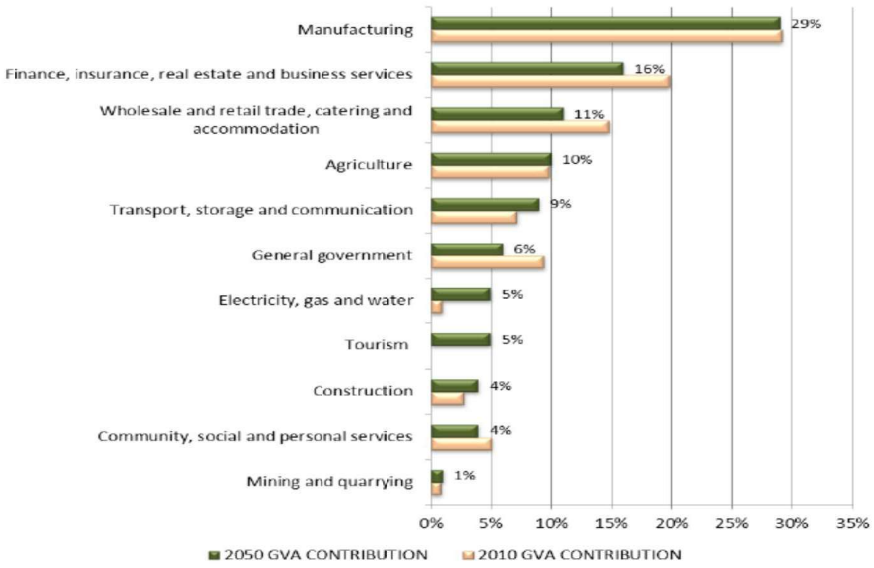
- Establish and promote PPPs.
- Establish cooperatives to maximise economic opportunities in the agricultural sector.
- Regularly maintain and upgrade existing infrastructure.
- Promote cultural and community based tourism.
- Promote integrated tourism development.

6.8.3 Strategic Thrusts: Environmental Sustainability Strategies

- Preserve and protect the natural environment through the application of appropriate conservation management.
- The protection of natural water resources.
- The maintenance and preservation of a pristine environment.

Figure 14: Strategic Thrusts: Environmental Sustainability Strategies



Source: Black Balance Projects

7. SPATIAL DEVELOPMENT STRATEGIC FOCUS

The Spatial Development Framework Concept integrates the spatial planning directives identified and translates it into a spatial vision for the city. The Spatial Development Concept is structured around the following building blocks which are interrelated:

1. Development Corridors
2. Nodes and Activity areas
3. Natural Environment

7.1 DEVELOPMENT CORRIDORS

The major structuring element for determining the existing and future concentration of development, activity and investment in the Mandeni Municipality consists of an access and movement hierarchy that has been established through the major internal and external national and provincial linkages, including the N2 and the R102.

7.1.1 Regional Development Corridor

Identification of the Corridor

As indicated before, the Provincial Spatial Economic Development Strategy has identified the N2 route between uMhlathuze and eThekwini as a primary provincial corridor. In support of this route the R102 practically serves a regional development corridor within municipalities along this route. This is mainly due to the fact that no direct accesses onto the N2 from potential developments are envisaged and the result in other areas such as KwaDukuza has already been that developments cluster along the R102 for localised and regional access and in close proximity to the N2 route.

Management Strategies and Public Interventions

Public interventions envisaged in this area relate to:

a) Constant Inter Governmental communication and co-ordination relating to the development of the provincial primary corridor and its impacts on the Mandeni Area.

b) Developing a localised Corridor Development Strategy which will focus on spatial structure, infrastructure provision and attracting both public and private sector investment.

7.1.2 Activity Corridor

Identification of the Corridor

The P415 is identified as a municipal wide activity corridor crossing over N2, linking the coast and the hinterland; it runs from east-west linking the Tugela Mouth Service Centre and Mandeni/ Sundumbili Primary Node. From the primary node the activity corridor diverge from the P415 in a northern direction along the MR459, passing isiThebe towards Nyoni and Amatikulu.

The Spatial Development Framework plan illustrates that this activity corridor is characterised as a mixed use development corridor linking all the different land uses and development areas within the municipality while provided excellent access to the R102 and N2. The promotion and development of this activity corridor as the vital spine to this municipality cannot be understated.

Management Strategies and Public Interventions

Public interventions envisaged in this area relate to:

a) The upgrading of the roads along the corridor. Currently the P415 from the N2 to the east coast is gravel it is therefore of a strategic importance that this road is upgraded to black top as means to support the development aspiration as set out in the Siyaya Coastal Development Framework Plan.
b) Developing a localised Corridor Development Strategy (including both the regional corridor and activity corridor) which will focus on spatial structure, infrastructure provision and attracting both public and private sector investment.

c) Ensure multimodal transport integration occur along this route at key points.

7.1.3 Link Roads

Identification of the Link Roads

The following routes have been identified as important link roads to ensure secondary access to both the Regional Development Corridor and the Activity Corridor:

- The **P709** as link road crossing 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. This is the road has high economic potential and is vital for the expansion of the Industrial area and development along the coast. Currently this road is gravel again strategic intervention to upgrade the road into black top surface is of high importance.

- The **P532** provide another important link between the Mandeni area directly towards 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. This link road will in future further provide alternative access to the planned urban infill areas and serve as the boundary between urban development and the future agricultural land area.

- 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. Economic studies conducted during the Sundumbili Urban Regeneration study found that that the complex serve a major regional commercial centre and that economic thresholds to the centre is to a large degree made up of households outside of the Mandeni municipality.

Management Strategies and Public Interventions

Public interventions envisaged in this area relate to:

a) The upgrading to black top surfaces of all the link roads to perform the distribution function intended. As these roads are provincial roads, this will imply that the municipality engage with the Department of Transport in order to co-ordinate the upgrading of these routes.

7.2 NODES AND ACTIVITY AREAS

7.2.1 Primary Node

Identification of the Node

The Primary Node surrounding the Mandeni / Sundumbili business district has been identified as the primary service centre within previous IDPs of the municipality as well as the iLembe Spatial Development Framework. 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 conceptual boundaries of the primary node have been defined within the Sundumbili Urban Node Regeneration project funded by the Department of National Treasury through the Neighbourhood Development Partnership Grant (NDPG). The project aims to improve the quality of life while stimulating economic regeneration within the three main activity nodes of the Mandeni civic node, the Sundumbili Core Business node and the mixed civil/ commercial node including the linkage routes between these three nodes as a combined primary node where most commercial activity and social functions conflate.

Management Strategies and Public Interventions

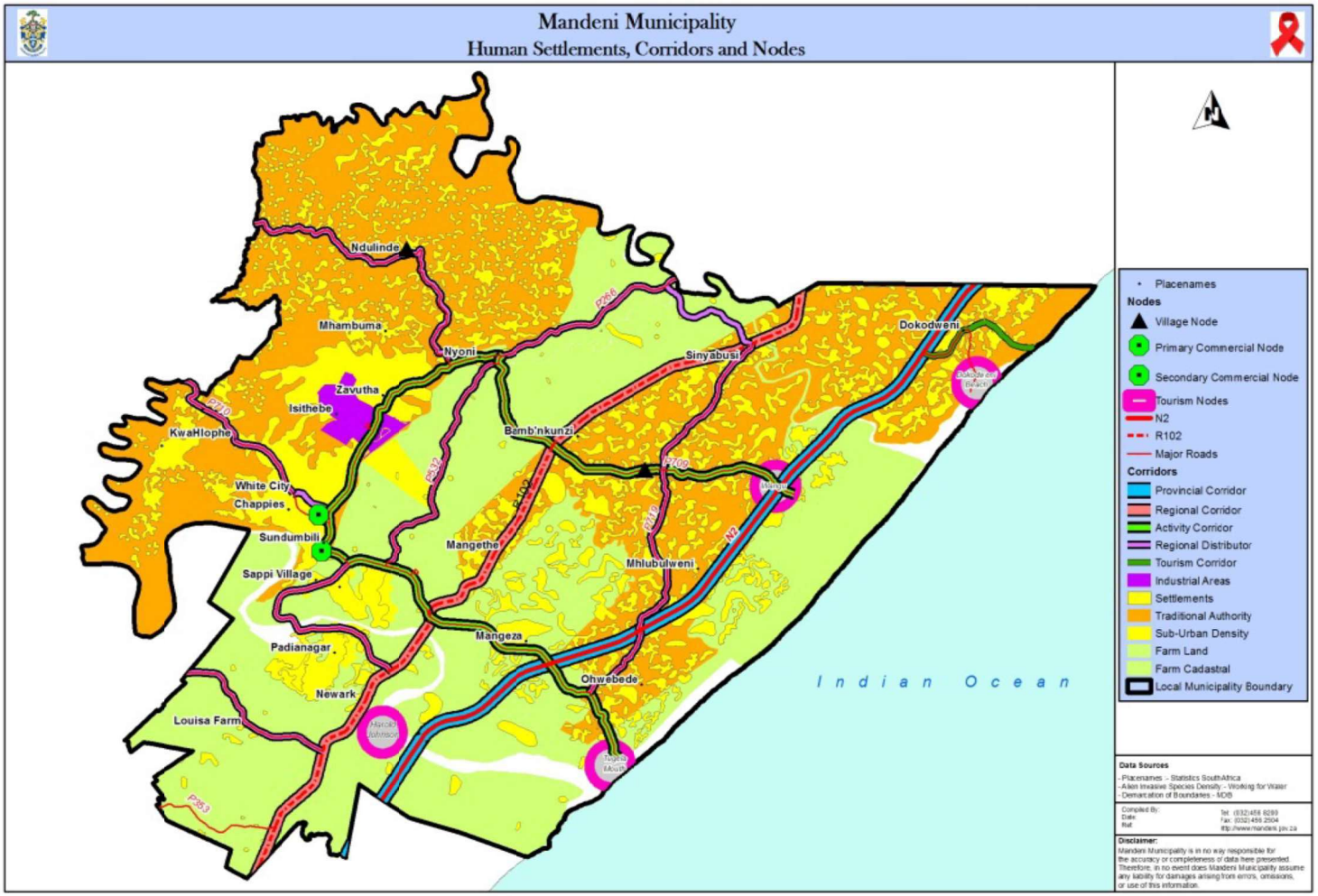
Public interventions envisaged in this area relate to:

a) Implementation of the Sundumbili Urban Node Regeneration project funded by the Department of National Treasury through the Neighbourhood Development Partnership Grant (NDPG) fund amounting to R132 million public investments over a three year period.

b) Extending the Mandeni Scheme to the entire primary node area in order to more effectively manage land use within the area. The intention is to stimulate mixed use development within publically acceptable and responsible parameters.

c) Promoting and establishing Public-Private-Partnerships in the development and management of the node.

Map 2: Mandeni Development node



Source: Mandeni Municipality: GIS

7.2.2 Industrial Node

Identification of the Node

The isiThebe Industrial Park and potential expansion around it, mainly forms the industrial node within the municipality. Although the SAPPI plant represents a major industrial area and some additional light service industrial developments are envisaged around it, it is not intended to serves as a growing industrial node, mainly due to its locality.

Management Strategies and Public Interventions

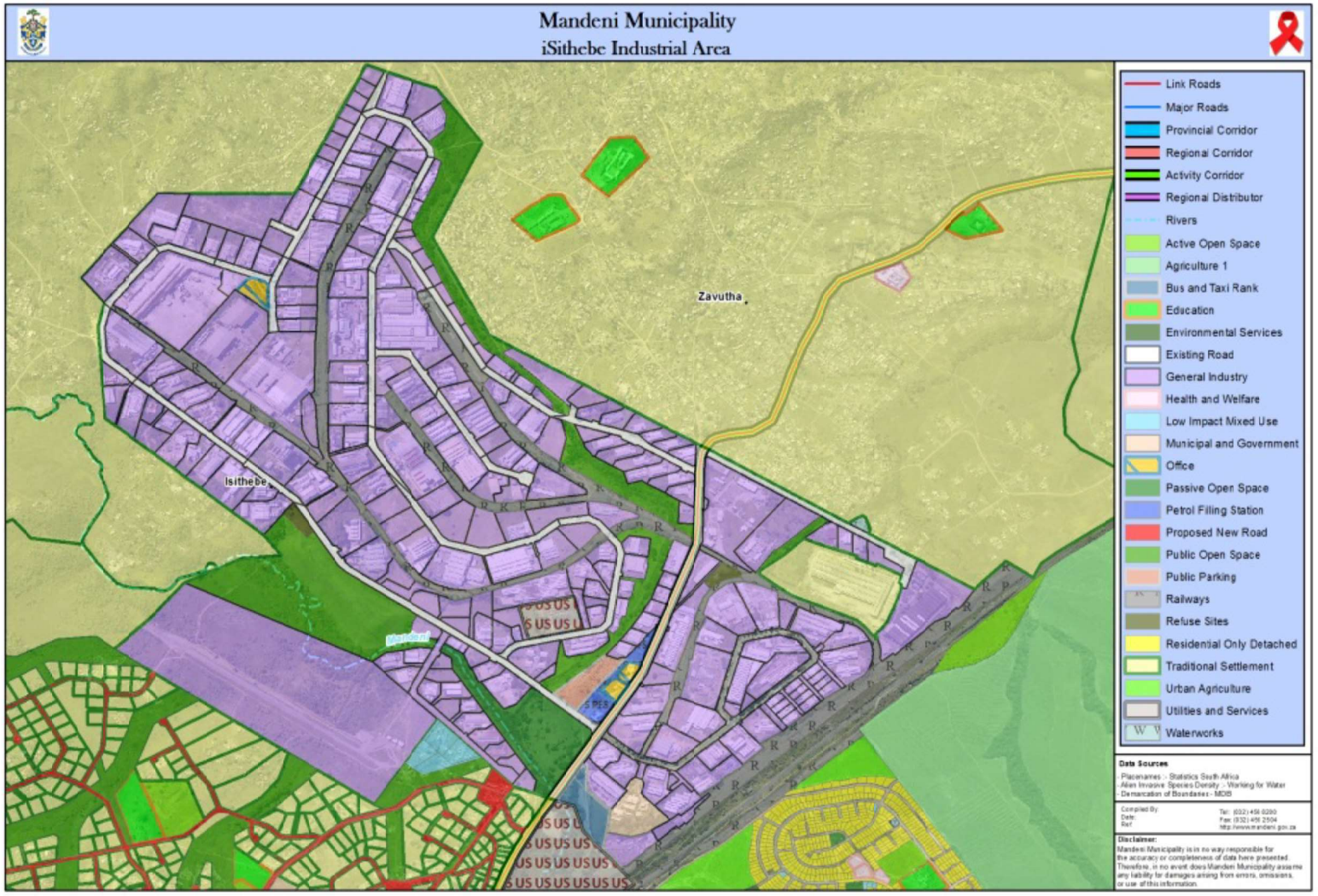
Public interventions envisaged in this area relate to:

a) Preparing a Local Area Plan for the Urban Complex of which this node forms part and ensure that the access and support services within the areas support the continued and uninterrupted functioning of not only the node, but also the ability of surrounding local employees to access the area.

b) Investigation and implementation of a more direct link road between the node and the R102 Corridor.

c) Co-ordination of regional marketing efforts of the industrial node in conjunction with Enterprise ILembe.

Map 33: Isithebe industrial node



Source: Mandeni GIS

7.2.3 Rural Service Centres

Identification of the Centres

The identified 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.

Management Strategies and Public Interventions

Public interventions envisaged in this area relate to:

a) Provision of constant, uninterrupted services to these centres as they in turn provide a vital service to surrounding rural communities.

b) Promoting the clustering of higher level social services from various departments within these centres.

c) Establishing key intermodal transport points within these centres as part of the integration into the Activity Corridor.
d) Maintain hierarchy of nodes between these centres and the primary node.

7.2.4 Activity Points

Identification of the Points

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. These points serve as the first entry point to service delivery in the rural areas and provide a plausible threshold for the clustering of groups of small, localised businesses thus providing the starting points for the emergence of mixed use activity nodes. The Wangu area serves as typical example of these activity points.

Management Strategies and Public Interventions

Public interventions envisaged in this area relate to:

a) Promoting the delivery of primary social services at these points.

b) Ensuring that the access intersections associated with these points are upgraded and maintained.

c) Providing for public transport facilities at these points.

d) Supporting small business development at these nodes as first economic entry for many entrepreneurs.

7.2.5 Rural Settlement Clusters

Identification of the Points

In terms of the Detailed Settlement Definitions (contained within the DSM Manual of the Department of Water Affairs and Forestry) a non-formalised settlement with between 500 to 5000 persons residing in it is classified as a village. Although the same definition parameter is used, this SDF refers to these areas as Rural Settlement Clusters as the distinction between one village to the next is not always as definable. A total of 12 such rural settlement clusters

have been identified within the municipality by using population density data. These include (amongst others) the villages of Dokodweni, Mphumulandoda, Mhambuma, Nembe, Indlondlo, Wetani and Ohwebede.

Management Strategies and Public Interventions

Public interventions envisaged in this area relate to:

- Focussing priority rural water and sanitation projects to these areas and centred on servicing these communities.
- Maintaining access roads to these areas to at least the current standard (mainly gravel road surfaces).

7.3 NATURAL ENVIRONMENT

The intention of utilizing the natural environment as one of the significant structuring elements in the development of Mandeni has been described earlier.

The appropriate maintenance of the natural environment, its rehabilitation where necessary, and its adequate protection and management has been suggested to be of major importance for both the creation of decent living environments, the development of tourism and recreation activities and the further development of the agricultural potential of Mandeni.

The SDF identifies the major and minor river valleys, coastal areas, escarpments, mountains and other areas identified as being of environmental significance. The iLembe District Environmental Management Framework then suggested relevant environmental protection areas which need to be considered before any development is proposed or approved. Further detail in terms of specific areas and resources will need to be established via an environmental management plan. The table below outlines the management zones to be considered in terms of Environmental Management of the municipality.

Table 30: Environmental Management Zones

Management Zone	Opportunities	Management Considerations
Socio-Economic	• Agri- Processing • Timber and furniture industry • Tourism • Renewable techniques	• Infrastructure proximity to transport network • Focus on future growth and development • Green Design and Technology inclusion • Connection of growth along the coast to poverty alleviation efforts inland.
Heritage	• Local Architecture • Formalizing existing heritage committee • Enforcing heritage impact assessment	• Improve sense of place and cultural tourism • Improve Tourism industry • Economic development
Biodiversity	• Land Use Management System used to protect core assets • discourage settlement along sensitive areas • Encouraging landowners to formally register areas of high conservation	• Inform Land Use Planning • Natural corridor for biodiversity • Job creation through recycling • Reduce demand of natural resources

Management Zone	Opportunities	Management Considerations
	• Invasive alien control • Innovative waste management	
Water Resources	• Creating open spaces near watercourses • Innovative water use & conservation strategies • Implement river health and adopt River Programmes • Wetland and Riparian area corridor protection and management plan	• Natural corridors for biodiversity • Effective use and treatment of fresh water • Improve water health and rehabilitate riparian • Development and implementation of stormwater network
Agriculture	• Exporting Agricultural Produce through the Dube Trade Port • Divers Agricultural Sector • Bio-resource program	• Transportation and Agri-processing opportunities • Influence on food security , poverty and unemployment • Bio-fuel impact assessment
Air Quality	• Establish an air quality monitoring unit to audit emissions from industrial operations	• Alternative technologies and international clean production standards.
Waste Management	• Development of an integrated waste management plan for the region. • Waste management to green economy	• Investment in renewable technologies • Training and skills development • Job creation
	• Recycling centre • waste sorting station	
Mining	• Quarrying and chalk extraction identified • Sand Mining opportunity in Ndwedwe	• Collaborate with authorities • Water recycling / re-use • energy efficiency, • pollution reduction, • rehabilitation efforts

Source: iLembe DM EMF and Strategic Environmental Management Plan 2013

Management considerations have been added which include indicators, determining factors or aspects to consider which could influence the outcome of such an opportunity. The management considerations serve to inform the process of identifying environmental management zones, and specifying management guidelines for particular zones or features within iLembe

Table 31: Constraints identified for the iLembe District Municipality's development

Constraint	Management considerations
Provision of municipal services	Provision and maintenance of road, electricity, water and Sanitation distribution networks
Impacts of climate change	Impact on watercourses, agricultural resources, human concentrations, land-sea interface(tidal surges, extreme events etc)
Land access	Trust lands vs. areas of expansion and development
Economic activity	Significant economic activity in KwaDukuza and Mandeni as opposed to the rural areas of

Constraint	Management considerations
	Ndwedwe and Maphumulo
Topography	Natural features, e.g. ridges, agricultural potential, water courses; Rural settlements vs. Urban areas
Proposed Urban Development line	Constraint to agricultural protection
Emerging ribbon development foot print	Urban sprawl- particularly in coastal corridor and rural accessibility corridors
Regional connectivity	Lack of planning; Lack of pedestrian facilities; Lack of effective public transport; Lack of integration between rural (low income)hinterland and coastal corridor(high income)
Lack of knowledge of heritage resources and a lack of management and protection	Identification of areas of significance; Identification of areas under threat
Habitat and vegetation destruction	Degradation; Habitat of conservation worth status, and sensitive areas
Limited formal conservation of vegetation types	Formal and informal conservation areas
Pollution of water courses and the atmosphere	NFEPA status of water courses; Known point sources of pollution
Destruction of wetlands and riverine environments	Increase in storm water volume and velocity (lack of flood attenuation), stream flow regulation, sediment trapping, phosphate trapping, nitrate removal, toxicant removal, erosion control, maintenance of biodiversity, water Supply for human use, cultural significance, tourism and recreation, education and research
Water Use License Authorization (WULA backlog)	Water Use Monitoring and Auditing related to: • Sand/stone mining; Artificial breaching; • Agriculture encroachment and poor farming practices; • Water abstraction; Faecal pollution; Organic pollution; Industrial pollution; and • Poorly situated urban development and infrastructure
Bulk water supply to the municipality is problematic	Access to basic services
Land use conflicts threaten high potential agricultural land	Limited large scale commercial cultivation potential in Maphumulo and Ndwedwe; Erosion/ soil loss/ veld degradation/ loss of agricultural land to development; High potential agricultural land earmarked for urban development
Inadequate waste management	Waste management plan; Landfill site sand transfer stations
Habitat fragmentation	Urban and transport network
Poor catchment management	Degradation
Alien invasive species	Areas of invasion; Biodiversity loss
Lack of electrification in the rural areas Indicates probability of adverse indoor	Access to basic services is a basic human right; Poor management leads to social impacts and pollution

Source: iLembe District Environmental Management Framework and Strategic Environmental Management Plan 2013

7.3.1 Management Zones

The following table depicts management zones identified by the iLembe District Environmental Management Framework for urban areas, and needs to be considered prior to the approval of any developments.

Table 32: Environmental Control in iLembe Management Zones

Management Zone	Compatible Activities	Incompatible Activities
Industrial Activity Zone	• Medium and light industry • Infrastructural service provision including transport networks • Renewable energy generation facilities • Water recovery and recycling	• Residential development • Heavy industry • Any activity that will result in pollution
Infrastructure Zone	• Public transport network development • Sustainable urban drainage systems • Mitigation of impacts on biodiversity corridors	• Fragmentation of priority conservation areas and sensitive environments • Infrastructure that will result in unfiltered polluted run-off entering a watercourse.
Coastal Management Zone	• Small scale fishing Industry • Tourism activities • Protected areas • Private nature reserves	• Industrial Development • Any development that prevents the public to access coastal resources
		• Activities that pose a pollution risk to estuaries
Terrestrial Biodiversity Management Zone	• Tourism Activities • Grazing (subsistence Level) • Cultivation for Subsistence Purpose	• Estate Developments • Industrial • Retail & Commercial • Mining • Urbanization • Bulk Infrastructure
Stewardship Zone	• Grazing at sustainable level • Tourism activities • Protected areas • Private nature reserves	• Industrial Development • Large scale / dense development
Urban Settlement Zone	• Residential • Light industry • Renewable energy projects • Urban open space and recreation spaces • Urban agriculture	• Heavy industrial • Sprawling development
Commercial Agriculture Zone	• Natural Open Space/ Protected areas • Agricultural Supplies & Services • Farm Stalls • Conservancies	• Residential Estate • Urbanization • Mining and prospecting • Township establishment • Bulk infrastructure that can equally be provided through local scale distributed solutions

Management Zone	Compatible Activities	Incompatible Activities
Rural Support Zone	• tourism Activities • Grazing (subsistence Level) • Cultivation for Subsistence Purpose	• Estate Developments • Industrial • Retail & Commercial • Mining • Urbanization • Bulk Infrastructure

Source: iLembe District Environmental Management Framework and Strategic Environmental Management Plan 2013

7.3.2 Global Warming

Under conditions of global environmental change, the protection of ecologically viable ecosystems is becoming increasingly important in meeting the health, social, cultural and economic needs of urban communities. The services provided by these ecosystems offer significant opportunities for local communities and infrastructure to mitigate the negative impacts of climate change.

The natural environment is most threatened by the transformation of natural areas (unregulated developments, sand mining etc), the uncontrolled spread of invasive alien species, climate change, and pollution. Given the current threats to biodiversity, and the projected impacts of climate change, the ILembe District Municipality must urgently invest in protecting, rehabilitating and managing the districts ecological infrastructure.

Pressures experienced general in Mandeni Municipality include: Agricultural Activities, Human Settlement and Urban Development, Encroachment into estuarine system and wetlands, Discharging into Estuarine system and wetlands, unmanaged spills, Storm water runoff, Water Abstraction and Impoundment, sand mining.

Mandeni Municipality has a variety of the environmental assets such as estuaries, rivers, coastal zone, vegetation, biomes, terrestrial, freshwater ecosystem; coastal forest and dune areas, the remaining natural vegetation of the coastal flats and the vegetation of the incisive river valleys occurring within its jurisdiction.

It is very important for the Mandeni Municipality to protect these natural assets for the benefit of the future generations as required by National Environmental Management Act, (Act 107) of 1998 and other international initiatives such as Agenda 21, Millennium Developmental Goals (Goal 7), Rio Declaration on Environment and Development, Statement on Forest Principles, United Nations Framework Convention on Climate Change, and United Nations Convention on Biological Diversity.

7.3.3 Climate Change Adaption and Mitigation

While climate change is a global phenomenon, the impacts for each area are locally unique.

The objective of this policy is to adapt to and mitigate the impact of climate change on the vulnerability of people in Mandeni.

This policy relates to the sustainability issues that have emerged from the SDF process, as it relates to and impacts on climate change. Mandeni is an area that is highly sensitive and vulnerable to climate change, due to the high degree of natural variability in climate. The high levels and densities of poverty in Mandeni combined with the existing levels of degradation and the flood hazard constitute a high level of sensitivity and vulnerability for the resource-poor people in the area.

In an attempt to mitigate the effect of climate change and the vulnerability of the people of Mandeni, the following actions are required:

- Delineate and map areas with high flood risk;
- Develop a risk reduction strategy that is aimed at relocating settlements that reside in high flood risk areas;
- Relocating settlements that reside in floodplain areas;
- Empowering traditional leaders in respect of the consequences of allocating land for settlements in flood risk areas;
- Prohibit development of land on steep slopes;
- Prohibit development where the land is in the opinion of the Municipality otherwise affected by virtue of soil instability, liability to flooding, inaccessibility or topography;
- Coastal erosion must be avoided and managed;
- Promote the development of alternative energy, including renewable energy technologies
- Identify sustainable alternative energy projects in the district.
- Increase environmental awareness through public campaigns and educating locals of unique environmental systems.
- Enforcement of proactive localized measures towards climate change adaptability and mitigation.
- Promoting Public transport systems as opposed to use of private vehicles in the aim to reduce carbon emission
- Municipalities may incorporate climate change policies into their official plans to identify specific actions to be taken to achieve climate change objectives. These policies can complement other municipal programs and initiatives that address climate change and reduce greenhouse gases (e.g., programs for tree planting, green building and energy efficiency incentives, water conservation and carpooling).
- Municipalities may prohibit the use of land or erecting buildings and structures within areas that are significant features, hazard lands and areas prone to flooding (e.g., floodplains or valley lands). Prohibiting development in natural areas and hazard lands promotes ecological services that address climate change mitigation and adaptation (e.g., carbon sequestration and storm water retention and infiltration, while reducing economic, health and safety costs and risks).

The Mandeni Integrated Development Plan (IDP 2012/2017) Identifies four main opportunity areas for the mitigation and adaptation programme within the District, that is, to facilitate a transition to renewable energy resources, the promotion of energy efficiency programme, consolidation of urban development and the establishment of adequate Disaster Risk Management (DRM) systems.

According to the Mandeni IDP (review 20144/2015), the Mandeni Municipality is in the process of developing its adaptation and mitigation strategies, however, certain projects dealing with issues of climate change have been initiated within the Municipality such as:

- In areas prone to lightning, lighting conductors are being installed to protect the homes and residents living in the area;
- The Department of Agriculture, Environmental Affairs has planted a number of trees in Mandeni as part Departmental Greening Program, project such as Hlomendlini Greening project, which entails plantation of 1 fruit tree and 1 shade tree is of such project;

- Currently the low cost housing subsidy policy has made it a requirement for houses to be fitted with solar panel heaters to reduce the electricity costs of a household and
- The Department of Human Settlements has embarked on installing JoJo tanks in all rural housing projects for the harvesting of rain water.

7.4 Urban Edge Delineation for Mandeni, Sundumbili and Tugela

The urban edge delineation forms part of the spatial development framework in order to manage and control adhoc expansion of urban areas. On the contrary, there is the need to accommodate land development in a rational manner, particularly with adequate regard to nature and its useful resources. The rationale behind the urban edge determination includes the:

Protection of Natural and Human Elements

- reducing pressure on sensitive environments;
- protecting important elements within urban settlements; and
- Avoiding hazards.

Achieving a Dynamic Balance between the Landscapes of Society

- Urban/Rural/Wilderness Landscapes;
- promoting Small Scale Agriculture,

Achieving Greater Urban Efficiencies

- eradicating sprawl and promoting urban compaction;
- managing urban waste;
- co-ordination of line and point bulk services to increase efficiency.

The factors influencing the respective boundaries are:-

- to promote greater efficiencies;
- the edges are to be as close to existing build up areas as possible; and
- a minimum walking distance of no more than 1.5km from urban activities.

The idea of settlement edges in the Mandeni SDF represents a spatial intervention to encourage greater efficiencies in land use and protect essential landscape characteristics. Through this, better provision and maintenance of basic services can also be carried out more effectively. This requires detailed planning at a settlement level and could best be sustained through the coding or integration of the existing community rules into a land use management system. Certainly, the level of compaction will take into account the nature and character of each settlement, as well as the prevailing spatial development trends and patterns.

7.5 SPATIAL INTERVENTION AREAS

As a broad implementation and structure to the SDF, four spatial intervention zones were identified in key localities for responses outlining appropriate interventions according to the following zones:

- **Intervention Zone One :Accelerate Growth**

This zone is viewed as the Main Economic Growth Area for prioritised development spending and includes the settlements of **Mandeni / Sundumbili** as well as **isiThebe**

- **Intervention Zone Two: Share Growth**

This zone includes Social Inclusion Areas representing areas for investment in people rather than in places. Settlements within this zone include, **Nyoni**, **Newtown** and peripheral areas of **Sundumbili.**

- **Intervention Zone Three: Stimulate Growth**

This zone intend to stimulate and kick start New Potential Growth Nodes. Included in this zone are Tugela Mouth and Inembe.

- **Intervention Zone Four: Environmentally Sensitive Zones**

This zone includes registered conservation areas as well as identified sensitive areas. Thsi zone includes the Amatikulu Nature Reserve as well as the coastal zone and ecologically sensitive areas identified within the Siyaya Coastal Development Framework.

7.5.1 Intervention Zone One (Accelerate Growth)

The SDF identifies Mandeni/ Sundumbili as the primary node; the area has a largely urban setting and incorporates economic and administrative activities. Sundumbili town is considered as the heart of the municipality as it links the Municipality through the activity corridor along routes P415 and P459 with the Regional Development corridor of routes N2 and R102. The R102 is the regional development corridor that links the Municipality with the external nodes beyond the Municipality jurisdiction such as Stanger to the south and Gingindlovu to the north.

The primary investment zone is to a certain extent serviced with infrastructure and consists of high order facilities as it accommodates Municipal Offices, Sappi, and shopping centre. The types of land uses which are encouraged in this area include Shopping Complexes, Administration / Offices, residential development. The Mandeni/Sundumbili area can be regarded as the primary urban centre within Mandeni Municipality. However, due to past multiple administrative system, the area lacks urban form, structure and character. The prevailing spatial form presents a classic example of segregation of communities based on past planning practices. Currently the primary node is disintegrated and traversed by physical barriers such as the railway line which create two separate entities servicing distinct communities. Sundumbili Plaza is primary economic activity node which services the entire Municipal area including rural communities (former KwaZulu) immediately adjoining is the Mandeni area. The CBD lacks the urban form and is characterized by fragmented and block development.

The Municipality has thus commissioned a planning assignment "Urban and Regeneration Strategy aimed at responding to the current spatial realities. The primary objective of the study is to provide a smoother transition between the broad Integrated Development Plans, Spatial Development Framework and the Scheme. The desired output from this exercise is the implementation plan/ capital investment framework which clearly outline and quantify the required Municipal intervention to address the situation. It can be recorded that the Municipality has applied and secured funding from the Neighbourhood Grant Funding to the amount of R136 million. This is multiyear funding to be incremental allocated for technical assistance and capital projects resulting from the Urban Regeneration Strategy.

a) Service Delivery and Development Interventions:

- These areas indicate areas that will be prioritized in terms of development spending and investment.

- Providing economies of scale for effective and affordable service delivery
- Promoting infill development where high levels of services are available
- Growth will be managed in a manner to ensure sustainable public development without hampering development processes.
- Improve transportation linkages with neighbouring municipalities and Districts
- Bulk infrastructure planning and investment in key components of, and linkages to, the regional corridors
- Upgrading of the public transport system (incl. requirements of taxi recapitalization programme)
- Implement the Urban Regeneration Programme in Mandeni/ Sundumbili Node.

b) Social Interventions:

- Densification of the settlement in order to encourage compact urban development.
- Economic and social activity overlaps to create sufficient thresholds for social services and improve the quality of life in these areas.

c) Economic Interventions:

- Government infrastructure investment – beyond basic service delivery – will be in areas of high development potential or economic growth
- Focussed investments into key flagship projects within this area.
- Areas with high levels of poverty and high development potential should receive investment beyond basic services to exploit this potential.
- Focusing future settlement and economic development opportunities into activity corridors and nodes adjacent to or linked to main growth centres.
- Strengthen growth and development potential by way of the promotion of development corridors that link District key strategic economic hubs (e.g. ports of Richards bay and Durban).
- Stimulating industrial clustering and expansion in support of the regional development corridor.

d) Environmental Interventions:

- Combating urban sprawl into the surrounding environmentally sensitive areas associated with the Tugela River and its tributaries.
- Combating surface, air and water pollution resulting from the commercial and industrial activities found within the zone.

7.5.2 Intervention Zone Two (Sharing Growth)

The primary intervention zone including the periphery of Sundumbili, Nyoni in the north and Newtown in the south and these areas are strategically located along the activity corridor and in high accessibility to the Primary Node. Zone Two is rural focused and promotes the concept of social inclusion and the "***investment in people rather that place***" by promoting and strengthening overlaps in economic activity and poverty to address high levels of spatial fragmentation and exclusion.

a) **Service Delivery and Development Interventions:**

- Provision of sufficient road access and public transport options between this area and Intervention Zone One as well as surrounding regions.
- Provision of social support facilities to enhance the quality of living in these areas.
- Housing provision and possible formalisation in certain area with associated reticulated services.

b) **Social Interventions:**

- Develop and implement care and support programme for older persons
- Develop and facilitate the implementation of prevention of substance abuse programmes
- Facilitate the social integration of people with disabilities to the mainstream of society.
- Strengthen specialized protection, care, support and developmental programmes for people with disabilities.
- Facilitate care and support services to victims of violence and abuse.
- Improve service facilities for children in need of care and protection.

c) **Economic Interventions:**

- Efforts to address inequalities should focus on people and not places.
- Areas with high levels of poverty and low development potential should receive investment to provide basic services as well as social transfers, human resource development, and labour market information.
- Development economic sectors and spatial localities in accordance with people needs and potential;
- Deliver on the constitutional obligation to provide basic services to all citizens
- Promote job creation and skills training;
- Address past and current social inequalities by focusing on people and not places
- Support full participation and equal opportunities to all people,
- Offer the poor skills development and employment opportunities to exercise choices in improving their quality of life in a dignified manner,
- Use the natural resource base of the municipality in a sustainable manner.

d) **Environmental Interventions:**

- Management of household and subsistence farming activities on the localised environment.

7.5.3 Intervention Zone Three (Stimulating Growth)

Zone Three will identifies and focuses on the emergence of potential new nodes where spatial **overlaps between areas of economic activity and areas of poverty occur**. This implies focused investment in poverty concentrations that show potential for economic development in their spatial and socio-economic context in terms of the following:

- Previously disadvantaged areas near fast growing urban areas
- Agriculturally orientated villages in areas of high agricultural potential
- Communities settled in potential commercial farming areas
- Communities situated in close proximity to Industrial nodes, and Activity Corridors and Eco Tourism areas.

a) Service Delivery and Development Interventions:

- Focussing priority on rural water supply and sanitation projects.
- Maintaining access roads to these areas to at least the current standard (mainly gravel road surfaces).

b) Social Interventions:

- Integration in terms of functions, mixed uses classes of society, residential, commercial, social, and agricultural and tourism.
- Concentrate on Economic and social activity overlaps.

c) Economic Interventions:

- Areas with high levels of poverty and high development potential should receive investment beyond basic services to exploit this potential.
- Focusing future settlement and economic development opportunities into activity corridors and nodes adjacent to or linked to main growth centres.
- Develop economic sectors and spatial localities in accordance with people's need and potential;
- Principle: Support full participation and equal opportunities to all people,
- Principle: Use the natural resource base of the municipality in a sustainable manner.
- Job opportunities closer to where people are living thus reducing transportation needs

d) Environmental Interventions:

- Lower density developments to retain rural character and protect the environment.

7.5.4 Intervention Zone Four: Environmentally Sensitive Areas

Development Zone Four will largely concentrate on future sustainable development approaches in terms of sustainable development spending. This will be achieved by focusing on rectifying development imbalances relating to equitable access to basic services, the protection of the natural and cultural resources and spatial form that promotes greater efficiencies in land-use and service provision. Important however it to acknowledge that although sensitive and responsible development relating to eco-tourism and lifestyle estate development might be considered within these areas, they are mainly characterised as conservation areas with envisaged minimal development and low densities preceded and guided by comprehensive environmental assessments.

a) Service Delivery and Development Interventions:

- Water and sanitation services within this zone will require mainly on-site solutions and only where the underlaying pedology and geological conditions allow for it.
- Public and Private development within these area will be kept to a minimum and only in accordance with guidelines which might be provided by relevant conservation authorities.

b) Social Interventions:

- Subsistence use of the resources of the areas will be managed through education, licensing and monitoring measures.
- The social condition of communities within and adjacent to these zones will be closely monitored to ensure that the natural resources are not depleted due to poverty and depredation.

c) Economic Interventions:

- These zones will mainly be linked to eco-tourism development and packaged as part of a regional tourism product.
- Direct economic benefit should be derived from proximity rather than direct exploitation of resources, including land, within this zone.

d) Environmental Interventions:

- Elevate the coastal zone through appropriate protective measures to contribute to the economy.
- Prevent and manage the spread of invasive species through clearing efforts focused at wetland etc.
- Minimise further loss of natural habitat to protect ecosystem functioning by means of sector specific land use management guidelines.
- Identify priority (critical) biodiversity areas in the Mandeni Municipality.
- Identify and prioritise areas for the creation of protected area networks that are representative of the district and that are ecologically sustainable.
- Spatial analysis of land use pressures in relation to biodiversity; and
- Identification of possible conflict zones(development vs. conservation and bio- diversity protection)

7.5.5 Tourism Intervention Area

An area north of the Tugela River from the coast to the N2 has been identified as a potential tourism intervention area, and is currently experiencing related interest from private developers.

Due to the sensitive nature of the areas along the coast and the natural resources which are presented by Amatikulu River towards the North and Tugela River to the South, it is vital that careful environmental consideration is undertaken. The types of land uses which are encouraged in these areas should be compatible with the rural character and shall not destruct the natural beauty of the area nor present a situation where the local communities will not have access to the natural resources. Types of Land uses that are encouraged in these areas shall be tourism orientated mixed uses; holiday resorts, residential development, cultural villages, hotels, chalets, restaurants, conferences centres. It should be noted that

proposing developments that area in line with the SDF does not give one automatic approval and of specific importance is that these types of developments will be of a low density.

The Municipality has prepared a comprehensive study (Siyaya Coastal Development) which is meant to bridge a gap between the broader SDF and the LUMS. The primary objective of the study is to put in place development controls and measures that will ensure that the pristine coast and rich natural resource are preserved. The project outcome is a development plan which determines the critical land uses and development patterns in the project area, in order to inform Municipal decision making regarding the future development of this area, which is environmentally very sensitive, but which also includes the most important tourism related development opportunities within in the area of jurisdiction of Mandeni Municipality.

It is anticipated that the outcomes will be sufficient to be translated into a Strategic Environmental Assessment, which can then be used as the starting point for the authorisation for any of the development opportunities identified in this plan. The principles agreed to by the community and relevant stakeholders for the development of the project area during the process of formulating this plan should be carried forward into any other development authorisation process.

The provisions of the Siyaya Coastal Development Framework plan strongly advocate the need for sustainable development in terms of Environment, Social and Economic point of view. The Siyaya Coastal Framework Plan insists on protection of natural resource (Ecosystem Services) including agricultural resources (High Potential Agricultural Land) and promotion of local economy. Mandeni Municipality is very rich in terms of natural resources and consider the rustic and natural character of the coastline as selling point and unique feature; therefore it must be preserved and enhanced.

The project area is defined by Indian Ocean, the northern boundary of the Municipality, the N2, a line parallel to the MR 415 to include the Mangete historical settlement area and Ndondakusuka Hill, the R102(old N2), and the southern boundary of Municipality. The intention is to include land between N2 and the coast, and the Thukela Valley historical sites, including the Mangete historical settlement area and Ndondakusuka Hill. The project boundary was extended to the southern boundary of the Municipality for completeness, although the bulk of the area south of the Thukela River is a commercial agricultural area with few special environmental features or tourism development opportunities. Potential linkages to the historical sites associated with the Battle of Ndondakusuka, especially those at Ndulinde, are to be included in the analysis, although some of these sites fall outside the project area.

7.6 INTENDED FUTURE LAND USES

7.6.1 Conservation Areas

Identification of Land use

The Mandeni Spatial Development Framework considers both formally registered conservation areas as well as additional potential conservation worthy areas. In some areas around the Amatikhulu Nature Reserve and expansion of the current conservation area is also proposed. In general the following areas were identified as future conservation areas.

- All formally **registered Nature Reserves** (ie. Amatikhulu Nature Reserve),
- All **river and stream areas**, including both the major rivers (Tugela and Amatikulu) as well as smaller streams traversing the municipality,
- **Riverine buffer areas**. These are currently indicated conceptually, but will need to be finalised in future,
- Current **commercial and subsistence farming** activities are also illustrated as a) areas to be conserved for such practices and b) areas where care should be taken though sustainable agricultural practices.

Management Strategies and Public Interventions

a) Protection of Critical Biodiversity Areas and Ecological Support Areas.

Critical Biodiversity Areas (CBA's)

The purpose of CBA's is simply to indicate spatially the location of critical or important areas for biodiversity in the landscape. The CBA through the underlying land management objectives that define the CBA prescribes the desired ecological state in which we would like to keep this biodiversity. Forty-four terrestrial habitat types and three aquatic habitat types were identified through field surveys and with the aid of the unpublished VEGMAP (National Botanical Institute) data. These areas were mapped at a 1:50 000 scale within the District. The corridors network link core conservation areas through a District wide network that covers the complete range of altitudinal and latitudinal zones. These corridors incorporate the most terrestrial and freshwater priority areas

Ecological Support Areas (ESA's)

Highest conservation importance is allocated to individual wetlands or clusters of wetlands. Ecological buffers (500m) are included as an ecological support area. Possible threats have been identified for the Amatikulu Nature Reserve area. The following public interventions are proposed for the identified Conservation areas:

- Further **detailed investigations** into the identification, mapping and classification and conditions of these environmental areas as backdrop to the increasing large scale development pressures experienced.
- Preparation of a combined **Coastal Management Plan and Local Area Plan** for the entire coastal area of the municipality from the coastline to the N2 to ensure that incremental developments do not severely degrade the environmental integrity of this vital ecosystem.

- **Community based development and education programme** in areas where potential conflict between subsistence farming activities and ecologically sensitive area may occur.

7.6.2 Agricultural Areas

Identification of Land use

The SDF distinguishes between future commercial agricultural areas and subsistence areas. The main rationale for this distinction is due to the different road, water, and electricity requirements between the two forms of agriculture. It is envisaged that a certain areas of communal farming becomes more market orientated, future SDF Review will respond to this. The potential infill areas between current

commercial and subsistence farming has also been included as part of the future agricultural areas in order to create a larger and more consolidated agricultural base for the area.

Management Strategies and Public Interventions

Specific strategies and programmes to be launched in the agricultural sector include the following;

a) Integration of land reform activities with sustainable agricultural development initiatives,

b) Targeted institutional support for small scale farmers

Large parts of the municipality are rural dominated and characterized by a significant number of small scale and emerging farmers being active in these areas. Spatially, a number of important interventions to support this sector (Rural farmer support services) should include the following:

- Basic Infrastructure provision (Engineering, shelter and socio-economic infra-structure)
- Increased accessibility of agricultural inputs
- Access to markets
- Setting up and strengthening cooperatives:

c) Development, support and management of off-farm and on-farm infrastructure

- Storage units, including cold storage and regular ambient storage
- Communications facilities (telephones, facsimile, internet access, etc.)
- Abattoirs
- Multi-purpose livestock handling facilities

d) Optimize production opportunities in areas with irrigation potential

Within the context of limited water availability in certain areas of iLembe, the optimum utilization of existing areas of irrigation potential is of vital importance. The potential of irrigation schemes should be investigated and necessary measures put in place to optimize the use of available resources.

e) Diversification of product range with increased focus on high-value specialized products and the identification and penetration of niche markets

The Mandeni agricultural sector is currently highly dependent on sugar, forestry and high value crops products. Subsistence, emerging and commercial farmers should be provided with required assistance to improve their ability to make the transition to economically viable and environmentally sustainable, diversified production systems.

f) Sustainable resource management

In view of the importance and the extent of the agricultural sector in the economy of the Mandeni municipality, it is imperative that agricultural and farming practices are environmentally sustainable. A number of important factors need to be considered in this regard:

- Soil erosion and desertification,
- Soil salination
- Integrated Livestock-Wildlife Management
- Ensure sustainable farming units and protection of high potential agricultural land
- Farming practices that consider the limited water resources and climate change effects.

7.6.3 Urban Infill

Identification of Land use

The area between the Primary Node (Urban Regeneration Area) and Isithebe, including land towards the east of this has been identified as an Urban Infill Area. Currently most of the land included in this areas to the east is vacant or currently being used for Agricultural Purposes.

This area has also been identified as key land development area within the recently prepared Land Reform Area Based Plan for the ilembe District, undertaken by the Department of Land Affairs. It is envisaged that this area will serve as a core complex within Mandeni with mixed use development.

Management Strategies and Public Interventions

It is the intention of the municipality to stimulate urban standard, mixed use infill development from both public and private sector within this area through pro-active planning, infrastructure provision and support.

Specific public interventions will include:

a) Preparation of a combined Strategic Environmental Assessment and Local Area Plan for the urban infill area.

b) Preparation of an Infrastructure Masterplan for the area based on the findings and recommendations of the LAP.

c) Systematic provision of bulk infrastructure and reticulation services in line with the phased development of the area.

7.6.4 Residential

Identification of Land use

Apart from the Sundumbili formal township area, the majority of the residential areas surrounding the Primary Node, Urban Infill Area and the Industrial Node are characterised by dwellings on communal land and informal residential options. As current trends continue, it is envisaged that a constant influx of residents around this complex will necessitate the development of proper neighbourhoods with residential options, social support services (ie. Schools, Health Services) and transport to employment opportunities within the core complex will need to be planned and provided.

Management Strategies and Public Interventions

Public interventions envisaged in this area relate to:

a) Provision of sufficient road access and public transport options between this area and the Urban Complex as well as surrounding regions.

b) Provision of social support facilities to enhance the quality of living in these areas.

c) Housing provision and possible formalisation in certain area with associated reticulated services.

7.7 ALIGNMENT WITH SURROUNDING SDF's

7.7.1 ILembe District Municipality

The ILembe SDF affects the Mandeni Municipality and the compilation of the ILembe SDF was informed by the first Municipal

wide SDF compiled for Mandeni in 2005. The detailed SDF being compiled will reinforce the district wide SDF as far as locally relevant physically possible. However, as the actual implementing agent of spatial restructuring, the local SDF will again inform the district SDF in the case of any differences.

7.7.2 Alignment with surrounding Local Municipalities

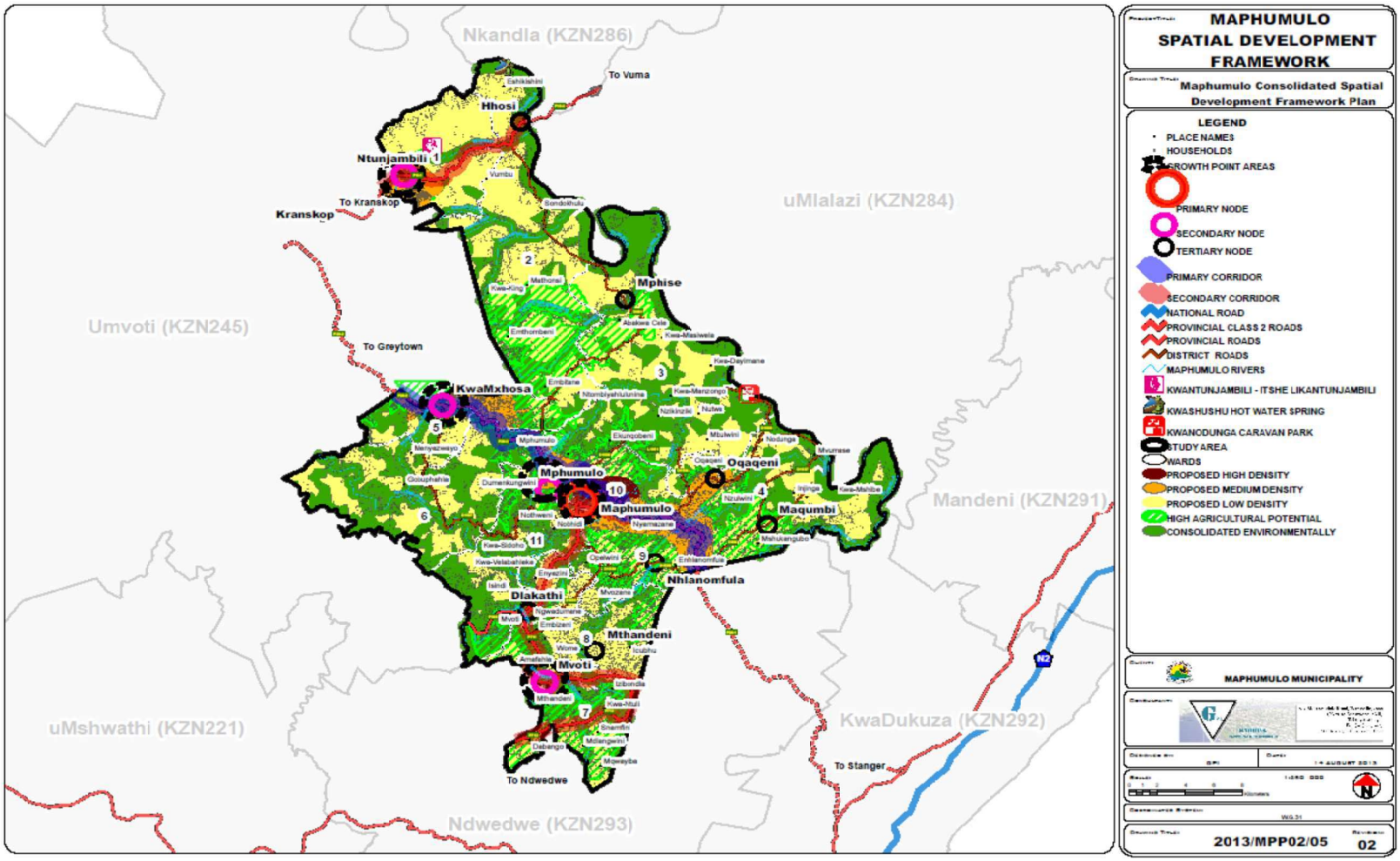
The Mandeni Municipality is adjoined by three other local municipalities, namely:

- Maphumulo Municipality `
- KwaDukuza Municipality
- Umlalazi Municipality

Table 33: Maphumulo LM Alignment Aspects

Area of Alignment	Observations
Development Corridors	Maphumulo municipality is located to the west of the Mandeni Municipality and indicates that the R74 route as primary corridor. The Mandeni SDF has indicated the same.
Cross Boundary Dependencies	The northern areas of Maphumulo adjacent the Tugela conservation area are identified as prime agriculture in the Maphumulo SDF map.
Cross Boundary Co-operation	None apparent
Potential Contradictions	None apparent

Map 36: Maphumulo Local Municipality SDF Map



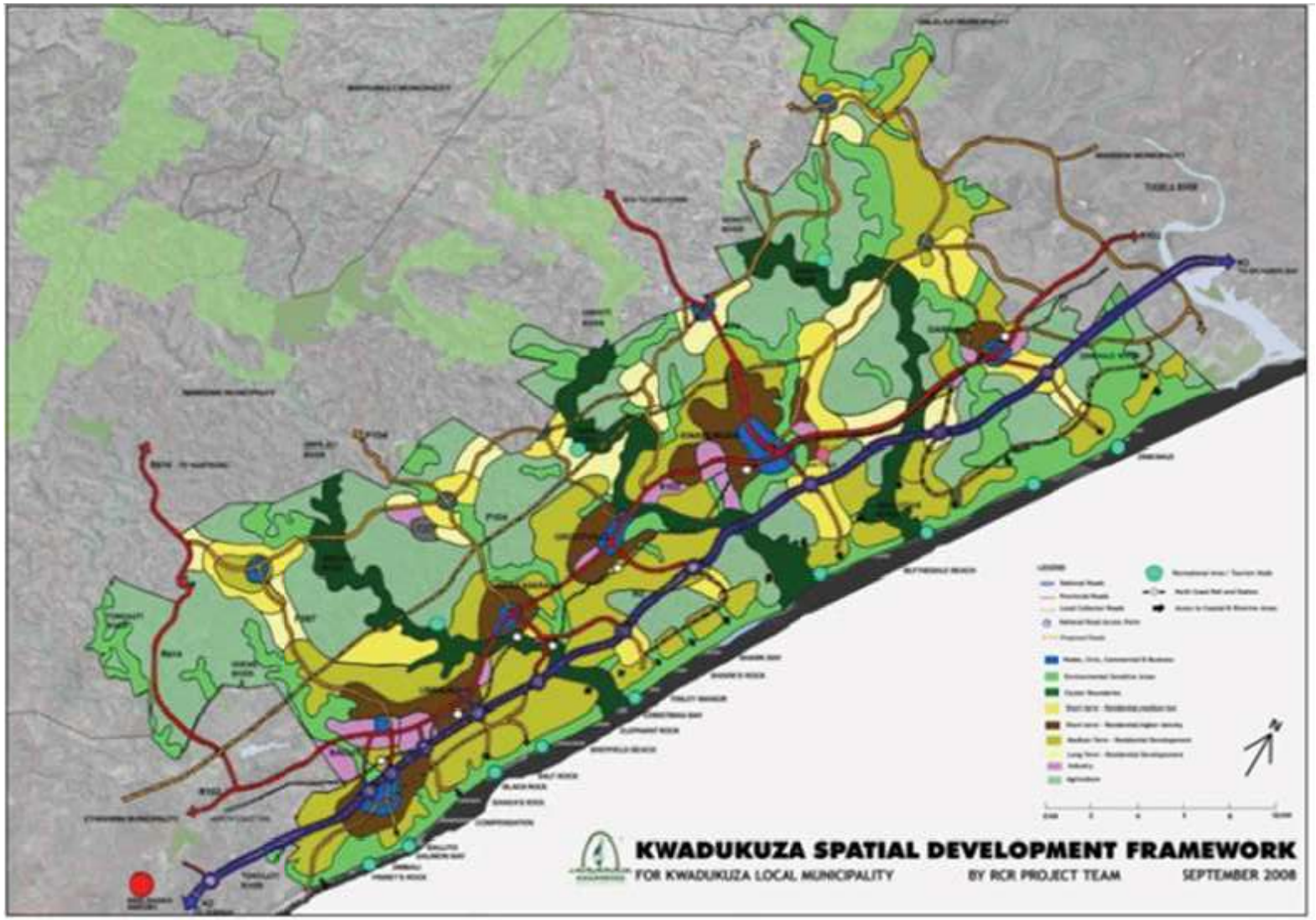
Source: Maphumulo SDF 2007

Table 34: KwaDukuza LM Alignment Aspects

Area of Alignment	Observations
Development Corridors	The KwaDukuza municipality is located to the south of the Mandeni Municipality and indicates that the N2 and R102 as primary and secondary corridors.
Cross Boundary Dependencies	The KwaDukuza SDF map has earmarked the areas adjoining the Mandeni Municipality as agricultural and use and indicates that there should be buffer areas maintained around the rivers traversing between the two municipalities. The Mandeni SDF indicates the same and has also excluded the high agricultural potential land out of its urban edge.
Cross Boundary Co-operation	A regional corridor stretching from KwaDukuza LM through Mandeni to Umlalazi has been identified. Management and utilization of this corridor needs to be co-ordinated between all three municipalities.
Potential Contradictions	The continuation of coastal management along the coast of these two municipalities may not be replicated from one to the newt.

Source: Black Balance Projects

Map 37: KwaDukuza Cross Border Alignment



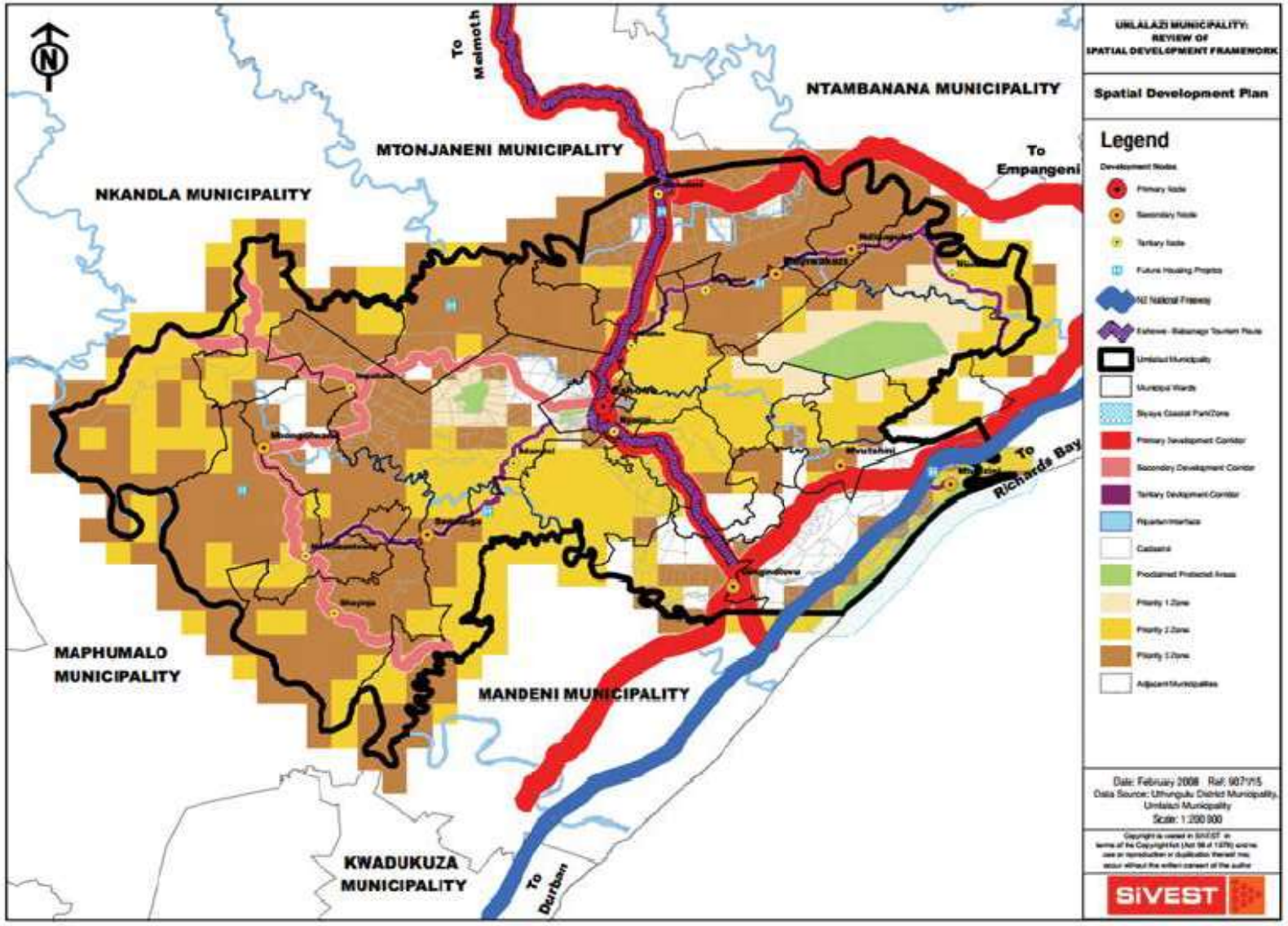
Source: KwaDukuza SDF 2007

Table 35: Umlalazi LM Alignment Aspects

Area of Alignment	Observations
Development Corridors	Mandeni municipality links to the Umlalazi municipality through the N2, P47-6 and P266. The proposed R102 road will improve access between these two municipalities.
Cross Boundary Dependencies	The Umlalazi SDF identifies area adjacent Mandeni municipality as Priority Zone 2 and 3; therefore these two municipalities are in alignment. There is need for environmental protection of the Amatikulu river which flows through Umlalazi Municipality into the North eastern parts Mandeni.
Cross Boundary Co-operation	Mandeni functions as a service centre for the whole of Mandeni Local Municipality and beyond the eNdulinde Hills (the south eastern part of Umlalazi Municipality). There is need for cooperation in service delivery and land use management in the north eastern areas of Mandeni and the southern tips of Umlalazi municipality.
Potential Contradictions	The Amatikulu river which flows south of the Umlalazi municipality is not reflected in the Umlalazi SDF which may affect the conservation efforts of this water body.

Source: Black Balance Projects

Map 38: Umlalazi Cross Border Alignment



Source: Umlalazi SDF 2007

7.8 Consolidated Mandeni Spatial Development Framework

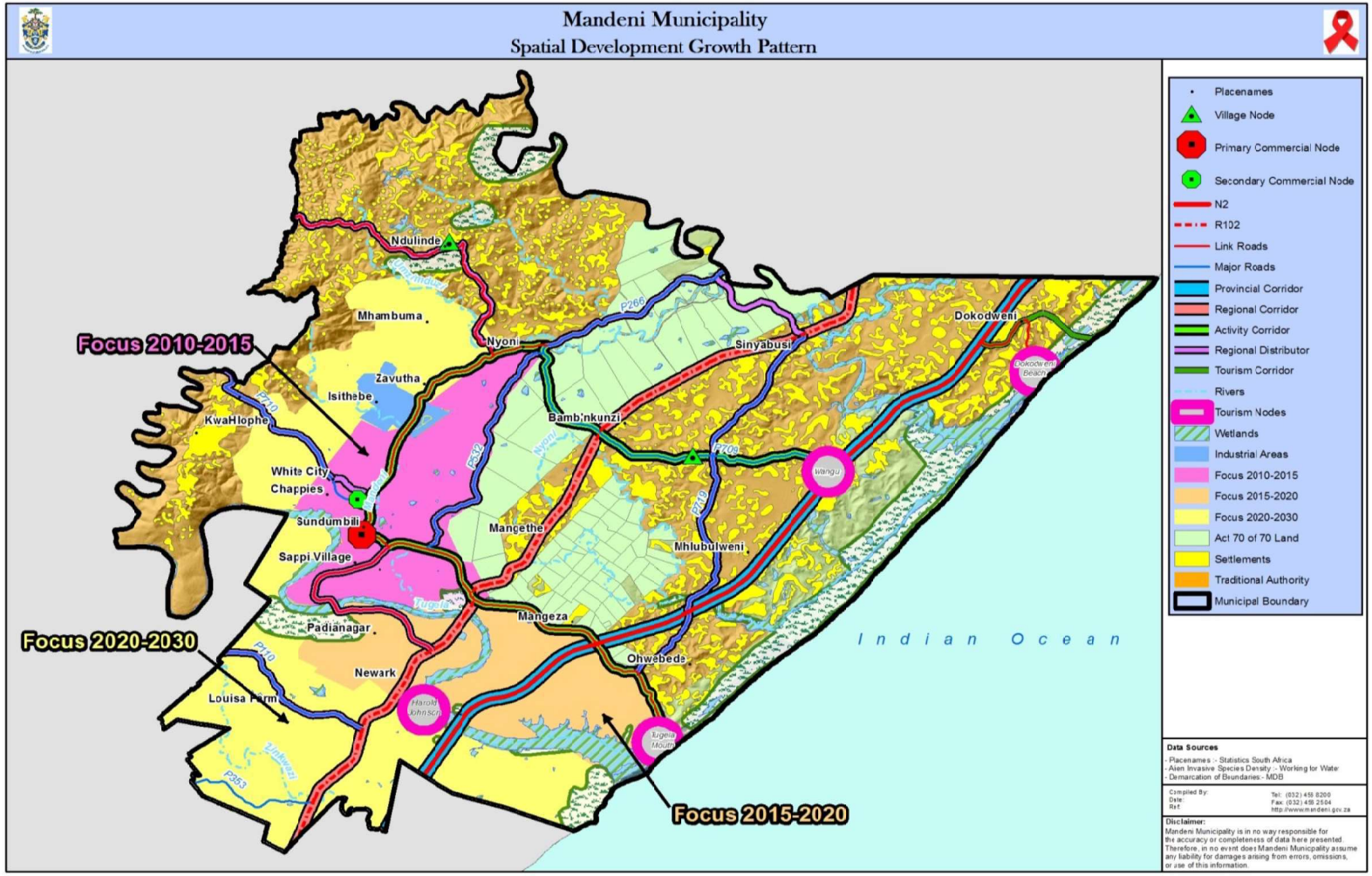
The Mandeni Spatial Development Framework as present on Map 16 below is a culmination of strategic responses to the spatial issues and policies governing spatial planning and development in the Mandeni Municipality. The various proposals are intended to fulfil the development vision of the SDF, which is:

"By 2030 Mandeni will have an **efficient spatial structure** and planning system with **equitable and reliable services**, integrated and **socially beneficial land development** which are balanced with the **conservation of its vital natural resources** (including coastal resources and agricultural land) as the basis for **sustainable economic growth**".

This entails creating an efficient, equitable and sustainable spatial system that attends to the needs of the Municipality, by detailing the Municipality's human settlement needs, environment services and concerns as well as the social and economic thrusts and tendencies in a sustainable manner. The formulation of the Spatial Development Framework included the consideration of policies and legislation at a regional and at a national level, as well as cross border issues that were identified.

The subsequent sections of the Spatial Development Framework Report are intended to guide the implementation of the Mandeni Spatial Development Framework towards its spatial vision.

Map 39: Consolidated SDF Map



Source: Mandeni Municipality: GIS

8. IMPLEMENTING THE SDF

The implementation of the SDF is very important in ensuring that the Municipality achieves its Vision as stipulated in the IDP. Through the IDP, the SDF will influence budgeting and resource allocation and specific interventions will be measured through the performance management system. Practical implementation of the SDF will be achieved through the further detailed planning of special development areas and the Mandeni Land Use Management System, currently being formulated.

8.1 SERVICE LEVEL GUIDELINES

The Mandeni SDF focuses on 6 key areas of spatial implementation, namely:

1. Natural Environment,
2. Service Infrastructure and Transport,
3. Housing and Land,
4. Economic Development
5. Social Development.
6. Tourism Development

The lines and dedicated areas on the first draft SDF should thus have an impact on each of these sectors. The specific impact of various areas indicated on these sectors is briefly indicated below:

Table 36: Service level guidelines

Intervention Zone 1 (Urban Core)	Intervention zone 2 (Urban Periphery)	Intervention Zone 3 (Rural Areas)
NATURAL ENVIRONMENT		
• **Environmental health will enjoy priority focus in this area.** • **Urban pollution hotspots will be redressed and managed.** • **Urban Open Space Systems will be developed and managed.** • **Industry Environmental Management Plans enforced.** **State of the Environment Report with management plans promoted.**	• Settlement pollution hotspots will be redressed and managed. • State of Rivers Reports with management plans promoted. • State of the Environment Report with management plans promoted.	• **Sustainable agricultural and tourism practices promoted and controlled.** • **Impacts of residential villages will be monitored.** • **State of the Environment Report with management plans promoted.**
SERVICE INFRASTRUCTURE		
• **Priority spending on infrastructural upgrading needs in these areas.** • **Infill planning will be encouraged to maximize use of existing infrastructure.** • **All areas are entitled to the highest affordable service levels.** **Roads upgrading and maintenance as well as**	• Basic minimum services standards to all households in this area. • Self-contained services will be promoted until reticulation linkage is possible. • Transport linkages into the	• **Basic minimum services standards to all households in this area.** • **Clustering of bulk support services at key service delivery points.** • **Regional distributors maintained to**

Intervention Zone 1 (Urban Core)	Intervention zone 2 (Urban Periphery)	Intervention Zone 3 (Rural Areas)
public transport system as a transport priority in these areas.	Urban Core will be strengthened.	the highest affordable levels.
HOUSING AND LAND		
• Formal township establishment will be promoted and pro-active public spending on formalisation in these areas will be a priority. • Priority housing development will be promoted in these areas.	• Private formalisation will be supported in these areas. • Long term public spending on township establishment. • Secondary public housing developments.	• Department of Land Affairs programmes promoted and implemented. • Survey of land tenure and housing needs. • Monitor housing conditions on farms. •
ECONOMIC DEVELOPMENT		
• Priority Economic investment is promoted around CBD and key business complexes. • Economic activity will be grouped to enhance thresholds. • Employment and residential opportunities promoted in close proximity of each other.	• Ensure accessibility of households to employment opportunities within Urban Core.	• Agricultural and Tourism activities promoted within these areas. • Regional distributions routes between markets and supply will be upgraded and

Intervention Zone 1 (Urban Core)	Intervention zone 2 (Urban Periphery)	Intervention Zone 3 (Rural Areas)
		maintained.
SOCIAL DEVELOPMENT		
• Regional facilities located within these areas. • Equitable decentralisation of services within this area.	• Ensure accessibility of households to facilities and services within Urban Core.	• Develop accessible key rural services centres.
TOURISM DEVELOPMENT		
• Direct investment and infrastructure along tourism corridor. (ie: coast line)	• Promote areas with tourism potential. • use music festivals to promote local tourism (ie: Dokodweni Beach festival)	• Promote arts are craft at tourism node.

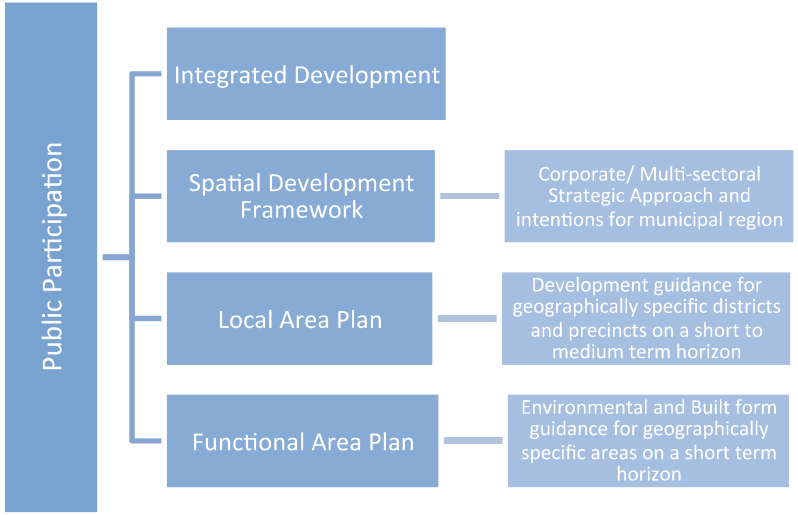
It is important that any spatial responses to the current challenges are practically implemented within these sectors. The list below represents practical strategies which will be employed by each sector to address the core spatial challenges.

8.2 SPATIAL POLICY GUIDELINES

8.2.1 RELATIONSHIP OF THE SPATIAL DEVELOPMENT FRAMEWORK TO LAND USE MANAGEMENT

The purpose of a Spatial Development Framework (SDF) is to inform the development of a Land use Management Scheme. The SDF provides best use scenarios for use of land, and it is the function of the Land Use Management Scheme to regulate these land uses. A SDF therefore does not change the rights of properties but gives guidance and direction for growth of a municipality. It is however necessary to align the Land Use Management System with the Spatial Development Framework to ensure that the objectives of the SDF are met.

Figure 18: Hierarchy of Plans in relation to Mandeni



Source: Adopted from eThekwini Municipality Package of Plans

A Land Use Management System forms part of a larger Integrated Development Planning Process which includes other components such as the following:

- Spatial Development Framework (Main Informant to the LUMS)
- Land Use (Planning) Schemes (Main product guided by LUMS)
- Rates database
- Cadastral and property (registration) database
- Valuation system
- Information regarding the provision of infrastructural services
- Property ownership and tenure
- Environmental management system
- Transportation management system
- Information system GIS

Where the SDF provides direction for expansion of specific land uses or the restriction of development within other areas, the purposes of the Land Use Management System is to manage the use of the land in order to ensure a healthy and safe living environment, whilst minimising the effects of negative externalities. It also acts as a statutory informant to the preferred location of social amenities (including social facilities, and services) to ensure a convenient living environment. Through evaluation of conservation resources, the SDF gives guidance to the prescriptions of the Land Use Management System. At a lowest spatial sale, the land use scheme becomes the regulatory instrument of land use and land development in the Municipality.

This section aims to create a policy guideline framework in order to **assist is municipal decision making during spatial**

development processes. These guidelines will represent the overarching approach to all other, more detailed level spatial planning initiatives such as precinct plans and the Mandeni Land Use Management System.

As a tier of the South African Government, the Mandeni Municipality needs to incorporate and use national spatial guidelines and policies into its local policy first and within this framework formulate additional policy guidelines, which might be required to give effect to the Spatial Development Framework and Strategies. Although not as prescriptive as the Land Use Scheme, these policy guidelines will also provide some spatial standards to be used when engaging in spatial development initiatives. Again, these standards are based on national guidelines with a local translation where indicated.

a) **National spatial policy guidelines** (e.g. SPLUMA & KZN PDA) which is hereby adopted by the Mandeni Municipality as overarching spatial development policy,
b) **Localized spatial policy guidelines** aimed at achieving the strategies associated with the Mandeni Spatial Development Framework (organized within the national frameworks), and
c) **Localized spatial development guidelines**, based on national standard guidelines and local context alike.

8.2.2 COMPONENTS OF LAND USE MANAGEMENT SYSTEM

The Mandeni Municipality is in the final phase of adopting a Land Use Management System extending to areas that were previously not covered by the scheme. The Land Use Management System proposes a number of norms or normative principles which should be viewed more as philosophical consideration during the spatial planning, control and management of land uses. It is important that these norms are addressed and/or illustrated during the evaluation of all land use management consideration.

8.2.2.1 Sustainability Assessment

The principle of sustainability requires the sustainable management and use of the resources making up the natural and built environment.

Land use and development decisions must promote a harmonious relationship between the built and the natural environment while ensuring that land development is sustainable over in longer term period. The principle demands a holistic approach to land development in order to minimise the long-term negative impacts of current land use or development decisions. The long-term adequacy or availability of physical, social and economic resources to support or carry development should be thoroughly investigated. The life cycle costs of land development and its likely side effects on the environment, community, and the economy needs to be understood and taken into account to sustain its benefits, while minimising or mitigating any likely negative impacts.

In the past the planning and management of land use has been characterised by extreme inequality. Not only are principles and norms required to ensure equity in the way that decisions are taken in the future but also that they address the inequitable legacy inherited from decades of planning in the interests of a racial minority.

The spatial planning, land use management and land development norms based on this principle are:

- Land may only be used or developed in accordance with law;
- The primary interest in making decisions affecting land development and land use is that of national, provincial or local interest as recorded in approved policy;
- Land development and planning processes must integrate disaster prevention, management or mitigation measures;
- Land use planning and development should protect existing natural, environmental and cultural resources;
- Land which is currently in agricultural use shall only be reallocated to other uses where real need exists and prime agricultural land should remain in production.

8.2.2.2 The principle of equality

The principle of equality requires that everyone affected by spatial planning, land use management and land development actions or decisions must enjoy equal protection and benefits, and no unfair discrimination should be allowed.

In the past the planning and management of land use has been characterised by extreme inequality. Not only are principles required to ensure equity in the way that decisions are taken in the future but also that they address the inequitable legacy inherited from decades of planning in the interests of a racial minority.

The spatial planning, land use management and land development norms based on this principle are:

- Public involvement in land use planning and development processes must be inclusive of all persons and groups with an interest in the matter being decided;
- Land use regulators and planning authorities must ensure that benefits and opportunities flowing from land development are received by previously disadvantaged communities and areas;
- The appropriateness of land use must be determined on the basis of its impact on society as a whole rather than only the applicant or immediate neighbours.

8.2.2.3 The principle of efficiency

The principle of efficiency requires that the desired result of land use must be produced with the minimum expenditure of resources.

This principle aims to achieve efficiency in institutional arrangements and operations, adopted procedures, the settlement form or pattern, and the utilization of man-made or natural resources during land planning and development.

The spatial planning, land use management and land development norms based on this principle are:

- Land use planning and development should promote the development of compact human settlements, combating low intensity urban sprawl;
- The areas in which people live and work should be close to each other; and
- Plans of contiguous municipalities and regions should relate positively to each other.

8.2.2.3 The principle of integration

The principle of integration requires that the separate and diverse elements involved in development planning and land use should be combined and coordinated into a more complete or harmonious whole.

The principle of integration reflects the need to integrate systems, policies and approaches in land use planning and development. This principle finds particular expression in two areas. Firstly it requires that the planning process is integrated, taking into account the often disparate sectoral concerns, policies and laws and their requirements, and reaching conclusions that are efficient and sustainable from a management and governance point of view. Secondly it requires an integrated `on the ground' outcome, one that breaks down not only the racial and socio-economic segregation that characterise our country but which also look at spatial integration of different land uses, places of living with places of working and shopping and relaxing.

The spatial planning, land use management and land development norms based on this principle are:

- Land use planning and development decisions should take account of and relate to the sectoral policies of other spheres and departments of government.
- Land use and development should promote efficient, functional and integrated settlements;
- Land use and development should be determined by the availability of appropriate services and infrastructure, including transportation infrastructure;
- Land use and development should promote racial integration;
- Land use and development should promote mixed use development.

8.2.2.4 The principle of fair and good governance

The principle of fair and good governance requires that spatial planning; land use management and land development must be democratic, legitimate and participatory.

Land use planning is a centrally important government function, directly affecting the lives of all people. It is therefore particularly important that it is characterised by fairness and transparency and that people are afforded a meaningful right to participate in decisions. When public authorities formulate new plans, they must put in place processes that actively involve citizens, interest groups, stakeholders and others. Also, where land development projects are initiated by the private and non-governmental sectors, there must be procedures that ensure that interested parties have an opportunity to express their views or to object.

In the interests of good governance it is essential that there be effective coordination between the different sectors and spheres involved in land use and development. The greater the coordination, cooperation and transparency of the planning process within government the greater will be the prospects of members of the public being able to engage with the decision making in a constructive manner.

The spatial planning, land use management and land development norms based on this principle are:

- Affected parties have a right to access information pertinent to land use and development plans that are being considered by land use regulators;
- Capacities of affected communities should be enhanced to enable them to comprehend and participate meaningfully in development and planning processes affecting them;
- Decisions must be made in the public domain, with written reasons available to any interested party on request and no planning decisions taken behind closed doors;
- The names and contact details of officials with whom the public should communicate in relation to spatial planning, land use management and land development matters must be publicised;
- Land use and development decisions must be taken within statutorily specified time frames; and Accessible participatory structures should be created to allow interested and affected parties to express their concerns or support for any land use or land development decision at sufficiently early stage in the decision-making process.

8.2.2.5 OPERATIONALISING THE LUMS PRINCIPLES

It is clear that it must be incumbent on authorities concerned with spatial planning and land-use management to apply the principles and norms effectively. Structures, institutions and processes must be designed to ensure that the principles and norms are actualized. The best way to do this, taking into account the specific South African situation is to establish land use regulators within the municipal, provincial and national government to apply the principles in specific planning and land-use situations.

8.2.2.6 Capacity building

A key success factor in the implementation of the Mandeni Spatial Development Framework as well as the proposed spatial development guidelines will be the building of planning capacity in all three spheres. This will require dedicated capacity in both national and provincial government, as well as increased cooperation between government and the planning education institutions. It is foreseen that the duty to build capacity in the municipal sphere, will especially be the duty of provincial governments, in the light of section 154(1) of the Constitution, 1996. The proposals in the Planning Professions Bill enabling the development of a continuing professional development programme for the planning profession will be very helpful in this regard.

8.2.2. 7 Monitoring and Review

A critical role of the Mandeni management structures will be the monitoring and review of the implementation of the principles and norms. The purpose and form of a monitoring system should change over time as the system matures or as the level of understanding and appreciation of the system develops.

8.2.2.8 New Spatial Management Mechanisms

Mandeni Municipality will have an indicative SDF ***plan*** showing desired patterns of land use, directions of growth, urban edges, special development areas and conservation-worthy areas as well as a Land Use ***scheme*** recording the land use and development rights and restrictions applicable to each erf in the municipality. The

plan should be flexible and able to change to reflect changing priorities of the municipality, whereas the *scheme should be tighter* and only amended where required for a particular development and where certain other requirements are met, with the most important of these requirements being conformity with the plan. The plan should thus influence the contents of the scheme as and when required, rather than act as the direct source of rights and controls itself.

There must be a strong link between both the plan and the scheme and the municipality's *budget* and *capital expenditure framework*. On the one hand the budget will record the municipality's income and expenditure and on the other the capital expenditure framework will indicate planned spending on infrastructure and services. These two elements are important for land use planning for two reasons. Firstly, the rights recorded in the municipality's scheme determine the value of the land and that value in turn forms the basis of the rates that the municipality can charge, which form the major part of its income stream. Secondly, any new land development or land use change has to be adequately serviced by infrastructure and the capital expenditure framework will indicate where the municipality is able to spend funds on the upgrading or extension of that infrastructure.

Mandeni Municipality must have land use management system and that system must include at least a *scheme* recording the rights and restrictions applicable to erven within the municipal area. Any land development that exceeds these rights and restrictions will require the consent of the relevant land use regulator. The rights and restrictions must relate at least to land use, floor-area ratio and building height. Every scheme shall consist of a map and a set of regulations. The scheme is a key part of a municipality's regulatory powers and must therefore be formalised as a bye-law of the municipality. The rights to a particular use and development *of land should not be granted in perpetuity*. There must be clear provisions to the effect that once use and development rights have been granted they must be exercised within a specified time frame. In addition rights already held by landowners but not yet exercised must lapse within a specified time period unless they are realized in the interim.

The *scheme* is an instrument that can be either a very complex and detailed document accommodating a wide range of different land uses and the relatively strong institutional capacity of a metropolitan municipality or a much simpler document suited to the needs and capacity of smaller local or district municipalities in primarily rural areas.

The way in which the spatial development framework and scheme relate to individual land development or land use change applications will depend on whether or not the proposed change is consistent with the spatial development framework and, where the spatial development framework is silent, on the applicable national principles and norms. Every application will obviously be for a development that is in some way inconsistent with the scheme, as otherwise there would be no point in making an application: the owner is entitled to exercise the rights already recorded in the scheme. An applicant is only required to apply to a land use regulator where he or she wishes to develop the land or change its use in a way which is in conflict with the relevant scheme.

Where an application is made for additional land use and development rights the municipality or tribunal shall approve that application, subject to reasonable conditions, where the

application is consistent with the express provisions of the spatial development framework. Where the municipality or tribunal however approves an application that is not consistent with the spatial development framework it may charge the applicant a surcharge over and above the municipality's standard bulk services connection fee, which can be up to 5% of the capital cost of the development.

Where a landowner holds a use and development right in terms of a scheme he or she must exercise that right within a five-year period after it is granted. After five years the right lapses and the landowner is not entitled to any compensation for the loss of that right. Where a person holds a right in terms of an existing scheme at the time that this legislation comes into effect and has not exercised the right within a five year period the right similarly lapses. Application may however be made to the appropriate land use regulator for permission to extend the period of lapsing by no more than three years, provided that the applicant can provide sound reasons, motivated in terms of the principles and norms to be confirmed in the new law.

Where land is used or developed contrary to the applicable scheme the land owner must within one year of the scheme coming into effect obtain the necessary permissions from the municipality. In the event that he or she is not able to obtain that permission the use or development of the land will constitute an offence. The municipality will then be able, subject to giving the landowner a month's written notice, to demolish the illegal structure or to impose a fine of R50 per square metre per week of the illegal use or structure.

There is effectively a presumption in favour of planned development as opposed to a presumption against development. This has the twofold effect firstly of emphasising the importance of planning, and secondly of not necessitating elaborate control systems in areas in which there is little development pressure.

Every decision of a land use regulator must be derived from and based on the *general principles and norms for land development*. The normative basis for planning decisions provided by principles and norms ensures coherence and uniformity in the planning system across the country.

8.2.2.9 Policy guidelines for Land Use Control Procedures

A critical problem facing many applicants and approvals bodies is the overlap between the procedures for land use change or land development approval, in terms of planning legislation, and those required in terms of the environmental impact assessment (EIA) provisions of the Environment Conservation Act. As both the Department of Environment Affairs and Tourism and the DLA are simultaneously rationalising and reforming the legislative frameworks for environmental management and spatial planning, land use management and land development respectively there is an extraordinary opportunity to ensure that these two procedures are aligned. This will have the following important effects:

- The public will better serve both as applicants and objectors. This will increase the quality and extent of public involvement in decision-making and will improve the quality of applications.

- Cooperative governance will be increased, leading to a more efficient use of scarce human resources in the public sector and reducing negative `turf' squabbles.
- The quality of environmental and planning decisions will improve. It will be more difficult for an authority to justify their decision solely on `environmental' or `land use' grounds. Instead they will have to adopt a more integrated approach.

Simply collapsing the procedures for environmental impact assessments (EIAs) and land use change or land development into one would be difficult. Nevertheless it is possible that in situations where both EIA and land use change or land development permission are required the procedures to be followed by the applicant, and to be engaged with by the authorities and the public, are as closely aligned as possible. Locating the function within one sphere of government, and one institution, would enable that body to determine practical approaches to the problem that match its own capacity and resources, within the framework set by national government. A number of important steps have to be taken though to ensure that the Mandeni Municipality is in fact able to fulfil this responsibility effectively. These are:

- Mandeni Municipality must be authorized to decide on EIA applications. Currently only provincial governments have this power. This ought to be done as part of a programme of environmental capacity building within the municipality.

- Mandeni Municipality must incorporate a strategic environmental assessment into the spatial development frameworks, forming part of the IDPs. If environmental concerns are expressly incorporated into the IDP process, and are then reflected in the controls and mechanisms forming part of the land use management system that would immediately resolve many environmental and planning conflicts.

- Both the new environmental and new land use legislation must require that the municipality establishes one committee to deal with EIAs and land use decisions, thus preventing the situation at a local level where different sets of councillors are involved in decision making for the two types of process.

The outcome must be that in those situations where both a land use or development approval and an EIA are required the applicant should only have to follow one procedure, only one body should make the final decision and, where the application leads to an appeal, there should be a single appeals body. This arrangement should not negate the fundamental responsibilities of each of the two national departments, DEA&T and DLA, to ensure the wise use and management of the resources under their respective authority. It will however demand an approach from both Departments that is more `hands off' in relation to the actual taking of the decision, but which concentrates more on their role of providing clear guidelines and a rigorous monitoring and evaluation system. The intervention powers of both Departments would be retained, in the event of their concerns, as reflected in the principles and norms contained both in the new land use legislation and the National Environmental Management Act, are ignored or inappropriately applied.

8.3 Components of Land Use Management System

A Land Use Management System can be made up of the following components:

- A Spatial Development Framework
- A Land Use Management Framework
- Cadastral and property database
- Information regarding the provision of services
- Property ownership and tenure
- Environmental issues and requirements
- Transportation requirements
- A Land Use Scheme
- Rates database

Not all LUMS will have all of the above components. It will be dependent on where the LUMS is located and the level of complexity.

8.3.1 Levels of LUMS

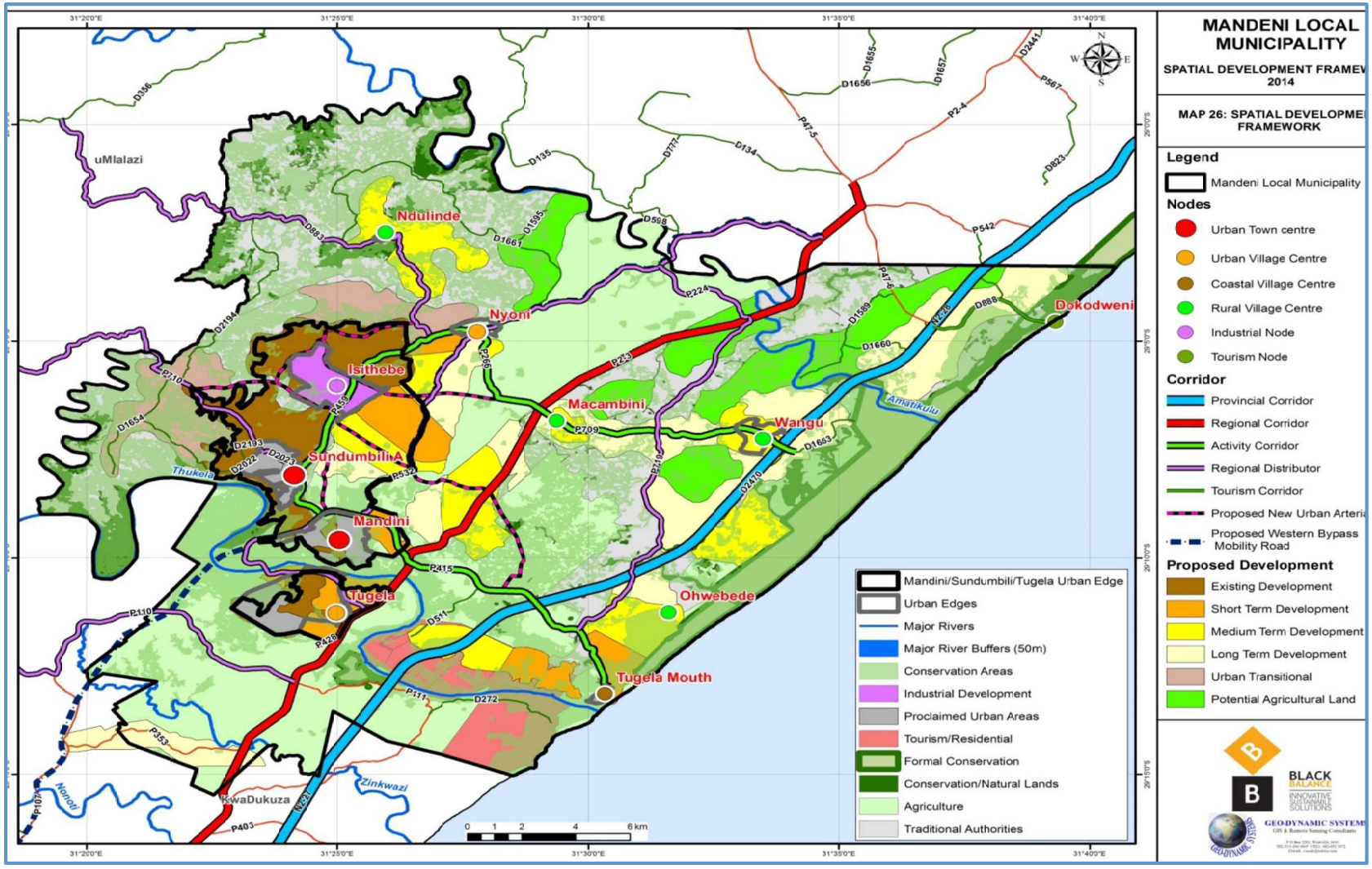
The LUMS has recognised the different levels of complexity of land use management required, depending on the area. The basic concept is a continuum of Planning Schemes which allows for land to be zoned over a whole municipality, whether it is an urban, peri-urban or rural area. The different levels of LUMS are described below:

Table 37: levels of LUMS

	Type of scheme	Description	Scheme intention	Priority area
COMPLEX APPROACH	Comprehensive Planning Scheme	For a more complex urban and metropolitan areas. It also entails a greater number of zones, regulations and management overlays based on the need for a finer grain of land use differentiation, and on differences of intensity as well as a whole range of different zones and districts within those zones.	Mandeni • Residential • Commercial • Business • Industrial • Mixed uses	1
			Sundumbili • Residential • Mixed use	1
			Tugela • Residential • Commercial	1

			Isithebe • Residential • Industrial	
	Primary	A Primary Planning Scheme would be applied to small towns and settlements where a greater level of land use management is required.	Tugela Mouth • Private residential • Commercial • Estates • Tourism	1
			Nyoni • Residential • Commercial	2
SIMPLE APPROACH	Elementary	Involves fewer zones and regulations and is normally applicable to small rural settlements, emerging settlements, unproclaimed towns and areas where there is settlement but either no or imprecise cadastral boundaries.	Wangu • Residential • Commercial	2
			Dokodweni • Residential • Commercial • Tourism	2
			Macambini • Residential	3
			Ndulinde • Residential	3
	Rural	This is the most basic of the planning schemes and may just comprise three or four different land use zones	All rural areas • Residential	4

Map 39: Scheme Typology



Source: Mandeni Municipality: GIS

8.4 SUSTAINABILITY ASSESSMENT

The Department of Agriculture, Environmental Affairs, and Rural Development (DAEARD) has provided a Sustainability Appraisal tool which it defines as follows (the entire Section is sourced and quoted from DAEARD, 2009):

- Sustainability Appraisal [SA] provides a critical evaluation of the performance of a Plan against predetermined social, economic and environmental criteria so that the potential impacts of the Plan be evaluated and its performance can be improved. SA seeks to help inform decision-making by providing information on the potential environmental implications of policies, plans or projects.
- SA's help to ensure that plans, strategies and proposals take into account the principles of sustainable development. The process permits a qualitative assessment of a plan, strategy, or proposal against independent sustainable development objectives.
- Sustainability Appraisal can be an effective technique for integrating sustainability considerations into plan making and evaluation, and has the advantage of being quicker than standard Strategic Environmental Assessments, producing a less rigorous, though still valuable, broad analysis, usually in the form of a checklist with accompanying explanation. This allows fairly rapid assumptions to be made about the sustainability impact of individual policies and plans and, indicates where policy adjustments need to be made.
- The SA checklist comprises a list of statements related to economic, social and environmental issues and concerns that are based on the Municipality's Environmental Policy, the National Environmental Management Act Principles and the Development Facilitation Act Principles. Adjacent to the statements column is a column that relates to the qualitative assessment i.e. whether the proposed plan, policy or proposal has a Very positive, Positive, Neutral, Negative or Highly Negative impact or effect against each statement.
- An example of a positive impact might be the provision of work opportunities in close proximity to residential areas thereby reducing travel costs and impacts. A negative impact might be destruction of habitat through urban expansion. If due to the nature of the activity, a statement has no bearing on the activity concerned, then a Neutral or No Impact statement can be used.
- A description of the potential impacts and effects on the sustainability criteria should be provided in the commentary column to justify the scoring of the potential effect or impact.
- Sustainability Appraisal is not a rigid system but a practical approach to ensure that significant direct and indirect impacts of a programme are considered. It is important not to labour over it. The level of resources involved in each appraisal should be directly proportionate to the policy or programme.
- Individual Appraisal's should be done for the plan as a whole and for the major development changes or options proposed within the plan.

8.4.1 Mandeni Spatial Development Framework against the strategic priorities of the National Strategy for Sustainable Development.

NSSD 1 STRATEGIC PRIORITY 1: ENHANCING SYSTEMS FOR INTEGRATED PLANNING AND IMPLEMENTATION	
Key Environmental Issue: Limited Capacity and Systems for Integrated Planning and Implementation to achieve Sustainable Development	**Integration into Mandeni SDF**
Insufficient intergovernmental co-operation and co-ordination for effective environmental governance; Poor monitoring and evaluation systems to assess progress towards sustainability; Insufficient resources and capacity made available for environmental management; Limited integration of sustainability into development planning.	
Sustainability Objective	
Enhanced and effective environmental governance, institutional structures and systems to achieve integrated planning and implementation.	
Sustainability Criteria	
Environmental sustainability criteria are integrated into Policies, Plans, Projects and decision making.	Yes
Co-operative environmental governance structures and mechanisms promote integrated planning and ensure efficient and effective implementation of environmental functions and responsibilities.	Partially
Financial resources and capacity enable the implementation and management of environmental functions and responsibilities.	No
Municipal capital investment projects comply with relevant environmental legislative requirements.	To be adhered to
Communities are informed, empowered and involved in the process of democratic environmental governance.	Partially
Access to environmental information is facilitated and encouraged.	Partially
Monitoring and evaluation systems assess and report on the progress towards sustainability.	Partially

NSSD 1 STRATEGIC PRIORITY 2: SUSTAINING OUR ECOSYSTEMS AND USING NATURAL RE+SOURCES EFFICIENTLY	
Key Environmental Issue: The Degradation of Land and Natural Resources	**Integration into Mandeni SDF**
Inappropriate land use and poor land management is resulting in land degradation, the loss of natural resources and reduced potential for the provision of ecosystem goods and life support services. This includes the loss of agriculturally productive land and a decline in biodiversity which has significant social and economic impact.	
Sustainability Objective	
The use of natural capital is compatible with the maintenance of ecosystem functionality and natural resources are protected and restored.	
Sustainability Criteria	
Areas identified as being essential for the persistence of biodiversity and for the provision of ecosystem goods and services are valued, protected and continually enhanced.	Yes
Degraded areas are identified, rehabilitated and managed to promote land productivity	Partially
High potential agricultural land is protected and rehabilitated for sustainable agricultural production.	Yes
Agricultural production is enhanced and increased through environmentally sustainable agricultural practices.	Yes
Areas of geotechnical, geological or instability risks are identified and avoided in land development.	No
Compact land development patterns use land efficiently.	Proposed in SDF
Key Environmental Issue: Excessive Water Demand Exceeds Available Supply	**Integration into Mandeni SDF**
Current water demand from the Tugela catchment area is exceeding sustainable levels and is stressing the aquatic ecosystems. Rapid urban & industrial expansion and population growth is increasing demands and this is compounded by inefficient water use and wastage. Degraded catchments and aquatic ecosystems diminish the ability of the natural systems to sustainably supply water. Dams and inter basin-transfer schemes increase costs of providing water to the consumers and negatively impact on overall river health and natural systems	

Sustainability Objective	
The ability of aquatic resources to provide water is maintained within the limits of sustainability.	
Sustainability Criteria	
Wetland areas, streams and rivers are protected, rehabilitated and managed to maintain ecological functioning.	Yes
Flood prone areas are managed to promote ecosystem goods and services, to minimise flood risks and impacts.	Partially
Water demand management results in minimised water loss and optimised water conservation.	To be applied
Everyone has access to the minimum supplies of potable water needed to maintain their health and well-being.	No
Catchment and river management policies and guidelines integrated into land use and development planning.	Partially
Equitable and fair access to water supplies is provided for all water users.	Partially
Key Environmental Issue: Reduced Water Quality	**Integration into Mandeni SDF**
Land degradation, Industrial effluent, and, poor sewerage, solid waste and storm-water management are impacting on water and aquatic ecosystem quality. This is resulting in declining social and economic conditions including increased health risks and costs; decreased river health; increased water treatment costs; increased risk of liability to the Municipality; increased water charges; and, decreased investor interest.	
Sustainability Objective	
Water quality in all aquatic ecosystems in the District is significantly improved and maintained.	
Sustainability Criteria	
Bacteria and pathogens in all aquatic systems do not pose a significant risk to health and wellbeing.	Investigation required
Nutrient concentrations and loads in all aquatic systems reverse current unacceptable trends of eutrophication.	Investigation required
Aquatic ecosystems are in a functional and healthy state.	Investigation required

NSSD 1 STRATEGIC PRIORITY 3: TOWARDS A GREEN ECONOMY	
Key Environmental Issue: Economic Growth that is not Linked to Sustainable Resource Use and Environmental Impact	**Integration into Mandeni SDF**
Resource and ecosystem degradation due to over-exploitation of natural capital. Persistent poverty, unemployment, social dependency and inequality. An economy that is based on intensive resource consumption is depleting non-renewable and renewable resources beyond sustainable levels.	
Sustainability Objective	
Economic goals based on ecological sustainability and built on a culture that recognises that socio-economic systems are dependent on and embedded in ecosystems.	
Sustainability Criteria	
An environmentally sustainable economy promotes distributional equity, is resource efficient and provides for the rehabilitation and sustainable management of natural capital.	Yes
Absolute poverty is eradicated and the wealth gap is reduced.	Partially
A low-carbon economy that relies on clean, renewable and efficient energy sources and transport options.	No
A resource efficient economy that optimises its use of water while significantly reducing waste generation.	Partially
An equitable and broad range of employment opportunities exist that provide people with an income to support themselves and their families.	Partially