirmed	Technical services & Infrastructure
16.	Long term	Development of a drainage system in line with the development of new roads.	infrastructure	LAP wide	To be confirmed	Technical services & Infrastructure
17.	Medium to long term	Development of a Thusong centre with associated councillor office	social facilities	Primary Rural Service centre	To be confirmed	Community service & public safety
18.	Medium to long term	Development of an Indoor sports centre	social facilities	Primary Rural Service centre	To be confirmed	Community service & public safety
19.	Medium to long term	development of a library	social facilities	Primary Rural Service centre	To be confirmed	Community service & public safety

20.	Medium to long term	Development of pension pay-out offices	social facilities	Primary Rural Service centre	To be confirmed	Community service & public safety
21.	Medium to long term	Development of a satellite police station	social facilities	Primary Rural Service centre	To be confirmed	Community service & public safety
22.	Medium to long term	Development of an FET	social facilities	Primary Rural Service centre	To be confirmed	Community service & public safety
23.	Long term	Upgrading of the sportsfield	social facilities	Neighbourhood Rural Service centre	To be confirmed	Community service & public safety
24.	Medium to long term	Development of a day-care centre	social facilities	Neighbourhood Rural Service centre	To be confirmed	Community service & public safety
25.	Short term	Development of a fruit and vegetable marketplace	economic	Specialised node	To be confirmed	Community service & public safety
26.	Short term	Development of a Heritage centre	social facilities	Specialised node	To be confirmed	Community service & public safety
27.	Short to medium	erection of children and adult swimming pools	leisure and entertainment	Beach node 1	To be confirmed	Economic development, Planning and Human settlements
28.	Short to medium	provide appropriate shelters and braai stands	leisure and entertainment	Beach node 1	To be confirmed	Economic development, Planning and Human settlements
29.	Short to medium	development of life guard and management offices	social facilities	Beach node 1	To be confirmed	Community service & public safety

30.	Short to medium	provide ablution facilities	social facilities	Beach node 2	To be confirmed	Community service & public safety
31.	Short to medium	provide life guard stands for surveillance	social facilities	Beach node 2	To be confirmed	Community service & public safety
32.	Short to medium	development of a fish pier	social facilities	Beach node 2	To be confirmed	Community service & public safety
33.	Short to medium	upgrading and improvement of the hatchery facility	economic	Hatchery facility	To be confirmed	Economic development, Planning and Human settlements
34.	Short to medium	upgrading and improvement of the Zinkwazi Camp	economic	Beach node 1	To be confirmed	Economic development, Planning and Human settlements
35.	Long term	Undertake Awareness campaigns including: Development of programmes Appointment of environmental champions Implementation of programmes	environment	LAP wide	To be confirmed	Community service & public safety
36.	Long term	Conservation of environmentally sensitive areas including: Further studies to environmental areas identified in the concept Fencing and demarcation Facilitation of establishment of local committees to oversee identified sites	environment	LAP wide	To be confirmed	Community service & public safety
37.	Long term	Greening and landscaping including: Rehabilitation programme	environment	LAP wide	To be confirmed	Community service & public safety

38.	Long term	Alien plant eradication	environment	LAP wide	To be confirmed	Community service & public safety
39.	Medium term	Preparation of the Matigulu/Nyoni Estuarine Management Plan	environment	LAP wide	To be confirmed	Economic development , Planning & Human Settlements

12. REFERENCES

1. National Development Plan 2011
2. National Development Perspective 2006
3. Spatial Planning and Land Use Management Act 2013
4. Ilembe District Regional Spatial Development Plan 2013
5. Mandeni Integrated Development Plan 2015/16
6. Mandeni Local Economic Development Plan 2014
7. Mandeni Spatial Development Framework 2015
8. www.sanews.gov.za/south-africa/nationaldevelopmentplan-unpacked; Accessed 11 June 2015
9. http://durbannorthcoast.getitonline.co.za/2013/11/25/decembers-hottest-party-returns-kzn/#.VZz3R_mqqko; Accessed 11 June 2015
10. www.tongaat.co.za/imc/annual_reports/.../**casestudy**_kwamthethwa.pdf; Accessed 11 June 2015