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1. **SECTION 1-THE PLANNING CONTEXT**

1.1. **INTRODUCTION**

The rural areas of eThekwini Municipality are a vast hinterland of 1,500 km² forming an outer belt in the north, west and southwest of the eThekwini municipal area, and include a number of “peri-urban areas”. The concept “rural areas” is initially used loosely as the study considers appropriate definition which will be adopted by the municipality.

The Terms of Reference indicate that competing land uses in the rural areas have generally resulted in the loss of productive agricultural land. Top on the list of such pressures are industrial and housing development land uses. The rural areas in general, have rich natural assets which are being threatened by the lack of appropriate land use management.

Due to haphazard land allocation communities within the study area, particularly those in informal settlements and under the traditional authorities, have often expanded towards environmentally sensitive areas, and into areas best designated for different land uses other than residential.

 Whilst, on the one hand, there is clear need for conscious planning to be afforded these areas, there is also a need to investigate the potential of new agricultural activities that will respond to sustainable livelihoods, food security, renewable energy and importantly adapt to the climate challenges.

A lot of rural settlements within the study area are sprawling and becoming peri-urban in character and others have densified to the same levels as fully fledged urban areas. The servicing standards have remained unchanged for a long time resulting in uninhabitable environments, especially in high density rural settlements. Some settlements locate next to high mobility roads and illegally gain direct access from these roads; often resulting in road accidents and fatalities.

There is therefore a need to redefine rural densities, boundaries and the role and structure of the rural areas of eThekwini Municipality to improve the social, spatial and economic contribution of rural areas in eThekwini municipality.

To deal with the multi-dimensional issues of planning for these dynamic areas as eThekwini Municipality has acquired the services of multi-disciplinary team to craft a broad strategic framework for development of rural areas. The team is composed of:

- **Mbongeni Hlongwa** of Gabhisa planning and Investments responsible for Project Coordination, Spatial Planning and Land Use issues.
- **Dr Pearl Sithole** responsible for Institutional issues.
- **Luvuyo Siqhwala** of Isibani Development Planners responsible for Social framework
- **Mahommed Kajee** of ARUP responsible for Transport Planning.
- **Patrick Addo** of NDG-AFRICA responsible for Environment and Agriculture
- **Deon Govendor** of BVI responsible for Infrastructure Planning
- **Tindall Kruger** of Strategic Planning Resources responsible for Economic Development
- **Riaan Botes** of GDS responsible for GIS support
1.2. THE STUDY AREA

eThekwini Municipality is located on the east coast of South Africa in the province of KwaZulu-Natal. The eThekwini Municipal is surrounded by three district municipalities, iLembe in the north, Ugu in the south and uMgungundlovu in the west. The area of focus is the portion of the Municipality that lies outside of the urban development line which is considered rural.

Figure 1: Locality Plan
1.3. PURPOSE AND OBJECTIVES OF THE PROJECT

1.3.1. The Aim of the Project

The purpose of this project is to prepare a Rural Development Strategy which will amongst other things, provide an accepted definition of eThekwini rural area and develop an overall vision of rural areas. The overall vision will then inform the role of the rural areas and outline an appropriate response to such role and vision by the different stakeholders.

1.3.2. Objectives

The overall objectives of the study are to:

- Undertake international and local literature review to understand rural development strategies undertaken in areas with similar challenges to eThekwini Municipality.
- Define the character and challenges of eThekwini Municipal rural areas and assess the successes and failures of the approach used in previous strategies.
- Clearly define "rural" and the rural boundaries within the eThekwini Municipality taking into account the relationship between rural, peri urban and urban areas and the eThekwini City Densification strategy (and other relevant spatial strategies such as the recently identified Integration Zone).
- Develop a rural framework that aligns to the city's vision and develop rural strategies that promote sustainable economic development, protection of the environment, food security and sustainable settlement patterns with associated community facilities.
- Examine the provision of appropriate services for the rural areas.
- Understand legal and land issues that affect land use management.
- Develop institutional arrangements to ensure effective land management and service delivery.
- Develop land use guidelines and identify priority areas to be further investigated for detailed planning.
- Identify areas for further densification and areas where densification is to be discouraged.
- Review the hierarchy of rural nodes and identify an appropriate land use mix and densities to support rural nodal development.

1.3.3. Areas of Focus

In meeting the above objectives, the Rural Strategy process investigated and advised on:

- Spatial planning and land use management tools.
- Settlement pattern, housing needs.
- Land Legal issues and Institutional arrangement.
- Environmental Management.
- Agriculture, LED, renewable energy, sustainable livelihoods.
- Tourism and recreation analysis.
- Traffic and Transportation Analysis.
- Community needs and public social facilities.
- Infrastructure sector demand and supply analysis.
- Climate change adaptation and mitigation.
1.4. THE PROCESS

The project process was composed of various milestones, namely:

- Inception
- The Status Quo being undertaken in two stages:
  - Stage 1: research analysis
  - Stage 2: Local Situational Analysis of eThekwini Rural areas
- The Strategic Vision and the role of the Rural Areas
- The Rural Spatial Framework
- Implementation Plan
- Phasing and Budgeting
- Close Out

This is a consolidated report covering all the above aspects of the Rural Strategy. It starts by considering the spatial context of the rural areas as highlighted in the various municipal documents, particularly the Municipal SDF and the IDP and then goes further to reflect on the vision espoused in such studies before a proposition is made on how the future of the study area could be shaped.
2. SECTION 2: POLICY FRAMEWORK

2.1. NATIONAL KEY POLICY FRAMEWORK

There are a number of National and Provincial policies that have impact on the development of a Rural Strategy. This section of the report discusses some of these policies.

2.1.1 National Development Plan 2010
The National Development Plan (NDP) is South Africa’s plan to address poverty and reduce inequality by 2030 through uniting South Africans, unleashing the energies of its citizens, growing an inclusive economy, building capabilities, enhancing the capability of the state and leaders working together to solve complex problems.

The Rural Strategy will therefore play a pivotal role in assisting the municipality to achieve the long-term goals set out in the NDP. The strategy will develop long-term goals, objectives and strategies which will address the core issues raised by the NDP.

Chapter 6 of NDP refers to inclusive rural economy. It suggests, amongst others, the following objectives:

- An additional 643,000 direct jobs and 326,000 indirect jobs in the agriculture, agro-processing and related sectors by 2030.
- Maintain a positive trade balance for primary and processed agricultural products.

It elaborates that the Rural economies will be activated through improved infrastructure and service delivery, a review of land tenure, service to small and micro farmers, a review of mining industry commitments to social investment, and tourism investments.

The simple fact that a chapter of the National Development Plan focuses on rural development is significant and suggests that the government acknowledges the importance of these areas in the development of the country as a whole. The current approach of government to rural development is focussed on agriculture, but it is suggested that in the case of rural eThekwini a much broader perspective on what rural development entails should be explored.

2.1.2 Spatial Planning And Land Use Management Act 2013
National policy on Spatial Planning currently focuses on the rationalization of a fragmented system of land use and related laws. The current fragmented spatial pattern of human settlement and the associated urban sprawl is a direct consequence of the skewed and inappropriate planning legislation of the past.

The LUMS law prevails over provincially applicable planning laws, such as the Town Planning Ordinance, No. 15 of 1985. It lays down national policy, norms and standards as well as frameworks on land use, and therefore falls within the ambit

1 The degree of such powers is still under discussion
of section 146 of the Constitution. At a local level, it provides a framework for the preparation of area specific SDFs and Land Use Management System (LUMS).

2.1.3 Comprehensive Rural Development Strategy 2009

The goal of the Comprehensive Rural Development Programme (CRDP) is to achieve social cohesion and development by ensuring improved access to basic services, enterprise development and village industrialisation. The CRDP implements broad based-agrarian transformation focussing on community organisation and mobilisation as well as strategic investment in economic and social infrastructure. The CRDP proposes an approach that addresses the needs of the person, household, community and space. It is built on the premise that rural areas in the country have the potential to be developed in a way that generates jobs and economic opportunities, thus providing an alternative to the urban centres, and contributing to the reduction in rural urban migration. Furthermore, although agriculture plays a significant role in rural development, the CRDP proposes diversification of the rural economy, according to conditions prevailing in different areas.

The CRDP consists of three phases:
- Meeting basic needs
- Enterprise development
- Establishment of village industries and creation of access to credit facilities.

The programme commits itself to ensuring that at least one person in each rural household where the CRDP is being implemented is employed, for a minimum period of two years. Job creation at phase one is driven mostly by construction of basic services infrastructure and food security initiatives.

The department together with other sector departments and social partners has made significant progress in the implementation of phase one, but the transition to the second phase, enterprise development, has progressed slowly. This is a critical area that will ensure sustainability of the programme.

To ensure sustainability, communal ownership, and effective contribution towards the overall objectives of developing rural areas, the department enters into social compacts with the community, as well as contractual relationships with unemployed community members.

To address the issue of food security, the department has crafted its plans around ensuring sustainable land reform. This is aligned with the CRDP, thereby making a substantive contribution to the availability of food for all, providing access to job opportunities and regular incomes.

2.1.4 The Comprehensive Plan For The Development Of Sustainable Human Settlements 2004


This program seeks to use housing delivery as a means for the development of sustainable human settlements in support of spatial restructuring. It moves beyond the provision of basic shelter towards achieving the broader vision of integrated, sustainable and economically generative human settlement systems at both local and regional scales. The following are fundamental tenets and underlying principles of this approach:
- Progressive informal settlement eradication;
- Promoting densification and integration in urban centres;
- Enhancing spatial planning in both urban and rural contexts;
- Enhancing the quality and location of new housing projects;
• Supporting urban renewal programmes; and
• Developing social and economic infrastructure.

This policy will play a major role in peri urban areas and those that require densification approaches.

2.1.5 National Environmental Management Act (NEMA)

The key principles of NEMA include the following:

• Environmental, social and economic sustainable development;
• The protection of natural resource and the maintenance of natural systems;
• The provision of access to resources and environmental management that puts people and their needs first.

These principles are critical for undertaking the Environmental Impact Assessments (EIA) and the Environmental Management Framework (EMA) which are critical documents for the environmental conservation and protection of land within the municipality, thus ensuring development is adhered to in developable land and not in environmentally sensitive, undevelopable land. This piece of legislation is paramount in the preservation of critical environmental areas of eThekwini Municipality.

2.1.6 National Land Transport Act

The NLTA list the functions of the three spheres of government with a key focus on public transport. According to Section 11)b)vii), the provincial authority is responsible for the implementation of the provincial integrated development strategy and public transport strategy, with due attention to rural areas with focus on less capacitated municipalities.

11)b)vii) ensuring implementation of the provincial integrated development strategy and public transport strategy, with due attention to rural areas, with the focus on less capacitated municipalities or those that do not fulfil their responsibilities in respect of transport service delivery, either by direct implementation or assistance under paragraph (v);

In the municipality context, there are no explicit directives regarding rural transport. Rather, rural transport is implicit in all the functions of a municipality as contemplated in Section 11)c),14, 15, 16, 17 and 18.

2.1.7 Rural Transport Strategy For South Africa 2007

The Rural Transport Strategy for South Africa is the national guideline document for transport planning in rural areas. The two Main Rural Transport and Development Strategic thrusts are:

• Promote Coordinated Rural Nodal and Linkage Development
• Develop balanced and sustainable rural transport system.

According to the strategy document “The Rural Transport Strategy for South Africa (RTSSA) specifically indicates a need to “move beyond roads” and start exploring innovative and/or integrated interventions to address rural access and mobility needs in a sustainable manner.”

Four Broad Action Plans have been developed each with its own intervention areas. These action plans are:

• Rural Public Transport Action Plan
• Rural NMT Action Plan
• Rural Freight Action Plan
• Rural Access Road Action Plan
2.1.8 National Scholar Transport Policy (Final Draft) 2009

The National Scholar Transport Policy provides a list of policy statements regarding scholar transport and an implementation framework plan.

The policy considers, amongst other items, the roles and responsibilities of the various stakeholders, operating licenses, safety and law enforcement.

The implementation framework provides guidance on vehicle specifications, driver certification, institutional arrangements and monitoring and evaluation.

Regarding vehicle specification the policy document states - "The use of vehicles other than buses, minibuses and midi-buses should also be considered for the transportation of scholars. Although it is an offence according to the National Road Traffic Act to transport any person for hire and reward in a light delivery vehicle (LDV), in certain areas and under certain conditions the MEC should give permission to use LDVs suitably modified to SABS standards, as well as animal drawn carts, such as donkey carts."

2.2. PROVINCIAL POLICIES

At Provincial level, the strategy is guided, by amongst others, the following key pieces of legislation and policies:

- Provincial Spatial Planning Guidelines 1-8;
- Provincial Growth and Development Strategy; and
- Provincial Spatial Economic Development Strategy;
- KZN LUMS/Schemes Guidelines.
2.2.1 Provincial Spatial Planning Guidelines 1 To 8 2009

The Provincial Spatial Planning Guidelines 1-8 are:

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<th>KZN SPATIAL PLANNING GUIDELINES</th>
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<tr>
<td>One: Spatial</td>
<td>Capital infrastructure, the maximisation of space through mixed use, regional and rural growth, urban growth and development of a node, spatial capital investment</td>
</tr>
<tr>
<td>Two: GeoTech</td>
<td>This takes into account the geo-technical study with classification of areas of risk, groundwater and land forms</td>
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<tr>
<td>Three: Alternative technologies</td>
<td>In rural communities, this seeks to ensure rainwater harvesting, small scale agriculture, soil erosion control, energy efficiency in buildings, indigenous tree establishments. In urban areas, it seeks for better management of water, energy efficient industries, alternative waste management in sewage treatment and solid waste. In commercial agricultural areas, soil conservation, biogas, alien vegetation and water demand management. Other areas of concentration are conservation areas, green infrastructure and more energy efficient automobiles</td>
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<td>Six: Heritage</td>
<td>Cultural heritage as a landscape with their relationship with corridors and nodes</td>
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| Seven: Communication and Knowledge Transfer | Knowledge sharing, knowledge sharing in the planning context, local level planning options, and communication with the community through different sources of communication |
| Eight: Agro-Hydro | Agricultural development, defining agro hydrological potential based on soils, climatic drivers and available water resources; dryland agriculture, irrigated agriculture and the assessment of the land namely; slope, topography, risks, and the flooding pattern |

Table 2: Provincial Spatial Guidelines
2.2.2 Provincial Spatial Economic Development Strategy (PSEDS) 2004

The Provincial Spatial Economic Development Strategy (PSEDS) sets out to:

- Focus where government directs its investment and development initiatives;
- Capitalize on complementarities and facilitate consistent and focused decision making;
- Bring about strategic coordination, interaction and alignment.

The PSEDS recognizes that:

- Social & economic development is never uniformly distributed;
- Apartheid created an unnatural distortion of development and this distortion must be addressed.

PSEDS identified the following as key sectors for development:

- The agricultural sector/ agri-processing and land reform;
- The industrial sector;
- The tourism sector; and
- The service sector (including government’s services).

All the identified sectors are key to rural livelihoods and will therefore play a major role in the rural strategy of eThekwini Municipality.
2.2.3 Provincial Growth And Development Strategy Of 2011

The Provincial Growth and Development Strategy (PGDS) provides KZN with a strategic framework for accelerated and shared economic growth through catalytic and developmental interventions. It reinforces the province’s commitment to achieving the vision of KwaZulu-Natal as a “Prosperous province with a healthy, secure and skilled population, acting as a gateway to Africa and the World.” The PGDS aims to build this by growing the economy for the development and improvement of the quality of life for all people living in the province.

The principles of the PGDS are:

- Eradication of extreme poverty and hunger;
- Promotion of gender equality & empowerment of women;
- Reduction in child mortality;
- Improvement of maternal health;
- Combating HIV-AIDS, malaria and other diseases;
- Ensuring environmental sustainability;
- Developing a global partnership for development;
- Sustainable governance and service delivery;
- Sustainable economic development and job creation;
- Integrating investment in community infrastructure;
- Developing human capability;
- Developing comprehensive response to HIV-AIDS;
- Fighting poverty & protecting vulnerable groups in society;
- Partnerships: developing a wide range of effective partnerships, working with national and local government, the business community and civil society, and building on their respective strengths;
- Coordination: creating an enabling environment for implementation of coordinated programmes with stakeholders in developing and implementing strategic interventions;
- Sustainable use of natural resources: application of sound environmental principles and responsible environmental management for long-term socio-economic development, as no real growth can occur without natural resource conservation;
- Communication: commitment from role players is only possible through effective communication;
- Implementation, monitoring and evaluation via implementing well designed and effective implementation plans which are linked to targets, milestones and timeframes.

Ultimately the strategy is counter-active of poverty and social injustices. It is developmental and aims to improve the livelihood of its citizens. Implications for the Rural Strategy are aligning to the provincial principles through (i) strengthening governance and service delivery, (ii) economic development and job creation, (iii) integrating investment in community infrastructure, and (iv) fighting poverty and protecting vulnerable groups in society.

2.2.4 Schemes/Land Use Management Systems (LUMS) Guidelines

In terms of the Municipal Systems Act, 2000 (Act No. 32 of 2000) (MSA), and the KwaZulu-Natal Planning and Development Act, 2008 (Act No. 6 of 2008), (PDA), each municipality is required to prepare a Land Use Scheme for the whole municipality. A key component of Integrated Development Plans is the requirement to prepare a Spatial Development Framework together with a Land Use Management System (LUMS) which can be applied to the whole municipality.

In terms of the new Land Use Management System for KwaZulu-Natal, a system of wall-to-wall Planning Schemes is proposed as forming the basis for the single LUMS required for municipalities.

2.2.4.1 Purpose of LUMS

The purpose of preparing LUMS is to promote co-ordinated, harmonious and environmentally sustainable development. A land use management system, in its broader sense, refers to all of the actions required by a municipality to manage
Some of the key elements of a comprehensive land use management system are as follows:

- Spatial Development Framework;
- Land Use Management Framework and Planning Schemes;
- Rates database;
- Cadastral and property database;
- Information regarding the provision of services;
- Property ownership and tenure;
- Environmental issues and requirements, and
- Transportation requirements.

2.2.4.2 Rural Component of Planning Scheme

The rural component of a Planning Scheme is primarily applied to manage land:

- Outside defined urban areas;
- So as to promote the general principles of sustainability, efficiency and integration;
- To ensure that prime agricultural land is protected, and
- To ensure that important areas of environmental significance and bio-diversity are protected.

Historically, traditional leaders have played a significant role in land administration in the province. Recognised systems of land administration already exist and Amakhosi have been making land use decisions for many years, albeit under different political regimes. Under colonial and apartheid rule, traditional leaders performed numerous functions undertaken by local authorities in other parts of the country.

The three key functions include (PPDC, 2004: 11):

- facilitation and administration of the provision of basic services;

- resolving and adjudicating disputes; and
- land administration (use of land, allocation, demarcation, land transactions, and fees or taxes relating to land).

Most traditional councils have well recognized rules and procedures for each of the above functions, particularly those that relate to land administration. The challenge is therefore not to introduce new land administration processes, but to integrate the existing practices to the emerging land use management system.

This requires thorough consideration of a number of issues given regional and even area variations in the manner in which traditional councils discharge of their functions.

These include the following (PPDC, 2004:13):

- Need to maximize the potential of indigenous knowledge and practices.
- Acknowledgement of the fact that customary practices are open, flexible (based on principles) and adaptable to changing circumstances.
- Importance of livelihood strategies including access to communal amenities, and sources of economic livelihoods (woodlots, medicinal plants, grazing land, etc).
- Communal land tenure system based on negotiated and shared boundaries between neighbours.
- Other land tenure systems (PTO, lease agreements, etc) that pertains on Ingonyama Trust land.
- Variations in the system of traditional leadership.

Therefore, a Land Use Management System in Traditional Councils areas should take into account the socio-political climate and protocols that relates to land (access and use thereof).
2.2.5 Provincial Spatial Development Framework

2.2.5.1 Introduction and Purpose

The KwaZulu-Natal Provincial Spatial Development Strategy has been developed in order to achieve the goals and objectives of the PGDS in a targeted and spatial co-ordinated manner. The Provincial Spatial Development Strategy sets out to:

- Be the spatial expression of the Provincial Growth and Development Strategy (PGDS) and provide spatial context for proposed strategic interventions;
- Provides a set of normative principles or departure points that guide the Province’s approach to dealing with socio-economic issues that are manifested spatially;
- Provide a basis for informed consensus on the province’s spatial priorities by providing a map giving guidance for the future spatial development of the Province based on Broad Provincial Spatial Planning Categories (BPSPCs) and a series of other relevant features;
- Assist to prioritise and align where government directs its investment and development initiatives to ensure sustainable and maximum impact;
- Capitalise on complementarities and facilitate consistent and focused decision making,
- Guide municipal integrated development plans (IDPs), spatial development frameworks (SDFs) and provincial and municipal framework plans (i.e. sub-SDF spatial plans); with normative principles, approach and content;
- Provide clear intent to the private sector about desired development directions;
- Increase predictability in the development environment.

The following nine spatial principles underscore the general spatial intentions of the PGDS.

The PGDS proposes Rural Service Centres which are envisaged to serve as the lowest level of Provincial Nodes and could typically be established around existing traditional administration centres as well as other accessible rural points identified as periodic markets. These will be identified in consultation with the District Municipalities and should serve as first access to basic services within rural areas. These Rural Service Centres will include, as some have already emerged to include, a combination of the following activities:

- Traditional administration centre,
- Taxi/ bus stop,
- Informal trading / market area,
- Social facility (clinic, library etc.),
- Skills development centre (mainly local schools),
- Mobile services point (mobile clinics, pension pay points, mobile library etc.)
- Small commercial facility.
• Recreational facility such as a sport field.

A conceptual model of these Rural Service Centres will guide the formulation of a provincial implementation strategy towards the implementation of the proposed Rural Service Centres

### 2.3. KEY ETHEKWINI LOCAL PLANS

#### 2.2.6 Rural Development In The Ethekwini Economic Strategy

The 2012 eThekwini Economic Development and Job Creation Strategy (eThekwini 2012) highlights several issues in the national economic context impacting on the local (eThekwini) economy. The issues, of which a number will impact directly on rural economic development (highlighted in bold), include:

- The negative impact of the global financial crises on the local manufacturing sector;
- The NDP’s prioritisation of unemployment, poverty and inequality;
- High youth unemployment;
- Under-investment in infrastructure;
- Increasing competition as a result of globalisation;
- Spatial disintegration in South African cities;
- High logistics costs;
- Numerous skills and education system challenges;
- High levels of bureaucracy related to small businesses;
- High cost of labour and production;
- Low levels of foreign fixed investment;

- Low levels of entrepreneurship development and support mechanisms for SMMEs;
- Lack of economic transformation.

The 2012 Strategy document presents eThekwini with four strategic choices to be made in terms of economic development. The strategic choices are:

- Capitalising on the role of the port, international airport and potential modern rail, road and ICT infrastructure;
- Promoting the city as a centre for trade between Africa and the world; build on key sectors which show potential, including media and communications, financial services and the services sector in general;
- Emphasizing the potential of the city as the best location for manufacturing activity. This must be supplemented with on the ground opportunities for manufacturing and sophisticated support programmes. The manufacturing sector is capable of absorbing lower skilled labour and creating and sustaining decent jobs, if promoted and supported correctly;
- Marketing the lifestyle aspect of the area including tourism potential, a destination of events as well as a preferred quality of life which supports investment choices.

The Economic Strategy then presents an Economic Framework including a specific set of outcomes aligned with the 2010 Growth Path on national government. The Framework and Outcomes is translated into ten programmes as reflected on in the Diagram below.
An analysis of the strategies within each of these programmes provides an indication of how this Economic Strategy will impact on the rural areas of eThekwini.
## PROGRAMMES

### STRATEGIES WITH DIRECT IMPACT ON RURAL DEVELOPMENT

- **Step change in economic leadership**
  - Identify high impact quick wins, e.g. Kings Estate / Weve Driefontein Development

- **Facilitate private sector investment and partnerships**
  - (Could be applied to rural areas in general)

- **Investing in key infrastructure**
  - Phased provision of bulk infrastructure to support development in the North
  - Phased provision of bulk infrastructure to support development in the N3 Corridor
  - Investigate new industrial land opportunities
  - Promote IT connectivity

- **Leverage maximum local benefits from infrastructure development**
  - Creating employment in construction through infrastructure projects (EPWP and related projects)

- **Promoting investments in priority nodes and corridor**
  - Develop a programme of investment promotion and facilitation in priority nodes
  - Pursue regional development and integration

- **Prioritising township development**
  - Building on the momentum created through investment in key township nodes and corridors
  - Focus on sector projects which facilitate the development of opportunity sectors such as furniture, motor repair, agro-processing etc.
  - Targeting rural nodes and corridors for public investment that provides a platform for private sector investment
  - Develop and implement an LED programme for key impoverished neighbourhoods within townships

- **Expanding the labour market**
  - Support new economic sectors (such as the green economy)
  - Develop a programme to ensure the integration of women into the economy

## PROGRAMMES

### STRATEGIES WITH DIRECT IMPACT ON RURAL DEVELOPMENT

- **Developing a competitive tourism sector**
  - Rural tourism product development (Hazelmere Dam, Valley of the 1000 Hills, Umgababa)
  - Promoting SMMEs through tourism
  - Developing cultural tourism

- **Enterprise development, trade and sector support**
  - (See key Sectors for Differentiated Support diagram below)
  - Provide support to the informal economy

- **Supporting social economy initiatives in rural and historically disadvantaged regions**
  - Implement a rural livelihoods development programme
  - Provide financial assistance and planning support to key rural initiatives
  - Adult Basic Education and Training
  - Recognising and supporting the role of NGOs and CBOs in fighting poverty and social ills
  - Develop a servicing policy for rural areas (our emphasis)

### Table 3: strategies with direct impact on rural development

Source: eThekwini 2012

It is then noted from the above that although a rural focused economic development strategy is not in place in eThekwini the overall strategy provide some direction for future economic development in rural areas including a focus on the development of rural nodes and corridors, rural tourism product development, and small and informal business development.
In terms of specific economic sectors to be supported the Strategy suggest the sectors as reflected in the Diagram below. The potential of various sectors on rural economic development must then be considered, most notably the tourism, green industries and agro-processing sectors.

**Figure 4: KEY SECTORS FOR DIFFERENTIATED SUPPORT**

<table>
<thead>
<tr>
<th>Priority job creating sectors for catalytic interventions</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Automotive (Transport Equipment - cars; tractors; trucks; components and linked industries)</td>
</tr>
<tr>
<td>• Chemicals</td>
</tr>
<tr>
<td>• Tourism</td>
</tr>
<tr>
<td>• Maritime, Logistics and Trade</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Niche and Knowledge Sectors</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Electronic and Electrical Machinery</td>
</tr>
<tr>
<td>• Green Industries</td>
</tr>
<tr>
<td>• ICT</td>
</tr>
<tr>
<td>• Creative Industries (Film &amp; Media; Crafts; Fashion)</td>
</tr>
<tr>
<td>• Finance and Professional Services</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Employment-intensive for protection and growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Clothing and Textiles</td>
</tr>
<tr>
<td>• Foods and Beverages (including Agro-processing and other FMCG)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Support and Growth Facilitation</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Shipbuilding</td>
</tr>
<tr>
<td>• Furniture</td>
</tr>
<tr>
<td>• Metals</td>
</tr>
</tbody>
</table>

### 2.2.7 eThekwini Integrated Transport Plan 2010 – 2015

The ITP is a planning document prepared by the municipality to provide guidance and focus on developing an integrated transport network within the municipality.

Strong linkages are encouraged between the Urban and Rural areas. Whilst encouraging rural accessibility and linkages, urban sprawl should not be encouraged within this area, especially in areas hard to reach, to the detriment of densification of urban areas.

The Rural ABM identifies a number of issues regarding rural transport:

- The existing terrain
- Large travel times
- Access to economic and social opportunities
- Lack of a north-south linkage road within the rural area

The Rural ABM indicates that focus should be around rural investment nodes with transport supporting these activities. As a priority, focus should be around public transport.

Strategy 6 of the mini bus taxi strategy considers the short term improvement of mini bus taxi ranks within the rural areas.

One of the key public transport KPIs is KPI 4 which is the Promotion of Access to Public transport and the indicator that is proposed is the "kilometer of roads used for PT per hectare of rural area".

The roads policy on accessibility places large emphasis on increasing accessibility to rural area. There is an existing Rural Community (EPWG) Roads programme.

Source: eThekwini 2012
that is currently being rolled out. In addition, there are other road projects been proposed to improve accessibility.

The Non-Motorised Transport Mode Share within the rural area is higher than the remainder of the municipality due to limited public transport services and affordability.

2.2.8 ETekwini Municipality – Non Motorised Transport Plan

The NMT Vision for the municipality is “eThekwini will have a safe, functional and attractive public environment for NMT users, that gives all its people good access to opportunities and improved quality of life, stimulates economic growth and creates a sustainable City for the future”

The plan is developed around four core themes viz. CONNECTING, ENHANCING, GROWING AND SUSTAINING.

The NMT plan consists of policies and strategies around the four themes as well as implementation guidelines.

NMT Network plans have been developed for two areas within the study area of this project Phola-Amitikwe and Umgababa.
2.4. SUMMARY OF POLICY ISSUES

- There are strong arguments in favour of protection of spatial integrity of rural areas.

- Such protection should take into account:
  - Promotion of the general principles of sustainability, efficiency and integration;
  - Ensuring that prime agricultural land is protected, and
  - Ensuring that important areas of environmental significance and biodiversity are protected.

- Historically, rural spatial planning has been strongly controlled by National Legislation and dominant political paradigms. This level of control has now been removed and local government structures are now responsible for the management of land, including rural settlements.

- A reinforcing system of co-operative governance between spheres of government and other organs of state is essential for effectiveness, but operationally this is not yet in place. The activities of traditional councils in land allocation are not guided by the wall-to-wall spatial and development plans as prepared and adopted by municipalities for their areas of jurisdiction.

- At a local level there has been an attempt by eThekwini municipality to define
  - Rural Investment Node Nodal Areas
  - Rural Service Nodes Nodal Areas
  - Rural Tourism and Recreational Nodes Nodal Areas

- The concept of urban development line needs to be properly articulated in the development of Spatial Frameworks as this could be abused for all forms of “exclusions” when in reality it was designed for a specific purpose e.g. defining a densification zone, etc.
3. SECTION 3: LITERATURE REVIEW

3.1. INTRODUCTION

3.1.1. Research questions

The overall objectives of this study are outlined in the introductory section. In
addressing such objectives the research sought to understand the definition of the
concept rural and based on this consider approaches of different countries.

The following can be summarised as the research questions:

- How is a rural area defined, taking into account international and South
African considerations?
- What are the factors that impact on the definition?
- How is rural development approached?
- What policies are central to successful rural development?
- Which are the key sectors considered alongside rural development within the
countries under consideration?
- What are legal and land issues that have any impact on rural development?
- What are land use management and institutional issues that affect rural
development?

3.1.2. Limitation Of The Study

Rural areas and rural development remain very broad as the definition will show.
The term is used in different ways in vastly divergent contexts. As a concept, it
connotes overall development of rural areas with a view to improve the quality of
life rural people. As a phenomenon, it is the result of various physical,
technological, economic, socio-cultural and institutional factors. As a discipline, it
is multi-disciplinary in nature representing an intersection of agricultural, social,
behavioural and management of sciences. In short, rural development is a process
that aims at improving the standard of living of the people living in the rural areas.

Literature review against this backdrop typically requires consideration of all facets
of development ranging from infrastructure, economic development, land
management, institutional development, agriculture, tourism, environment, etc. All
these facets are crucial pieces of the rural development whole. It makes the
research exercise very laborious and daunting and quite frankly nebulous. The
existing international literature that covers rural development adequately, generally
addresses issues of agriculture, poverty alleviation and environmental measures.

The interest of this study is to examine the policies that governments, particularly
local government, have employed in rural areas for effective land management
and development of rural areas. The key aspects to understand, in our view are
the institutions involved in rural development and the policies aimed at
preservation of rural areas.

In this regard, the literature review could not dwell on agricultural development,
tourism infrastructure and poverty alleviation programmes.

3.2. DEFINITION OF RURAL

Many definitions of rural and urban have been developed over the years. While
there is no one agreed-upon definition for what constitutes "rural," most methods of
classifying territory along an urban-rural continuum make reference to population

2 AgriInfo.in © 2011
3. Different countries have varying definitions of "rural" for statistical and administrative purposes. For instance, typical rural areas have a low population density and small settlements. Agricultural areas are commonly rural, though so are others such as forests.

We look at various approaches that have commonly been used in defining what is “rural”.

3.2.1. Oxford Dictionary

The Oxford dictionary explains rural as:

"remote rural areas. According to the dictionary the definition itself derives from Old French, or from late Latin which explained rus or rur- as 'country'."

This definition refers to “country or countryside” which simplistically encompasses everything outside of urban towns. For the purposes of this strategy this definition is limiting as it requires the very definition of urban.

3.2.2. Business dictionary

Business Dictionary defines a rural area as:

"a sparsely populated area outside of the limits of a city or town or a designated commercial, industrial, or residential center. Rural areas are characterized by farms, vegetation, and open spaces."

What is useful and seems to establish some key thread from this definition is “sparse population outside of city limits”. It can be related to the Oxford dictionary’s introduction of countryside and outside of city. Notwithstanding, there is still element of simplicity as the above sources seem to suggest easily identifiable line of separation between urban and rural. This could have been the case in less complicated lifestyles in olden days. So we look at key aspects that could unpack characteristics of rural.

3.2.3. U. S. Census Bureau

The US Census Bureau uses a formula involving population size (2,500 or more) and population density (500 persons per square mile or more) to classify a place as either rural or urban. The Census Bureau divides the nation into census blocks, the smallest geographic entity for which the census reports population data. These are aggregated into block groups (which generally have between 300 and 3,000 people). Urban places are defined starting with a block group that has a population density of 1,000 persons per square mile and adding on block groups and blocks that have a density of 500 persons per square mile. If the territory so defined has 2,500 or more people, it is then called an “Urban Area.” Urban Areas are called Urbanized Areas if they have 50,000 or more people and Urban Clusters if they have between 2,500 and 49,999 people. All other areas are rural.

What is important under the US Census Bureau is that “densely settled communities outside the city bounds can still be classified as urban even though geographically located in countryside.

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3 Oxford Dictionary
4 Business Dictionary.com
5 Oregon State University Rural Studies Program (2014)
The above also requires a degree of application of mathematical formula, and some level of assumption of population blocks, and how close they are to one another.

At least what one can draw from this approach is the number of people, per given geographic space. The next consideration draws from South African local considerations.

3.2.4. The Rural Development Framework 1997

The Rural Development Framework, adopted by the Government in 1997, defined rural areas as

“sparsely populated areas in which people farm or depend on natural resources, including villages and small towns that are dispersed throughout these areas. In addition they include large settlements in the former homelands, created by apartheid removals, which depend for their survival on migratory labour and remittances.”

3.2.5. Integrated Rural Development Strategy 2000

Integrated Rural development Strategy (2000) suggests that rural areas throughout the world tend to have similar characteristics. Populations are spatially dispersed. Agriculture is often the dominant, and sometimes the exclusive economic sector, and opportunities for resource mobilisation are limited. These characteristics mean that people living in rural areas face a set of factors that pose major challenges to development. The spatial dispersion of rural populations often increases the cost and difficulty of providing rural goods and services effectively.

The specific economic conditions in rural areas result in fewer opportunities than in non-rural locations. Consequently, the tax base is limited, so rural areas are rarely able to mobilise sufficient resources to finance their own development programmes. Factor markets in rural areas often operate imperfectly, rendering the search for efficient outcomes an extremely challenging one. Furthermore, rural areas are often politically marginalised, leaving little opportunity for the rural poor to influence government policies. In many developing countries, policies have also consistently discriminated against agriculture through high levels of taxation and other macroeconomic policies that have adversely affected agricultural performance and the rural tax base. A net transfer of resources out of rural areas has resulted.

Key characteristics which should be used in addition to population and geographic formulae in defining rural areas, include:

- Dispersed population
- Agriculture being a predominant sector
3.2.6. KZN Provincial Guidelines to the preparation of schemes

The provincial guidelines for the development of schemes prepared in 2009, by the Department of Cooperative Governance and Traditional Affairs, COGTA, are more direct in how one should classify rural and urban. The guidelines suggest the following parameters:

"Rural Areas and Rural Development" should be considered against the following:
- population densities less than 150 people / km²
- dwelling densities less than 1du / hectare
- primary economic activities: agriculture, agro-processing, mining, tourism, resource extraction, water, energy

"Urban Areas and Urban Development" should be considered against the following:
- population densities greater than 150 people / km²
- dwelling unit densities greater than 1du/hectare
- settlement contained within an urban edge
- services provided on a grid reticulation system
- some primary urban agriculture, building materials, resource extraction but mainly secondary and tertiary economic activity

The above parameters, especially the population thresholds, are not conclusive. They can be refined further to accommodate the complexities within eThekwini. In our view densities demonstrating classification of rural areas of eThekwini, should be able to also relate to how these areas differ from peri urban areas as an example.
3.3. CONTEXT

An examination of literature on KwaZulu-Natal rural areas indicates that there has been a fair attempt to understand the rural area, development needs in the rural areas as well as understand the institutions that deal with the rural areas. Although there is literature that treats the rural areas largely ‘as a socio-cultural brand’ (see for example Sithole 2000 and 2005), most literature portrays rural areas in a contiguous typology with urban spaces of urban orientation, i.e. the township and towns (see Hart 2002). Hart’s (2002) articulation of the township and as in-between space between the rural and the urban, and particularly as a space symbolising dispossession and conversion of people into labour functionaries of capitalism in ways unlike the rural areas in East Asia (which she constantly compares her local study area with), indicates that there is a social relationship between various spaces in South Africa (from rural to urban) and that relationship is located within the changing economic patterns of life. Hence she starts with the history of these areas.

Her examination of history and the painting of the links between the (ultimately privatised) rural spaces (the farms), the townships that became reserves and spaces closer to the new economic mode of labour and commerce, and the urban centres indicates that the rural has also changed, remains prone to change and exists in relation to the centres of economic activity in the urban space. Of course there remains another form of labour reserves in the form of rural areas under traditional leadership where economic life was made difficult while social institutions largely remained in place. This too constitutes ‘the rural’ especially in KwaZulu-Natal, the type that leads to the socio-cultural branding as hinted above. However Hart study is relevant on anyone puzzling of development (including rural development) because she presents a concept of ‘interconnected trajectories’ or ‘multiple trajectories’ to convey a sense of progression of power dynamics and interplay between spaces. Despite the fact that her caution on proclaiming the nature of place through global ‘forces of impact’ can be disputed, her notion of ‘interconnected trajectories’ is a useful concept to understand what municipalities such as eThekwini are contending with in their attempts to define ‘the rural’ and in their struggle to juggle institutional models to effect development.

The lesson from Hart’s study is that the rural can be defined but not essentialised. Both the character of place and the social institutions that manage it need to be in constant negotiation to understand social trends and their interplay with desirable environmental and developmental impacts. In fact defining development is a matter of negotiation and revision for a municipality like eThekwini. The possibility of tallying rural, township and urban space neatly with various management forms of private owner or traditional leaders, on the one hand, administrative bureaucracies, on a another hand (all of which with an overlay of local state) is better achievable in many other municipalities in KwaZulu-Natal than in eThekwini municipality where responsibilities are complex and blurred in some places.

Rural population in KwaZulu-Natal can be put into a typology of three social arrangements:

- Private property owners (mainly landowners and farmers)
- Traditional communities (with traditional authorities; with freehold title)
- Farm-dweller (landless people living as tenants and sometimes as workers on privately owned land)

In addition to this eThekwini (and possibly other fast urbanising municipalities are faced with overlapping patterns of density on spaces that were institutionally and socially rural in the manner they were managed. Thus peri-urban and semi-rural usually signifies spaces that are dealing with the mismatch between rural social and institutional regulatory mechanisms on the one hand, and urban densities changing the character of those spaces (see for example Local Areas Plans LAP on Adams Folweni LAP and Nsimbini Golokodo Rural Functional Area Plan
(RFAP). The challenge with this situation is that there has not been a proper analysis of trends and necessary action to prepare the institutional structures to negotiate new mechanisms for regulation of these areas, let alone the pondering of critical carrying capacity of those spaces in terms of infrastructural and service capacity. Economic trends adopt the format of evolution left to social entrepreneurial skills.

This situation has made planning for areas that constitute both urban and rural areas to require revision of approach. Clear delineation of where the urban spaces end and the rural area starts is not possible. This makes the concept of ‘interconnected or multiple trajectories’ developed by Hart relevant in such spaces. The urgent task is to outline the multiple aspects of the development equations that must be considered and to map their relevance within each area – defined according to an emerging character and feasible capacity to manage those trends. The trends have made attempts to draw development lines not only a politically questionable exercise (in terms of which side of the line is the term development applicable), but also obsolete as a useful concept to manage development in the context of contiguous characters of place.

3.4. MANAGING RURAL DEVELOPMENT IN KWAZULU-NATAL

After several preceding studies on the question of planning tools relevant to wall-to-wall municipalities the old KwaZulu-Natal Planning and Development Commission (KZNPD) published a study in 2010 titled: *Land Use Management Systems in Rural Areas*. The significance of this study in the context of what eThekwini municipality is trying to do is twofold:

1) It paints the nature of life in rural areas as a combination of landscape and social factors

2) It depicts the need to spend time forging communication, negotiation and establishing institutional mechanisms for stakeholders to manage development in rural areas.

The reason this study is referred to here is that whilst eThekwini seeks to establish a development strategy for the rural areas within the municipality, three important things must be noted in reading the findings of this study taking into account the conceptual framing from Hart (2002) as described above:

1) Development strategy will need to take into account the constantly changing nature of the area and necessary linkages it must have with townships and urban centres

2) Rural spaces will need to be defined in terms of tangible contents of its space and what is planned around the potential landmarks, assets, and uses

3) Institutional mechanisms and conversations will need to be established and created working from the current state of social awareness of a development framework and roles of various authorities – with respect to land allocation and management of land uses.

The study referred to above, made a lot of recommendations, and even ventured into an establishment of the toolkit for managing land use in rural areas. However, two observations are worth citing because they illustrate the importance of points made above and the need for working from current reality. The emphasis in these citations is on rural areas with traditional communities:

Land use planning and management tools available in different municipalities to deal with land in rural areas often ignore unique land uses and traditional ways of managing them, and thus are incompatible with the life circumstances and conditions in these areas. In addition, the seasonality of some of the land uses that exists in rural areas was also ignored in spatial planning tools. (KZNPD 2010: 7)
Weak institutional linkages are to blame for experiences arising out of the fact that the same land has been allocated by two separate authorities, i.e. double allocation, multiple and clashing development plans as well as unnecessary delays in land use and management processes. It should be noted that spatial planning decisions are not about tools or plans themselves, but are about people. This human factor can be adequately catered for by ensuring that proper linkages among all stakeholders involved are strengthened for sustainability purposes. (KZNPDC 2010: 8)

What is important here is the balance between the tangible aspects of the strategy and the intangible yet imperative ‘to dos’ of the strategy. The latter must include a stakeholder analysis of planning knowledge of mutual roles by various stakeholders, including an identification of negotiation processes that must be done over a particular planning unit.

The uniqueness of EThekwini municipality’s rural areas is centred on the actual location within the Metro which speaks to the proximity of rural areas and urban areas in relative terms as enabling mobility and accessibility to urban social life. Yet like other rural areas eThekwini’s rural areas were affected by apartheid neglect in terms of planning and design of critical carrying capacity of local economies. This means that assets such as land were not used optimally for the benefit of the population, nor was there provision of the necessary economic infrastructure to ensure liveable and sustainable social environments. It is thus possible, taking cue from the lessons discerned elsewhere, that EThekwini’s strategy needs to consider socio-economic sustainability and connectivity issues at large scale and small scale levels. This means a strategy to include:

- identification of usable agricultural land and other economic assets
- decentralisation of value addition mechanisms to agricultural and economic (including tourism) products
- managing residential spaces and social facilities according to appropriate standards
- linkages between rural spaces and urban nodes (service nodes and markets)

Identification of these four issues as core to the inclusion of a development strategy follows recognition that development towards rural areas has previously been reduced to service initiatives. This was when concept of ‘rural service systems’ was muted. Conceptually, it evolved (within KwaZulu-Natal) from the 1980s concept of rural service Centres to the interface with the IDP in the early 2000s (see PPDC 2004). However, it is not clear whether there was any systematic implementation of this approach in KwaZulu-Natal and what examples of real interface with the IDP exist.

The issue of development as reduced to either servicing or managing the space seems to be the ‘critical creative block’ of government strategy approaches in South Africa as indicated in some of the studies cited above (Sithole 2000, PPDC 2004, KZNPDC 2010). This ‘creative block’ could be the reason of what is seen as urban migration, which allows urban centres to mount an argument for more financial resources from treasury even if there is little evidence that the migration is permanent or that the rural areas are depopulated. Rural development is not seen as requiring economic and infrastructural development strategy despite that fact that many studies indicate that sustainable rural development needs a holistic balance between economic strategy and management approaches. Because these arguments are often embedded in agrarian reform or agricultural development, the holistic aspect is often lost to strategists of development. Even from analysts with an acute awareness of the migration trend the elements of ‘multiple trajectories’ is implied in their observations and it is clear that it implies economic and infrastructural development. Rukuni (2011) argues:

One unfortunate situation in Africa today is the premature movement of large numbers of rural people into urban areas. This rural to urban migration is unfortunate and premature because most of these people do not have jobs or
homes in the urban-industrial sector. Most do not possess the life and the economic skills to be gainfully employed in the urban areas. As a result urban decay is on the increase in Africa as the over-stretched infrastructure breeds ill-health, crime and social breakdown of family structures. Moreover the movement is largely by young adults. This drains the rural areas of the young and energetic force that is desperately needed for agricultural development in these areas. (Rukuni 2011: 211)

Whilst the picture above endorses Hart’s (2002) notion of ‘multiple trajectories’, the manner in which Hart downplays ‘external impacts’ on place is both empowering and disempowering and should be treated with caution. Of course people take charge of their lives locally and interact consciously with other forces and broader socio-economic trends (be it industrialisation, new players into market, such as the Asian players in KwaZulu-Natal midlands). However, strategists of development and planners must read the impact of global tendencies as well as the historical issues of dispossession and act in ways that consciously favour local socio-economic empowerment. This is the lesson from the Brazilian history of rural development. Brazil is not mooted here as a ‘perfect case’, but it demonstrates how local rural development discourse has wrestled with balancing local strategising with connecting with broader trends.

3.5. A COMPARISON WITH BRAZIL ON RURAL DEVELOPMENT

The basic unit of local government in Brazil is the “municipio” – the municipality. Although towns take prominence within the municipality, there are also districts within the municipality which are rural. This appears to have been a situation for quite a long time, and yet the dichotomy between rural and urban development approach has never been resolved. Donald (1960) describes the situation as follows:

The primary unit of Brazilian local government is the municipio. Being the only governmental subdivision of the state, it gives Brazilian local government an apparent simplicity unlike the governmental pattern in the United States. ...the municipio is more comparable to the American county. Yet it also differs from the county in several important respects. Towns within the municipio cannot incorporate separately. Territorially, the subdivision of the municipio is the distrito, and administrative unit with little political significance... In government organization, other differences also exist. More significantly, the area extremes of the municipio are greater, and that unit is also more territorially unstable (Donald, 1960: 1044)

Whilst it might not be easy to understand what “territorially unstable” means in real terms, it is clear from this description that Brazil has a long standing arrangement of what we have as wall-to-wall municipalities with town, rural spaces and internal configurations that do not necessarily speak to perceived social boundaries. This is discerned from the remark that “towns within the municipio cannot incorporate separately”. It is also worth citing a Brazilian governance approach that seems to have prevailed in the middle of the 20th century in Brazil because it has bearing on the need to examine the dependence of any development strategy on inter-governmental co-operation. Donald continues:

As can be seen, in spite of the area of extremes, the majority of the municipios were smaller, in 1950, than the American county. The fact that the Brazilian unit was smaller is significant only because it does not share governmental responsibilities with other units (Donald 1960: 1044).

Despite geographical incorporation of ‘the urban’ and ‘the rural’, like South Africa (currently) Brazil at one time seems to have had a rural population “with little attachment to local government” (Donald 1960: 1045). However the situation of alienation from government is visibly changing because of the changing policies
which bring about structures that induct people into local government awareness (see Sahasranaman 2012 on the comparisons between India, South Africa and Brazil).

The Brazilian literature of recent times indicates that some of the development challenges that Brazil as a country is dealing with are similar to the ones that face South Africa. Amongst these is how to co-ordinate reduction of inequality and participation of the citizenry in the polity. This involves designing a strategy that treats citizenship in rural and urban spaces as equally entitled to development. An assessment of the approaches to this double-agenda of redistribution and active participation shows that in the last three decades Brazil designed a seamless development approach towards both rural and urban areas which understands their strengths. It is portrayed in terms of three generation of policies that operate at various scales – the national, the regional, and the local. First to paint a moment of turn around Schneider et al (2010) argues:

Economic stabilization created room for debate on the country’s future development prospects. Many innovative proposals emerged, many providing new perspectives on rural development. At the same time the New Federal Constitution of 1988 created new legal frameworks. One law decentralised the political-fiscal system, with municipalities becoming “federate entities” and assuming responsibility for implementing many areas of public policy (including health, education and social security). Other laws implemented a range of social rights set out in the new Constitution, including rural retirement (at 55 years for women and 60 years for men), the demarcation of indigenous lands and territories for quilombolas (the descendants of former slaves), the regulation of extractive activities on public land and measures against child labour (Schneider et.al. 2010: 228).

It is not so much the specific content of Brazilian interventions that bears highlighting more than the very fact of its specificity and its local orientation. In addition, the Brazilian ‘three generation’ policies are useful to ponder upon in so far as they create an opportunity to reflect on what a municipality such as eThekwini will hook its rural development agenda from the point of view of intergovernmental co-ordination. It is clear that between the balance of these policies three important ingredients of development are considered:

- Assets (through land reform) – enabled by broadly driven national policies
- Accessibility to markets and sustainability – enabled by decentralised initiatives to empower supply-demand balance
- Enterprise development and value addition – enabling product development and market linkages at local level

Schneider at al (2010) articulates the ultimate agenda of the current (third) generation of policies as a consolidation exercise to the work that would have been started by the first and second generation policies:

The central point of the third generation of public policies for rural development is that they clearly show a comprehensive understanding that the fight against poverty, hunger and social inequality must target both sides of the problem: supply and demand; farmers and consumers (Schneider et.al. 2010: 233 -234).

The third generation policies have led to quite a practical programme towards economic entitlements that enable economic empowerment. They are policies that:

...support the processing of (and adding value to) farm products, including programmes for the development of small- and medium-scale rural enterprises , known in Brazil as agroindustrias familiares.... In this sense, we can include the biofuels programme that put emphasis on sourcing raw materials from family farms.... Another promising initiative attempts to
integrate the new food procurement policies...with existing ones, such as the Brazilian School Meal Programme.... This represented a clear and co-ordinated effort to support construction of new markets for farmers, whilst simultaneously fighting poverty and social inequalities, particularly in urban markets (Schneider et al. 2010: 233).

Such ideas require a creative approach towards ‘space’ and territorial development. The idea of ‘territoriality’ in undertaking development links what might be seen as the soft humanistic aspects of development (especially where there is timidity to include the ‘political’ in development as is the case in South Africa on the question of assets and capital reform) with spatial planning. Liete (2010) uses Brazil as a analytical case to show that careful delineation of social identities and dynamics, material needs and priorities, can inform design of change management and sector policies. This work demonstrates that decentralisation that is not informed by intense participation to shape up socio-spatial units of operation is technocratic and alienates the intended beneficiaries. What emerges from this work is the need to examine the unit of planning and development operation – is it the ward, a planning unit – and what informs its design. In Brazil a territorial unit is defined as:

A physical space, geographically defined, generally continuously, comprehending urban and the countryside, characterised by multidimensional criteria – such as the environment, the economy, society, culture, politics and institutions – and a population with relatively distinctive social groups, which are internally and externally related through specific processes, where one or more elements that indicate identity and social, cultural and territorial cohesion can be identified (Brasil MDA/SDT, 2005 cited in Leite 2010: 11)

Whilst a criticism of this definition could be that this could be anything, it beckons development practitioners to hold the debate about demarcations of space even cascading demarcations of space from provinces, municipalities, wards and planning units. What is important in Leite (2010)’s articulation of territoriality is that it demonstrates how negotiation and delineation of planning units can create a necessary balance between bottom-up and top-down development approach. It is in the clear and socially meaningful delineation of planning units that other structures are able to design policy articulation that speaks to the specific needs of the local. Authoritative local institutions that are credible to the local population are able to represent and beckon higher level territorial structures to meet the needs of a socio-spatial jurisdiction.

All said and done it is a well-known fact that good development rhetoric sits between pages of strategies and pans without implementation. Sugiyama (2008), attempts to track why this is the case when it comes to the practical operation level. She argues that political incentives, ideology and professional networks sometimes make it difficult for institutions to take the leap of innovation. The motivation for such a study was the argument that “although many observers of Brazilian politics expected considerable policy diversity [in recent years], instead the country has experienced a surprising pattern of policy diffusion as localities have emulated programs that were designed for other cities” (Sugiyama 2008: 194)

In her analysis Sugiyama (2008) shows how it became easy for Brazilian municipalities to take ready made programs and diffuse them to the local situation. This bears resonance with the South African situation, specifically the KwaZulu-Natal situation where there is a lot of work that has been done to analyse the local situation and local institutional dynamics that prevent realisation of good spatial management are known. But creative ways to establish joint mechanisms to manage spatial development are not created. Rural areas tend to be the victim of extension of planning and development standards developed elsewhere. Given that it has been demonstrated that rural branding itself might not be advisable (in the context of contiguous rural-urban typologies) labour intensive creativity that
takes into account local dynamics is needed. It is important to know that professional practice faces this innovation challenge in the context of an overbearing assimilation/diffusion trend mounted on ideology, incentives of formatted funding and professional networks.

3.6. THE AFRICAN EXPERIENCE WITH RURAL DEVELOPMENT

Rural development has gained currency in African countries and this has evolved in different ways in different countries. South Africa has a Comprehensive Rural Development Programme that emerges from a concern of the use of land as a productive asset and has emerged from post-apartheid land reform initiatives. Tanzania has a history of socialism and rural development strategy is vigilant on the re-distributive aspects of current programmes towards alleviation of poverty. Botswana’s rural development initiative emanate from dealing with the peculiarity of rural areas and beefing up rural communities’ institutional mechanisms to ensure socio-economic livelihoods and development. What seems to be a common thread is the need to lodge local communities into socio-economic sustainability. Many have identified agriculture as the base, but the social fabric and tenure arrangements tend to require attention and enhancement.

3.6.1. Tanzania

In Tanzania initiatives towards dedicated rural development via formulation of Rural Development Strategy are mounted on several motivational factors which reflect the following:

- Past development initiatives have been sector based than dedicated to peculiarity of space.
- The structural improvement in the Tanzanian economy that were observed during mid-1990s to early 2000s were good for the country but not felt by majority of the citizens.
- The under-performance of agriculture which was assumed to be the main economic driver within rural areas needed attention, particularly against the backdrop of poverty in rural areas.
- An overall rural strategy was seen as necessary in order to co-ordinate between various sectors.
- A rural development strategy would enhance the overall development strategy for the country as it will articulate strategies within rural areas.
- In the context of climate change there is a need to take charge of changes within the rural context and to diversify economic development within these areas.
- The Tanzanian rural strategy was keen to develop linkages between rural economy and urban markets in recognition of a single economic system and interdependence of economic strands, e.g. financing, capacity building and tourism.

It is clear from the way that the Tanzanian Rural Strategy (Republic of Tanzania 2001) is articulated that it departs from a need to influence socio-economic advancement of people in rural areas in Tanzania. The main issue is the need to fight poverty and to ensure that the linkage between what is articulated in national policies in the name of development translates into tangible benefits in local rural contexts. Quite early in the strategy the challenge of rural development is married with local government:

“The Rural Development Strategy is the framework for the implementation of the Rural Development Policy, and will enhance the realization of the Poverty Reduction Strategy. The Rural Development Strategy will focus on stimulating socio-economic growth of the rural economy by building on the gains achieved at macro level. The continued strengthening of the links between the micro and macro levels and strengthening the implementation of the Local Government reforms are key instruments for...
the implementation the Rural Development Strategy” (Republic of Tanzania 2001:3).

From the articulation of the need for the rural strategy Tanzania identifies co-ordination, alignment, diversification and re-distribution as major issues to address through the rural strategy. Theirs is a clear case of socio-economic enhancement of citizenry with local government, and government in general, enabling rural development through co-ordination and planning.

Whilst issues of co-ordination, alignment, diversification and re-distribution are implied in the analysis and there are good intentions, the strategy portrays a lot of mere recognition of the cascading plans (national and sectoral) and the need to actually do what is in those documents. In some of the promising statements on empowering local development reference is made, for instance to that fact that “the RDS needs to take into consideration the geographical differences and/or inequalities of the country rather than proposing blanket solutions for all regions and/or areas” (Republic of Tanzania 2001:9). However, the rest of the document is basically an acknowledgement that every possible issue that has been unravelled in the Rural Development Strategy has been thought of in their specialised focal areas. The Tanzanian Rural Development Strategy thus becomes ‘frantically holistic’, as if fearing accusations from various sectors of ignoring their initiatives. The frantic holism is possibly seen after it has scoped all sectors and attempts to distil what it is about:

“The focus of the RDS is on stimulating economic growth and reducing poverty in the rural areas. It is complementary to the Poverty Reduction Strategy Paper (2000) and the ASDS. Thus, the provision of basic services is not only recognized as an essential need and right of rural communities, but is also perceived as a contributor to and pre-condition for rural economic growth. Economic growth is essential if rural households are to be less vulnerable to climatic and economic fluctuations. Good governance and social justice are an integral part of creating a positive environment for the development of the rural areas. District councils and village governments, in partnership with civil society and the private sector, will be major stakeholders in the strategy that is focused on social and economic development of the rural areas. In this respect, the RDS outlines a holistic approach to developing the rural areas” (Republic of Tanzania 2001: 25)

In the end the RDS follows the same pattern as the South African Provincial Growth and Development Strategies/Plans – a detailed logical frame approach that seeks to please every sector at every cycle with responsibility diffused between too many stakeholders. Towards the end it eventually mentions District Development Plans; but suffocating between generic strategies and good principles the actual scenarios and the feasibility of programmes are not possible to discern.

Generally it is clear that at regional level (provincial levels) planning documents tend to confuse holism with detailed stock-taking from various sectoral perspectives. This happens within sufficient acknowledgement of the need for co-ordination, people-centredness, recognition of local dynamics, and socio-economic inter-linkages. However beyond mere acknowledgement, nothing actually happens to show anticipation of dynamics of place with regards to institutions and actual capacity to enable place, even where place has been branded (e.g. the rural area). Government strategies and plans are more trapped in generism than academic work. It is thus often difficult to leap from ‘these alignments of good rhetoric’ in the name of interweaving various plans to actual placement of responsibility and to assessment of actual capacity necessary to action strategies. This is more so as the log-frames generated from these strategies mention all implied stakeholders against the generic objectives.
In real life the complexities that are described in Tanzania on planning are not atypical:

“Lack of coordination between the sectoral authorities concerned, and between these authorities and land users, means that these conflicts are not effectively addressed. But there are also examples which demonstrate cooperation in land use planning activities, eg, where multi-disciplinary teams have been involved in the preparation of village land use plans (see the discussions .... of KwaMazandu Village Land Use Plan in Tanga, and the Tabora Village Land Use Planning Project). Nevertheless, there are disagreements concerning which institution should take the lead and be responsible for managing the funds for the planning activities.

Planning is also undertaken by agencies outside the framework of the formal planning procedures and is not necessarily coordinated with other development plans. Examples include the work of the Planning and Assessment for Wildlife Management (PAWM) project within the Division of Wildlife on harmonising wildlife sector planning, parks planning undertaken by the Tanzania National Parks Authority (TANAPA), and planning undertaken under various donor-funded programmes.” (Kikula and Dalal-Clayton, 1993)

Whilst Kikula and Dalal-Clayton’s work can be viewed as dated, from more recent work it is clear that little has changed in terms of efficiency issues on the ground. This is clear in Ngowi’s (2006) articulation of public-private partnerships in Tanzania. The fact that he looks pitches his argument around partnerships in the sense of private sector stepping in through a contract managed by the municipality in order to boost efficiency – makes it clear that the institutional issues require attention. This is not uncommon, but the point that must be reiterated here is that a ‘strategy’ that does not prioritise a phased focus on issues such as capacity, co-ordination with mapped out core intended impacts (e.g. socio-economic) risks diffused attention and works less as a ‘strategy’.

3.6.2. Botswana

Of all the rural strategies and policies in different countries discussed so far the challenges of definition as reflected in literature on Botswana and its Rural Development initiatives demonstrate clearly that the concept of multiple trajectories require application. Moepeng (2013) discusses in detail the issues of rural development in Botswana and the attempts to define the rural area. It is clear that all areas are moving waters if a static definition of rural is taken – because population dynamics are changing in terms of migration patterns, connectivity to both urban and rural spaces and lack of reliance on a single economic driver. After consideration of population issues, mode of the economy – which results in remittance reliance and the social need to go back to rural homes, and so on Moepeng eventually chooses a definition for purposes of analysis:

“In this article, we adopt a rural area definition to mean any place where the land area is not under state land and all land ownership is under secure title. Rural development should mean a transition from rural to urban, must be an empowerment programme and an incentive to promote productivity even in less productive areas” (Moepeng 2013: emphasis original)

This particular definition of ‘the rural’ and ‘rural development’ is obviously committed to urbanisation as the ideal. This thread is seen in the fact that even when discussing experiences of other countries in Africa, the main focus is how ‘lack of development’ is because there is association of the rural with agricultural activities. In Kenya female headed households are said to be poorer because females are in the rural areas where subsistence agriculture is taking place. In
Ghana rural development achieved visible signs after acknowledging that agriculture is labour intensive and requires assistance with technology and land ownership. The same is read into the situation in India with complication of the cast system and the need to attend to the position of women. Mopoeng’s study is generally useful in the context of the fact that rural development literature on Botswana tends to be ‘human and social’ – the emphasis is on household dynamics, gender dynamics, indigenous knowledge and education (see also Ferguson-Brown 1996; Mensah 2011). Ferguson Brown (1996) indicates how development meant different things in rural and urban areas. Of interest is how the concept of ‘community development’ started off as dealing with traditional networks of family and traditional leadership in rural areas and eventually associated with tangible infrastructural development over time. Eventually community development was the concept for development in rural areas; then there was the creation of ‘social welfare’ for the urban areas that were dealing with slums and poverty.

3.7. THE UNIQUENESS OF ETHEKWINI’S SCENARIO

In 2002 ETHekwini Municipality (with some assistance from the European Union seed funding) embarked on a different way of ‘doing development’ – the Area-based management approach to development.

One of the early business plans on the ABM describes this decision in this way:

“The study area corresponds to the areas defined as ‘deep rural’ within the IDPs Spatial Development Framework. It falls beyond the ‘urban urge’ or sustainability line, and the peri-urban areas alongside the N2 nd N3 corridors. The study area is thus largely defined by its geo-spatial features – dispersed pattern of settlement in traditional dwelling structures, and communal land holding under the Ingonyama Trust – and its physical characteristics – located on the periphery of the EMA and dominated by rugged, hilly terrain. The study area is split into two large areas to the north-west and south-west, and together they represent 36% KwaMashu (NK) and Cato Manor. All with the exception of the Rural Areas project are existing projects that the City and related agencies have initiated in recent years. Thus, the Area Based Management and Development (ABMD) programme is intended to support and enhance these initiatives through dedicated funding and institutional input’ (ETHekwini Municipality ABMD Business Plan 2003/2004 to 2007/2008: 1)

Examination of the initiatives of what became the rural-ABM indicates that ETHekwini has had serious and commendable attempts to give attention to ‘the rural’ compared to the history of no dealing with the rural previously. It appears, however that it was a decision-on-the-go to include rural areas in the ABMD programme. The business plan suggests that: “The project area [was] extended beyond the greater KwaXimba learning area that had been identified in the Feasibility Study. The revised learning area includes all the rural areas in the EMA, and they comprise the bulk of the expanded municipal area with the 2000 municipal demarcation process” (ETHekwini Municipality ABMD Business Plan 2003/2004 to 2007/2008: 66). Thus the question of ‘what is rural area?’ was not the core question although a descriptive definition that enabled specialist to define what is included in their space of attention as achieved: “Given the context of centralised local authority and enlarged Municipal area..., the decision was made to pilot a system of area based management and development in five selected districts. The areas/projects are: Central Business District (CBD) of Inner ETHekwini Regeneration and Urban Management Programme (iTRUMP), the Southern Basin (SB), rural areas on the city periphery, Inanda-Ntuzuma-

Of course the description goes on to socio-economic aspects of what is found in the geo-spatiality defined here. The important issue is that in its early dealings with the rural space three issues were worth mentioning:

- A demarcation process that had expanded the jurisdiction of eThekwini
- ‘Urban edge’ and ‘sustainability line’ were used almost interchangeably, indicating that there was a line which defined capacity and nature of engagement (urbanity) that was assumed to be well-understood by development practitioners
- Nature of rural areas also defined along the lines of the nature land holding and settlement patterns

There are many interesting observation that can be made on the format of engagements with the rural areas by eThekwini, which will surely find their consideration in the newly-crafted rural development strategy. However here perhaps it is work highlighting that in terms of its intentions the rural strategic business plan cited three important outcomes that it sought to achieve in these new areas of development practice by eThekwini:

1) Rural households enjoy greater access to a range of sustainable, affordable and appropriate basic services through the orientation of delivery systems and the improved spatial location of these services.
2) Economic livelihoods of rural households are enhanced
3) Systems of governance in rural areas are improved.

These outcomes indicate that eThekwini had identified the core needs of strategy to be extension of basic services, socio-economic development and functional governance structures. These correspond with the concerns in their descriptive definition that have been highlighted above – new types of area (as per re-demarcation); sustainability; and new social and tenure systems. All thirteen of the strategic objectives of the rural ABM indicate an intended translation of their three outcomes into action.

The main issue here is to point out that eThekwini has a unique set of circumstances in which it is facing rural development. Elsewhere issue of rural development are the same, specifically at country level. The rural development strategies discussed here reflect similarity of issues. But the combination of urbanity with the situation of being both an economic catchment area for social sustainability for the province (and beyond) as well as pressure to serve “fast-urbanising rural areas” creates a different set of challenges for eThekwini. It means that eThekwini has to formulate planning standards to regulate character and embark on socio-economic development simultaneously. This has already been recognised in the combination of outcomes for ABM, albeit with a certain measure of newness in the game. The progression between urbanity and rurality, as well as the pace of change possibly requires more focused and directive development interventions.

3.8. SUMMARY OF ISSUES ARISING FROM LITERATURE REVIEW

From the explored definitions of “Rural” we are able to develop a study specific characterization of “rural”:

- outside of city limits
- sparse population using population formula per square kilometre
- population densities less than 150 people / km²
- dwelling densities less than 1du/ hectares
- primary economic activity agriculture
- generally located in countryside
Spatially there are urban spots, from the above characterization, that are located in an area that has been defined by eThekwini municipality as "rural" to date and vice versa the chances of rural areas in what has been traditionally defined as "urban", cannot be ruled out.

Whilst the focus of the strategy will be rural areas it is important that the strategy identifies these urban spots and provide developmental guidance, to minimise the chances of their “falling in between the cracks”.

Furthermore through the prism of literature as it currently stands it is clear that what eThekwini is attempting to do in one strategy involves focal areas that are found in silos within literature. These are not all discussed here because of the specialist orientation that pervades through the silo focus. However, it is worth mentioning the focal areas which will involve kneading together in consideration of the nature of rural strategy relevant fit for eThekwini circumstances. As they appear in literature currently they include issues on:

- How local government handles rural development – this tends to be too agriculture-specific at times and often local government features in a broad generic rural strategy developed for the country;
- Planning issues within local government – these tend to unpack higher levels of otherwise cascading plans and they tend to be issue specific, e.g. focus on environmental issues or urban planning standards;
- Socio-economic development within rural areas – the focus is mainly poverty alleviation, with a major concern of the failure of other policies to be re-distributive. This has often led to literature to acknowledge the linkages that must be forged with urban areas without necessarily demonstrating this – because of the generic level at which these rural strategies are pitched.
3.9. INSTITUTIONAL ARRANGEMENT

The study area is composed of areas under traditional authorities where land allocation is undertaken by izinduna and their assistants usually local constables. Challenges in the traditional allocation system include:

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

Having said this, there are also sections of the study area that are not owned by Ingonyama board, where land ownership is formal and in line with the official cadastral. Whilst the land use controls have not been applied closely by the municipality in such areas, land use is generally in line with the approved general plans, e.g. Mpumalanga, Folweni, KwaNdengezi, etc. Vacant land parcels in these areas however are often taken over by illegal uses and the enforcement of compliance to land uses in such areas is not as tight.

It was established during the investigations that whilst in some instances residential PTOs were issued, over time more densification occurs within such PTO boundary, rendering the original PTO irrelevant. Apart from residential use, there is also commercial agriculture in some areas.

FIGURE 5: Ownership Plan
The Study conducted by the KZN Planning and Development Commission in 2010 found that weak institutional linkages are to blame for most land management challenges. This therefore suggests that one understands the prevailing institutional structures found in eThekwini Rural Areas. Whilst some land parcels are privately owned, in the sense of individuals and farmers, the focus of this discussion is on iNgonyama land.

There are essentially four institutions directly involved in the management and administration of Ingonyama Trust land. These are the COGTA, the Ingonyama Trust Board, traditional authorities, and municipalities. The roles and functions of these institutions are spelled out in this section of the report.

3.9.1. Traditional Council Structures

The Traditional Leadership and Government Framework Act No. 41 of 2003, which is discussed in detail below, regulates the structure of traditional councils, their representativity and the election of councilors.

The KwaZulu-Natal Traditional Leadership and Government Framework Act No. 5 of 2005, which was promulgated in support of the principles and duties imposed on the Provincial Government of KwaZulu-Natal by the National Traditional Leadership and Governance Framework Act.

The diagram overleaf shows that the structure is not strictly hierarchical. A significant structure in the above line of authority which is not shown in the diagram is “ibandla”. Ibandla is comprised of a group of men who meet to discuss issues of common concern.

The members of ibandla shrink and expand depending on the issues to be discussed. Ibandla can therefore be a group of neighbours witnessing a demarcation and allocation of land, a group of farmers deciding on a farming matter, or isigodi discussing fire control, etc.

Finally, the tribal court, with the Inkosi-in-council or uNdunankulu (chief headman) presiding, is the final arbiter on a wide range of issues (Alcock, 2004). Traditional councils are empowered to administer the land through the KwaZulu Amakhosi and Iziphakanyiswa Act of 1990 (Act 9). The Ingonyama Trust Board describes the relationship that it has with traditional authorities as “administering land in partnership”.

This partnership is not well defined and includes a level of ambiguity or at least is seen as a source of misunderstanding – particularly by outside stakeholders such as investors.

The graph below depicts a typical Traditional Council Structure.
The Ingonyama Trust Board has a particular interest in land that is to be accessed for commercial development, and has the power to enter into agreements relating to land rights for new developments, with the prior written consent of the traditional authority or the community authority concerned.

Existing rights on Ingonyama Trust land are protected in terms of various pieces of legislation, including Ingonyama legislation and the Interim Protection of Informal Land Rights Act. In fact, the White Paper does not allocate land administration function to traditional authorities. Instead, it leaves any involvement of traditional councils in, inter alia, land administration to provincial legislation.

A review of the provincial legislation on traditional leadership suggests that the functions of the traditional leaders in the province are as follows:

- To administer the affairs of the traditional community in accordance with customs and traditions;
- To assist, support and guide traditional leaders in the performance of their functions;
- To work together with municipalities in the identification of community needs;
- To facilitate the involvement of the traditional community in the development or amendment of the integrated development plan of a particular municipality in whose areas that community resides;
- To recommend, after consultation with relevant traditional leaders, appropriate interventions to government that will contribute to development and service delivery within the area of jurisdiction of that council; and
- To promote the ideals of co-operative governance, integrated development planning, sustainable development and service delivery.

With the exception of the administration of traditional affairs which may be broadly interpreted to include land related matters, the Act does not specifically recognise the land allocation function of traditional councils.

According to the PPDC (2007), Traditional Councils have an important role to play in the development of areas over which they have jurisdiction. Recent legislation on the roles and functions of traditional leaders and the Communal Land Rights...
Act were not well or easily accepted by some Traditional Structures. To this end open and structured participation of traditional leaders in developmental matters remains ambiguous. The lack of clarity regarding the role of traditional authorities in local government is expected to impact substantially on future spatial planning and land allocation on Ingonyama Trust land.

3.9.2. The Department of Cooperative Governance and Traditional Affairs

The Department plays a central role with regard to the township establishment processes and to the development and administration of Ingonyama Trust land. These functions relate to the strategic role that the Department with regard to:

- Supporting municipal efficiency and effectiveness.
- Supporting governance and service delivery. This includes the provision of free basic services where applicable.
- Supporting the establishment of sustainable municipalities.
- Supporting integrated planning, budgeting and development.
- Supporting effective participation in local government.

The Land Administration Support of Department of Cooperative Governance & Traditional Affairs advised that this department assists and supports the Traditional Councils and facilitates the speedy resolution of any land disputes. In terms of processes that guide land allocation in Traditional Authority areas, indigenous knowledge is considered in addition to the land administration process that the department has developed.

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

In addition, the department assists the traditional institutions post land allocation process by demarcating all allocated sites, record keeping, developing land database, provide maps, proclamations and other relevant information. As such the department takes coordinates of all allocated sites and believes that this is effective as there are officials in all eleven traditional houses. The key stakeholders involved in land allocation process in general include Traditional Councils, Municipalities, Traditional Communities, Government departments depending on the nature of the application and the Ingonyama Trust Board.

It has been highlighted that capacity building on land related matters and facilitation of land disputes resolutions in these areas would minimize conflicts between communities and conservation authorities. With regard to layout plans some rural settlements have layout plans prepared and mostly this area needs to be looked at and improved. The municipalities need to facilitate this process in consultation with Traditional Councils and communities.

With regard to land allocation process, the department’s view is that the municipality concerned should provide comments and input to all applications received. It is the department’s view that the municipal spatial plans have failed to cover Traditional Authority areas in spatial plans such as LUMS, SDF etc. As highlighted the department also decides upon development applications made in terms of the KwaZulu Land Affairs Act of 1992 (Act 11) and manages the assessment process for all Development Facilitation (Act 67 of 1995) applications (decisions are made by the Development Tribunal).

The KwaZulu-Natal Planning and Development Act is designed to overcome these legislative divisions, while a Departmental restructuring process will improve alignment of functions in relation to the new legislation. The KwaZulu-Natal Planning and Development Act will fundamentally change the responsibilities of
the Department, as municipalities gain expanded powers and responsibilities in terms of development applications.

The Department will only have a role in ensuring compliance and due procedure in terms of decisions made for development applications, and monitoring compatibility of decisions with municipal IDPs.

3.9.3. Local Government

The establishment of wall-to-wall local government and the alignment of National, Provincial and Local government legislation drew the communal areas into the formal planning ambit. This integration process has started, although it is made complex by the lack of socio-economic and planning data (such as cadastral information) concerning Ingonyama Trust areas at a local level.

The need to align certain land administration functions with the emerging planning and development functions is made more urgent as the IDP has identified the lack of development within Ingonyama Trust areas as a key concern.

The process of wall to wall scheme envisaged in both the KwaZulu Natal Planning and Development Act (KZNPDPA) and the Spatial Planning and Land Use Management Act (SPLUMA) is likely to address planning issues within the traditional authority areas but is a process that requires careful navigation.

3.9.4. Spatial Planning and Land Allocation

The common land uses that Traditional Councils and municipalities have to grapple with in the KwaZulu-Natal context are the following:

- Tourism
- Small-scale commercial enterprises
- Schools
- Clinics
- Commonage (e.g. grazing, firewood, community gardens, thatching grass, palm etc)
- Natural resource management (community-based conservancy initiatives)
- Residential

The introduction of wall-to-wall municipalities meant that Land Use Management System (LUMS) had to be extended into Traditional Council areas and various guidelines have been developed for this purpose.

The progress around the implementation of rural LUMS in KwaZulu Natal is discussed in detail below. The focus in this section is rather on conventional practices. At core to the community decision making systems is the indigenous knowledge.

The biggest problem is the very nature of indigenous system in that it is very fluid, context specific and reflects norms and values applicable at a given time. The Provincial Planning Commission undertook a study in 2006 to understand the parameters of indigenous knowledge. The research noted that there are numerous definitions of indigenous knowledge (IK) within the literature. A useful definition is as follows:

*Indigenous knowledge is the sum total of the knowledge and skills which people in a particular geographic area possess, and which enables them to get the most out of their natural environment. Most of this knowledge and these skills have been passed down from earlier generations, but individual men and women in each new generation adapt and add to this body of knowledge in a constant adjustment to changing circumstances and environmental conditions. They in turn pass on the body of knowledge intact to the next generation, in an effort to provide them with survival strategies* ⁶

Acceptance of indigenous system is an easily translated process when dealing with in the practical realities of planning. Indigenous knowledge experts such as Odora Hoppers (2002), Hountondji (2002), Ntuli (2002), Shiva (1998) and Gupta (2003) stress that indigenous knowledge is embedded in historical and cultural webs of relationships of everyday-life and that indigenous knowledge systems are dynamic and multifaceted.\(^7\)

Historically, land use is managed through a number of undocumented community rules. With regards to grazing land, for instance, people were not allowed to build or bury on the grazing land. People could graze their cattle free of charge on the commonages. But the “vicinity rule” was also applied in that outsiders would need to obtain permission from induna to use any natural resources. The issue of “inter-tribal grazing” has always been a sensitive issue and history has seen a number of disputes being fought over this matter.

Thatching grass and firewood are also some of those activities that are regulated differently in different parts of the province. For instance, in some cases all people from the tribe are permitted to cut thatching from anywhere on the tribal land and at any time and not just from their own sites. In certain instances people can only cut thatching only from the edges of their own fields. There are variations in terms of how these issues are handled from community to community. Firewood is freely available to members of the tribe but outsiders are expected to obtain permission from induna. Palm (used to produce alcohol) is also closely regulated in some cases and is normally granted by induna on the basis of application and availability (Alcock, 2004).

Moreover, it is pointed out that planting and harvesting times are decided collectively. There is an element of law enforcement as well that is built into the process in that people who allow their cattle to graze outside “agreements” are fined following the impounding of their cattle.

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

But with the introduction of the post-1994 legislative changes, a lot has changed such as the Laws of Succession, introduction of laws dealing with evictions, etc. By way of an example, Traditional Councils are sensitive to issue of eviction which is now regulated by the Extension of Security of Tenure Act (Alcock, 2004).

Land allocation on Ingonyama Trust land is undertaken by Ibandla under the leadership of Induna with the support of Ibandla. Ibandla is not a membership based forum. As such, its meetings are open to all neighbours and members of the community, and its decisions are binding to all.

Various stakeholders play important roles in the rural areas and any development strategy that is not properly located within such context is doomed for failure. In this regard the intention is to get a deeper understanding of key role players in the study area and to also understand if there are any spatial factors that can be correlated to particular institutional mechanisms.

A lot of this can also be drawn from the best practice synopsis as there are generally similarities.

The team will also practically probe the traditional leadership institutional framework and get to understand the interplays in role and function between these structures and what is currently provided under the Municipal Structures Act.

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\(^7\)Sourced from the indigenous knowledge systems study: PPDC 2006.
3.9.5. Summary of Institutional issues

- Rural areas, particularly those administered by traditional councils, have not benefited from spatial planning nor has the relevant authorities developed norms and standards for land allocation. As a result there is no common practice/pattern in the manner in which traditional councils deal with the issue of land allocation generally.

- Large parts of settlements nationally, and Ingonyama Trust land in KwaZulu-Natal, are largely unaffected in any positive way by the benefits of a spatial planning system. As a result, land allocation decisions are not based on systemic considerations for safety, harmony, integration, sustainability and efficiency.

- Indigenous spatial planning and land allocation practices have not been given space to evolve, and although recognized in law, systems and procedures for its evolution have not been developed. In actual fact, a different planning system based on indigenous and customary practices operates in these areas, but has been undermined by virtues of formal planning introduced and implemented by successive oppressive political regimes.
3.10. CONCLUSION

There are several issues that must be taken into consideration as a rural development fit for a metro such as eThekwini is being crafted. These are:

- Land use planning and management tools available in different municipalities to deal with land in rural areas often ignore unique land uses and traditional ways of managing them, and thus are incompatible with the life circumstances and conditions in these areas. In addition, the seasonality of some of the land uses that exists in rural areas was also ignored in spatial planning tools.

- Rural areas tend to be the victim of extension of planning and development standards developed elsewhere. Given that it has been demonstrated that rural branding itself might not be advisable (in the context of contiguous rural-urban typologies) labour intensive creativity that takes into account local dynamics is needed. The professional practice faces this innovation challenge in the context of an overbearing assimilation/diffusion trend mounted on ideology, incentives of formatted funding and professional networks.

- Both the character of place and the social institutions that manage it need to be in constant negotiation to understand social trends and their interplay with desirable environmental and developmental impacts.

- The peri-urban and semi-rural areas usually signify spaces that are dealing with the mismatch between rural social and institutional regulatory mechanisms on the one hand, and urban densities changing the character of those spaces. The challenge with this situation is that there has not been a proper analysis of trends and necessary action to prepare the institutional structures to negotiate new mechanisms for regulation of these areas, let alone the pondering of critical carrying capacity of those spaces in terms of infrastructural and service capacity.

- The Brazilian literature, as well as the African cases discussed here, that some of the development challenges that these countries are dealing with are similar to the ones that face South Africa. Amongst these is how to co-ordinate reduction of inequality and participation of the citizenry in the polity. This involves designing a strategy that treats citizenship in rural and urban spaces as equally entitled to development. An assessment of the approaches to this double-agenda of redistribution and active participation shows that in the last three decades Brazil designed a seamless development approach towards both rural and urban areas which understands their strengths. African countries have done this to a lesser extent because their approaches are more generic.
4. SUMMARY OF ISSUES ARISING FROM STATUS QUO

4.1. DEFINING RURAL AREAS WITHIN ETHEKWINI

- This study originally commenced looking at pretty much everything outside of the current development line.
- Having explored definitions of “Rural” the closest commonly accepted definition that could apply in eThekwini has the following characterization:
  - outside of city limits
  - sparse population using population formula per square kilometre
  - population densities less than 150 people / km²
  - dwelling densities less than 1 du/ hectares
  - primary economic activity agriculture
  - generally located in countryside
- Save for commercial farming areas, which are themselves very limited within the eThekwini municipal jurisdiction, there are very few rural areas that align strictly to the definition and concepts considered for a “rural” setting. Caution must be exercised in saying this knowing that there has been some adjustments to the municipal boundaries with the incorporation of new areas in the south that may or may not meet the definition parameters of “rural”.
- The “limited rural” areas noted above are observed in the peripheries like Cele, Nkomokazi, etc and these are largely the outskirts that form the boundaries with the adjoining municipalities. However the rate of densification and urbanisation of these remaining rural areas is such that they are likely to lose the rural character within the next 5 to 10 years, based on the rate of comparable transformation of areas observed within the municipality.
- This is also influenced by the fact that eThekwini is a city, a provincial node that has a relationship with other spaces outside of it, and rural areas beyond the EMA - through the market economy which creates a value chain particularly related to labour and industrialisation. Because of these trajectories of the economy it is unlikely that Ethekwini can establish a socio-economic status built upon assuming the rural nature of spaces.
- What is further observable is that certain spaces are viewed against ‘rurality’ because of the old association of Ingonyama Trust jurisdiction, of which they are a part, with rural areas. It must be noted that within ETekwini ITB land is no longer sparsely populated and has very limited vacant spaces. The large part of this land is practically peri-urban.

Having said this about the rural character there are also practical linkage and service issues that will need to be considered.

Through the catchment analysis it was established that:

- The currently identified Rural Investment Nodes generally appear not well-located to provide residents with access to services;
- Large sections of outlying areas of eThekwini are still located further than 15 kilometres from a Rural Investment Node;
- Some outlying areas, specifically in the western parts, are still located more than 30 kilometres (at least 1-hour travel time) from a Rural Investment Node or an urban retail node; and
- Relating to the previous point, the majority of rural dwellers in neighbouring municipalities will be located more than 30 kilometres from the nearest Rural Investment Node or urban retail node.
The above must then also be considered within the context that the majority of the Rural Investment Nodes are still underdeveloped, with only Umbumbulu offering a limited range of retail and social services.

4.2. IMPLICATIONS FOR DEVELOPMENT PRACTICE AND GOVERNANCE

The issue of the definition of the rural space has implications for development practice and governance in peri-urban areas. These are implications on:

- **Social practices** such as burial options and practices;
- **Land use management** (allocation, zoning, institutional mechanisms to regulate land use, servitudes);
- **Environmental issues** such as refuse collection, environmentally sensitive land use allocation and use;
- **Socio-cultural and development issues** such as mixed options for allocation of services – based on affordability, lifestyle and socio-cultural needs. Different traditions of socio-cultural events, aesthetics, healing and rituals.

4.3. IMPLICATIONS FOR THE URBAN DEVELOPMENT LINE

- Because the concept “rural area” is a misnomer by virtue of objective characteristics and by virtue of character of ETekwini within the province, the relevance of the **urban development line has become obsolete**.

- **Institutional and socio-cultural issues** that create hesitation on classification of these former rural areas as urban must be identified and dealt with so that they are considered in making a viable strategy for the rural areas. Whilst this report makes a conclusion that urbanity of ETekwini is dominant, use of ‘rural’ terminology to emphasise historical trends and local variation may be maintained. This is evident in classification of areas, formerly rural in character according to various traits of distinction.

- There is a need to **rationalise routes and linkages to economic nodes** within ETekwini and between ETekwini and elsewhere

- There is a need to **maximise the typology of economic offerings** from subsistence agriculture, entrepreneurship, professional and formal business options

- Should the need to define **thresholds of densification** be maintained, as per one way of defining the development line, it might be useful for such a line to be called a **densification line**.

- As such and despite the overwhelming trend of urbanity it is important to define specific areas of rural preservation and protection such as:
  - Promotion of the general principles of sustainability, efficiency and integration;
  - Ensuring that prime agricultural land is protected, and

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8 Even though the association of development line with resource deployment was unintended, the fact that ETekwini is increasingly urban in nature and requires development attention ‘urban development line’ has potential to confuse intentions.

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ETHEKWINI RURAL STRATEGY
Ensuring that important areas of environmental significance and biodiversity are protected.

### 4.4. KEY ISSUES OF APPROACH TOWARDS ‘RURAL DEVELOPMENT STRATEGY’

- Development strategy will need to take into account the constantly changing nature of the area and necessary linkages it must have with townships and urban centres.
- Rural spaces will need to be defined in terms of tangible contents of its space and what is planned around the potential landmarks, assets, and uses.
- Institutional mechanisms and conversations will need to be established and created working from the current state of social awareness of a development framework and roles of various authorities – with respect to land allocation and management of land uses.

**FIGURE 7 Settlement Densities**

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**ETHEKWINI RURAL STRATEGY**

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**FIGURE 8 Strategic Framework**

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**SETTLEMENT DENSITY AREAS**

- High Density Settlement Areas
- Medium Density Settlement Areas
- Low Density Settlement Areas
- No Development Areas
- Invermay Dam
- Floodplains
- NDSS
- NDSS as of 2010
5. TOWARDS A DEVELOPMENT STRATEGY THAT ACCOMMODATES A SPECTRUM OF SETTLEMENT CHARACTERS

5.1. THE BUILDING BLOCKS

Vision statements underpin preferred future developments. This strategy is not done in isolation. In the order of municipal plans and frameworks, there are other studies that should influence the direction of this strategy. The vision outlined in Ethekwini’s Spatial Development in particular is fundamental to the proposed rural strategy. It states that “By 2030 the eThekwini Municipality will enjoy the reputation of being Africa’s most caring and livable city, where all citizens live in harmony. This vision will be achieved by growing its economy and meeting people’s needs so that all citizens enjoy a high quality of life with equal opportunities, in a city that they are truly proud of”.

The vision was informed by the development challenges that were identified as well as preferred option in meeting such challenges, namely:

- Have ease of movement in the Municipality
- Enjoy a safe environment in all parts of the municipal area
- Afford what the Municipality offers
- Enjoy a clean and green Municipality
- Have access to economic opportunities
- Enjoy homely neighbourhoods
- Have access to services, in particular municipal, health and education services

The SDF suggests that with delivery of these, the people of eThekwini should be able to:

- Live in harmony
- Be proud of their Municipality
- Feel protected
- Feel their basic needs are being met

In all the above the following key principles are advocated:

- Development interventions that consider the settlement character of the areas.
- Development interventions that promote and enhance environmental integrity of the areas.
- Development interventions that promote accessibility in terms of road infrastructure, social amenities and economic opportunities.

The above vision and challenges equally apply to the rest of Ethekwini. As a matter of fact, the process leading to the development of the vision took into account the entire municipal area, including the current study boundaries. To realise this vision the next section of the report outlines the principles, approaches and strategic options.

The following Vision statement is suggested for discussion purposes:

“eThekwini municipality recognises the diversity of its settlements and will strive to provide appropriate levels of services and support to these areas. The residents of the rural areas of eThekwini municipality will be supported and encouraged to contribute positively towards the sustainability and preservation of natural resources”.

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ETHEKWINI RURAL STRATEGY -
5.2. THE KEY PRINCIPLES

Central to addressing the backlogs in social and physical infrastructure are appropriate development approaches and principles as these will assist in the optimal utilization of limited resources.

⇒ **INSTITUTIONAL RATIONALISATION.** Whilst various policy tools seek to clarify different roles and responsibility, uncoordinated multiple stakeholder layers seem to be at the centre of service and land management challenges in the rural areas. Improved coordination at various levels is a critical component of addressing this challenge.

⇒ **SUSTAINABLE DEVELOPMENT**, i.e. ensuring that development is sustainable both in terms of environmental considerations, physical and social service provision, local economic development etc., this in particular applicable to the areas of substantial informal densification,

⇒ **INTEGRATED DEVELOPMENT**, i.e. facilitating integration of the various formal, informal, traditional and urban components and their interlinkage and accessibility.

⇒ **ACCESSIBILITY** is perhaps the most crucial consideration in the provision of not only public infrastructure, but utilities in general. This relates to affordability, physical accessibility and use accessibility.

⇒ Furthermore the use of central areas and nodes can facilitate the **INTEGRATION** of functionally diverse settlements

⇒ **UNIQUENESS** of each settlement area is the basis of planning appropriate interventions for different communities. In this regard some areas will remain sparsely populated in the short to medium term whilst others should be properly laid out to manage ever increasing densities. With the understanding of this uniqueness certain areas may be conducive to agriculture than others.
5.3. THE STRATEGIC PILLARS

5.3.1. Constraints to development

In any given area considered for development there will be certain factors that will constrain it. Constraints can be considered to be either of a physical nature such as steep slopes, rivers, etc., or of a policy nature such as conservation or floodlines. For this strategy five main constraints have been considered that will restrict land available development.

Act 70 of 70 Agricultural lands

This constraint is the protection of agricultural land. Any land earmarked under Act 70 of 70 should not be developed.
Steep slopes are generally a severe constraint for development. Technically slopes over 12.5° exceed the safe working angle of excavator equipment. However, there are areas within the study area where settlements are located on slopes up to 18°. For this process slopes > 18° have been considered to be a constraint.
**Metropolitan Open Space (MOSS)**

eThekwini Municipality has a comprehensive open space system in place. MOSS provides environmental protection for rivers, wetlands, indigenous vegetation, etc. Ideally there should be no development within the MOSS and serves as a development constraint.

**Floodplains**

Flooding is a severe development constraint.

**Existing development**

In certain areas, mainly along the periphery of the study area, urbanisation has occurred. These areas either fall within existing town planning schemes or have un-zoned urban layouts. As these areas are already developed the land cannot be considered available for development in this project.
Land available for development

The land available for development in the study area is determined by removing land covered by the constraints discussed above. A summary of land types is listed in the table below.

<table>
<thead>
<tr>
<th>Land Type</th>
<th>Hectares</th>
</tr>
</thead>
<tbody>
<tr>
<td>Available Land</td>
<td>44,914.6</td>
</tr>
<tr>
<td>Existing Development</td>
<td>5,838.7</td>
</tr>
<tr>
<td>Inanda Dam</td>
<td>1,733.3</td>
</tr>
<tr>
<td>Floodplain</td>
<td>5,413.5</td>
</tr>
<tr>
<td>MOSS</td>
<td>38,105.6</td>
</tr>
<tr>
<td>Slope</td>
<td>11,159.5</td>
</tr>
<tr>
<td>Act 70 of 70</td>
<td>8,182.3</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>115,347.4</strong></td>
</tr>
</tbody>
</table>

Table 4: Development constraints

This indicates that 61% of the land within the study area is covered by one or more major development constraints.

It should be noted that the constraints considered here are not definitive. At a more detailed level other constraints such as servitudes, graves, historical land rights, archaeological sites, etc. should also be considered.
The study area’s settlement pattern is structured as follows:

- **Urban** areas - This is the first level of density where the interplay between the different land uses and supporting infrastructure is intense. Whilst these areas are generally found within the urban edge, they serve as centers of activity for most settlements within the defined “rural boundary” and should not be ignored as simply “not part of the rural strategy”.

![Figure 12: Map showing existing urban and other typologies](image-url)
Peri-urban areas:
Following the urban centers, these areas are a next logical level in the context of “rural boundary” and are characterized by relatively high densities of settlements. A lot of retail activities are accommodated within the centres of these areas. Most of these are under the traditional land ownership which adds to the ambiguity of servicing these areas, an issue that this strategy hopes to address. Current infrastructure in the peri-urban areas is generally not at par with the level of densities.

Peri-urban areas are shown as yellow in the accompanying map.

Figure 13: Map showing existing peri-urban and other typologies
Figure 14: Map showing various typologies in the north
- **Rural areas** are sparsely settled and generally make good use of subsistence agricultural activities to sustain their livelihood. Owing to the sparse settlement, these areas usually lack formal infrastructure and services.

- **Smallholdings**—this is to a large extent privately owned farms used for commercial productive purposes. Some of these private farms accommodate isolated pockets of settlements, accommodating farm tenants and labourers. A number of Community Property Associations (CPA) and Trusts held lands are part of this category.

The team believes that it is not the character of the area only that should determine how it needs to be managed but more importantly the density guidance that follows in the next section.

As introduced in the foregoing paragraph, what has become clear for the team is that an all-encompassing strategy is required that accommodates all the above typologies. To achieve the above the strategic approach is underpinned by the following:

- Firstly an “**area-character**” driven consideration. This considers the different typologies of settlements and suggests how these are to be managed in future.

- Secondly an **institutionally anchored** framework that seeks to identify key stakeholders, their roles and responsibilities in the land management. This is premised on the fact that there is so much the municipality can do to provide land management guidance but because of its distance from the day to day land management in the areas under CPAs and the traditional authority, some form of cooperation and coordination with such stakeholders should be developed.

- Lastly a **multi-pronged** development toolbox is paramount. Informed by the various disciplines this should suggest various responses to the different area characters to ensure the long term sustainability of such areas.

Below we then explore how each of the three pillars could inform the Rural Strategy.
5.3.2. An area-character driven approach.

Based on the settlement typologies observed within the study area there are four bands of densities that should guide the strategy.

- **High density areas** above 20 dwelling units per hectare,
- **Medium density areas** of 7 – 20 dwelling units per hectare,
- **Rural areas** of 4-7 dwelling units per hectare and,
- **Commercial agriculture** lands of less than 4 dwelling units.

The table that follows represents refined densities that could be used as the basis for the next phase.
<table>
<thead>
<tr>
<th>AREA</th>
<th>DENSITIES</th>
<th>DESCRIPTIONS</th>
<th>ESTIMATED DWELLINGS</th>
<th>EXAMPLE: LEVEL OF SERVICE</th>
<th>EXAMPLE: ECONOMIC CONSIDERATIONS</th>
</tr>
</thead>
</table>
| A    | High density informal settlements (above 20 du/ha) | • These are typically high density areas within the study area where development has already taken place at a rapid rate.  
• To a large degree the location of these areas is strongly influenced by good road network system linking such areas with neighbouring amenities.  
| North 5880  
| Outer West 24907  
| South 44029  
| Central 3013 | PRE-CONDITIONS:  
1. Precinct plans  
2. Detailed layout plan  
3. Institutional / Social compact  
SERVICING:  
1. Water to each household  
2. Water borne Sewer  
3. Electricity to each household  
4. Stormwater disposal in line with layout  
5. Street collected refuse | Business activities at nodal points and other designated areas in line with the layout |
| B    | Medium density homesteads (7-20 du/ha) | These areas are typically medium density that could still use some form of on-site sanitation  
They are also influenced by good road network system linking with adjoining communities  
| North 2904  
| Outer West 12040  
| South 7509  
| Central 19 | PRE-CONDITIONS:  
1. Precinct plans  
2. Settlement layout plan  
3. Institutional / Social compact  
SERVICING:  
6. Water to each household  
7. VIP /Urine diversion  
8. Electricity to each household  
9. Stormwater disposal in line with layout  
10. Street collected refuse | Business activity at nodal points  
Business activities at nodal points and other designated areas in line with the layout |
| C    | Low density residential settlements (1-7 du/ha) | These are low density areas of rural setting. Households here also depend on what is offered by nature for living e.g forestry, rivers, herbs.  
| North 290  
| Outer West 2808  
| South 2398  
| Central 2 | PRE-CONDITIONS:  
1. Local area plan  
2. Settlement plan  
3. Institutional / Social compact  
SERVICING:  
4. Water to each household  
5. VIP /Urine diversion / septic tanks  
6. Electricity to each household  
7. On site refuse disposal | Business activities at nodal points  
Subsistence agriculture around homesteads as well as communal urban agriculture.  
Business activities at nodal points and other designated areas in line with the layout |

**ETHEKWINI RURAL STRATEGY**
<table>
<thead>
<tr>
<th>AREA</th>
<th>DENSITIES</th>
<th>DESCRIPTIONS</th>
<th>ESTIMATED DWELLINGS</th>
<th>EXAMPLE: LEVEL OF SERVICE</th>
<th>EXAMPLE: ECONOMIC CONSIDERATIONS</th>
</tr>
</thead>
</table>
| D    | Commercial /farming areas\Less than 4 du/ha | Largely commercial farms | • North 1423  
• Outer West 17  
• South 326  
• Central 0 | PRE-CONDITIONS:  
1. Local area plan  
2. Settlement plan  
3. Institutional / Social compact  
SERVICING:  
4. Water to each household  
5. VIP /Urine diversion / septic tanks  
6. Electricity to each household  
7. On site refuse disposal | Commercial agriculture |

Table 5: Densities
5.3.3. **Description of density bands**

In defining the density bands the following was taken into account:

- Current provisions in the various frameworks covering North, South and Outer West regions.
- Strategic land parcels that should be protected as covered by D'MOSS, floodplains or agricultural land.
- The “remaining land” is then split using suburb boundaries and roads to create geographic units.
- The approach was based on the data obtained from Eskom that shows homesteads in each geographic area. These homesteads were then divided to get a homestead per hectare value.
- In principle settlement density areas were adjusted to reinforce density patterns, concentrating high density areas.
- Where existing settlement densities allowed, low to medium density areas were used as a buffers between MOSS and high density settlement areas.

The following details densities as contained in the table above.

**5.3.3.1. High Density areas –above 20 du /ha**

- The location of these areas is strongly influenced by good road network system linking such areas with neighboring amenities.
- These are typically high density areas within the study area where development has already taken place at a rapid level or where there is a potential to densify.
- Furthermore it takes into account where vacant land is appropriately placed to consolidate into higher densities.

- Minimal Subsistence agriculture is practised around homesteads with communal urban agriculture playing a major role with those interested in productive agriculture.
- The development and provision of services in these areas needs to be at a high and full specifications level. These should provide the following services:
  - Water borne sanitation
  - Water to each site
  - Storm water measures
  - Business activities at nodal points and other designated areas

**5.3.3.2. Medium density 7-20 du / ha**

- These are areas of medium density that combine both aspects of urban form and rurality in the sense there is still limited spaces around the homesteads for onsite refuse disposal, vegetable gardens, etc. Houses are sufficiently apart from each other.
- These medium density areas could still use some form of on-site sanitation.
- They tend to form buffers between high density and the environmentally sensitive areas and escarpments.
- They are also influenced by good road network system linking with adjoining communities.
- The following services are to be provided:
  - On site sanitation
  - Individual to communal water
  - Business activity at nodal points
5.3.3.3. Rural areas of Low density 4-7 du/ha

These are low density areas of rural setting. Average densities here are 1 dwelling unit per hectare and it can be less e.g. 1 du/2/3 ha. Whilst households here can access urban centres, because of associated transport costs they generally depend on what is offered by nature for survival e.g. forestry, rivers, herbs.

The following services are appropriate:

- On site / homestead based sanitation
- Individual to communal water
- Supplementary use of natural river streams, springs and boreholes.
- Supplementary use of wood and other traditional forms for energy generation.
- Subsistence to commercial agriculture involving livestock farming, plantations, gardens
- Herbs and medicinal plants

5.3.3.4. Commercial farms -Less than 4 du/ha

- Whilst in some instances limited households exist within this band, it is largely driven by productive commercial farms.
- Primary economic activity agriculture, Commercial agriculture.
- A number of these are subject to Act 70 of 1970 which seeks to preserve agricultural use.
5.4. DENSITY STRUCTURE BY REGIONS.

5.4.1. Northern areas

- The North Spatial Framework makes detailed recommendations for the areas inside the development line.
- Outside of such line a large portion of this area is traditionally agriculture land and subject to Act 70 of 1970. Such land parcels are as much as possible excluded from the proposals for new settlements. Whilst new housing developments are proposed in eTafuleni further north areas area collection of commercial farms.
- Other sections of the north are an extension to Greater Inanda Development which has seen increased densities with the various low cost housing. It can be expected, based on growth trends that these areas will densify as well. This includes portions Umzinyathi and eMachobeni areas. As such they are proposed
to form higher density band.

- The balance of the area is suggested to include medium density and low density.
- Due consideration was taken to accommodate the environmentally sensitive areas.

### 5.4.2. South areas

- This area is guided by the South Spatial Development Plan.
- The densities in areas around Umgababa, Folweni, Umbumbulu central and Adams are generally high.
- This is followed by medium densities towards the peripheries.
- Rural densities are encouraged closer to the environmentally sensitive zones and agriculture buffers in areas like Cele, Madundube and Nkomokazi.
- Areas on the outskirts of Mbumbulu are largely composed of Commercial agriculture farms.
5.4.3. Western Areas
The Outer West Spatial Development Framework provides a much refined structure of densities:

- High density areas here include:
  - Georgedale
  - Sankontshe
  - Fredville
  - Embo
  - KwaSondela
  - Dassenhoek
  - KwaXimba
  - Mophela

Medium density areas include Zwelibomvu, Ngcolosi, Qadi. Significant sections of these areas are proposed to be part of the D'Moss as they are composed of various aspects of environmental significance.
FIGURE 18: Outer West Settlement Density
5.5. AN INSTITUTIONALLY ANCHORED FRAMEWORK

5.5.1. A Case for a Creation of an Institutional Framework for Rural Strategy

The foregoing aspect of spatial configuration has to do with physical nature of rural space and the need to define what is rural objectively in the context of the municipality.

However, there are also intangible aspects to ‘rurality’ which have more to do with the social organisation and nature of governance format. These have something to do with the framing and operation of social regulation systems (including formality) on land use, land allocation, service delivery and socio-economic issues; household management systems (including property transfers and issues of communitarity); mechanisms through which to regulate development and regulation mandates of government and other stakeholders; types of sustainability and livelihoods mechanisms allowed on land.

It is important to link what is happening at a municipal level with how it fits in the bigger picture. On the one hand, there are distinct socio-cultural principles (as for example evident in the conflation of governance and justice system in traditional leadership); and on the other hand, there are multiple levels of traditional institutional authority in KwaZulu-Natal province as a whole which must be approached communally and independently.

This is partly a consequence of traditional leadership historically needing to organise itself against government systems that have created provincial institutional frameworks, as well as a result of the internal politics and evolution of traditional leadership itself. What has complicated this situation is that the government levels of organisation (from local to provincial level) cross-cut the traditional leadership structures and boundaries – not embracing the boundaries neatly and creating a potential for neat institutional framework. On this score, the alignment of Houses of Traditional Leaders with District municipalities (with one for the Metro) is an avenue to forge basis for coherence, even if some traditional boundaries may still straddle different municipalities.

In addition, a study on indigenous knowledge systems undertaken by the KZN Planning and Development Commission in 2005, noted that the inability of technical processes to recognise spatial aspects of local knowledge means that there is no fit between professional and technical systems of planning and local systems of spatial usage.

That study noted in the indigenous knowledge research work: ‘When the framework within which participation takes place is highly rigid and there are strict
limitations on what may be influenced, then the degree to which this can be considered a meaningful participation process is limited. Consequently, the contribution of local knowledge becomes difficult to integrate meaningfully with the specialized knowledge of outsiders.\(^{10}\)

All of these issues are resurrected here simply because a point must be made that there is a need to design an institutional mechanism for land and development that does not alienate the varied levels of authority in order for efficient development framework to be realised. The consolidation of decision-making arrangements on certain authorities, including traditional councils and private owners and how they operate to effect decision is a key element of rural institutional arrangements which have a bearing on the character and nature of change for rural areas. Even though this is a project of eThekwini municipality, obviously instigated by the need for a coherent rural development strategy, provincial government and traditional leadership structures must be involved. These include stakeholder such as:

- The Ingonyama Trust Board
- COGTA, as well as
- Other departments that are paramount in driving different elements of institutional operations – depending on the design scenario followed (see scenarios below)

The municipality has attempted before to give special focus on what it saw as rural areas through the rural ABMP. Whilst this was an extremely useful approach in ensuring that these areas are not neglected, it is clear that there was poverty of conceptual and institutional approach in terms of a consciousness of the future direction of development in these areas. Service delivery and socio-economic development was based on needs analysis and pragmatism. An elevated approach that sees how these areas fit within the broader picture of EMA was missing and therefore even though a lot of responsive development projects were done, the future and strategic direction of these areas is not clear. It is thus true that the population in these areas is serviced through the broad Constitutional mandate of entitlement to services. Whilst this is important it does not empower isolated spaces to fit meaningfully to the broader vision and give a basis for entitlement to specific trends of development for their unique areas. In the context of other ABM programmes which promoted industrialisation (SIB), special projects and renewal (CBD), economic connectivity (INK), infrastructural revamping (Cato Manor), the rural was a space of varied attention that lacked core strategic thrust. This is why these spaces simply evolved in character as if without guidance.

In terms of strategy it is argued in this report that there are three institutional scenarios that can be formulated to prioritise key elements as starting points to the strategy to regulate rural development in eThekwini. It must be made clear that the history of alienated relations between formal government structures and institutional arrangements in rural areas require a specific focus. Therefore amongst these starting points the issue of creating an institutional framework as a basis for forging working professional relationships between stakeholders associated with rural governance and government service is primary. This is why institutional framework feature in all scenarios.

5.5.1.1. Possible Scenarios - Institutional Framework for Rural Development within the Metro

It could be argued that it is important to take an elevated view of the eThekwini municipal space, taking from the arguments about the nature of the city within the concept of ‘interconnected trajectories’ or ‘multiple trajectories’ – a way to emphasise that the city has a different character vis-a-vis its economic role in the province.

It is fair and beneficial to see all scenarios proposed below as relevant. However, it is important and practical to select one scenario as a primary approach from which elements of other scenarios can be infused.

\(^{10}\)PPDC 2006: Indigenous knowledge systems.
- **Scenario 1: A social capital approach** – where training of traditional leaders, farmers and community property associations on planning and land use issues. The basis of this would be work that already exists on planning tools and legislation such as the KZNPDA and SPLUMA. However, this needs to be supported by work to translate the implications of these pieces of legislation into clear implications, including norms and standards for the rural area. This would need to be accompanied by complementary research that seeks to train government stakeholders on the nature of social organisation in rural areas, the primary issues in types of livelihoods that people need to practice there. The approach is mounted on a historical need to forge clear institutional links between government and traditional leadership for purposes of development planning.

Specific strategies to be considered as part of this scenario are presented in the next pages of the report.

- **Scenario 2: A Planning/Sectoral Equity Approach** – revisiting all planning thresholds for all sectoral areas of focus.....(needs to be supported by identifying units of operation as traditional authority areas, wards, or other planning units – so that the institutional framework devised is a feasible operational planning unit)

Scenario 3: Prioritising the environment as the foundation sector – mounted on the one issue that is making the ‘rural’ physical space of countryside nature, preservation of areas of environmental sensitivity, and feasibility of substantial (and subsistence) agricultural livelihoods.

The important elements here is that TC and municipal structures operational over a particular jurisdiction would ensure that an environmentally prioritised land...
allocation, infrastructural and physical development. Environment here is prioritised, certainly not to the exclusion of other planning principles, but as a way of committing to preservation of the rural/open space/subsistence agriculture spectrum of land usage which is what a rural development strategy could seek to do even within an admission that eThekwini does not conform to the ordinary character of ‘rural.’

5.5.1.2. **Operational Steps – Towards Crafting an Institutional Framework for Rural Development**

The actual operational steps towards creating institutional framework will need to be preceded by a deliberate project investigating and preparing for a more conscious grasp of rural strategy by all stakeholders involved in regulating rural/semi-rural spaces. In the investigation towards the creation of the institutional framework there is a need to:

- Do an investigation on the wards alignment with traditional authority boundaries. This is important in order to ascertain the feasibility of critical professional structure that could attend to specific planning and development issues combining traditional or CPA or private owner attention and council/municipal counterpart.
- Create typologies of objective elements of ‘rural’ – from traditional leadership areas of high density to traditional leadership areas of low density.
- Identify the core elements of regulation to be expected from the basic institutional mechanism. Specific planning focal areas could be prioritised (as has been suggested in scenario 3 under designing institutional arrangements – with the view to incrementally ‘populating’ responsibility and mandates as the structures work. The advantage of scenario 3 is that it could empower the local institutional units with workable and practical tools – such as status quo maps showing how issues of regulation in each locale fit in the bigger picture of the municipality – in terms of future expansion or preservation of certain areas for specific environmental of socio-economic purposes)
- Identify for real spaces and real pieces of land the range of institutional/governance configurations (CPA, Trusts, Traditional Councils) as well as what elements keep these spaces within the ambit of rural or semi-rural – bearing in mind the objective and intangible character of rural from the socio-historical issues within eThekwini.
5.6. EXPLORING MULTI-PRONGED DEVELOPMENT
This section considers various tool kits that should be considered in the management of the rural areas.

5.6.1. HUMAN SETTLEMENT

5.6.1.1. Housing challenges

Large parts of the study area are owned by the Ingonyama Trust. In areas under traditional authority the legal tenure is likely to remain long-term lease. Currently the housing programme in the rural areas can be applied based on functional tenure i.e. the written assurance that the households benefiting from the program have the undisputed right to live on the land they occupy.

The program currently provides a VIP, a house and access road per homestead. The Sustainable Human Settlements Strategy (SHSS) however aims to change this approach towards greater emphasis on housing at well-accessible rural service nodes. This approach is influenced by the idea of locating rural housing projects where services capacity is presently available rather than locating projects in areas where new services need to be provided at higher costs to the Municipality.

The current rural service standards:\n
- One ground tank per household supplied with 300 litres per day
- Urine diversion toilet
- Electrification only of densely clustered pockets

- All Weather surface to all public transport routes and to all roads within communities having a density greater than 15 person per Ha.

The package of rural housing development (as a Housing delivery programme) is such that the subsidy use options are limited as explained above. Most areas within eThekwini municipality are incrementally densifying.

The settlements layout plans required for the approval of subsidies within Ingonyama land are often poorly conceptualized and not always linked back to the ground realities as there is no requirement for registration and the pegging of the erven boundaries. This leaves settlements with no proper accesses, no traceable addresses and no manageable land cadastral. The conventional rural housing subsidy solution (in its current regime) in dense traditional authority area is therefore flawed as a housing delivery model.

There is a need to develop a coordinated approach to densely settled traditional authority areas that would allow for a tightly planned settlements and appropriate levels of services.

The aspect of challenges has to do with the day to day management of land owned by Ingonyama Trust Board; Here traditional authorities play a chief role based on the community indigenous systems explained under status quo. Until such time that there is synergy between the municipal plans and the indigenous knowledge systems, the considerations in land allocation by the traditional authorities are unlikely to achieve the municipality's vision.

5.6.1.2. Strategies

STRATEGY 1: Detailed plans that can be surveyed
This is perhaps the most obvious starting point in addressing the challenges associated with densities. This intervention will ensure that all the land spaces vacant and settled are properly accounted for through forward planning.

This process should take into account institutional strategies as the engagement of all stakeholders is crucial. The composition of teams should be such that the team undertaking the planning tasks includes social and GIS or surveyor who will account for all existing structures and the communities’ perceived boundaries.

The settlement layout plan should clearly indicate the proposed densities from design point of view.

**STRATEGY 2: Servicing the areas based on the area character rather than tenure character**

The municipality should ensure that services in denser areas are at appropriate levels so that such areas are sustainable. Prevalent tenure arrangement should not be a consideration in the servicing of areas.

**STRATEGY 3 – Capacitating the local stakeholders to manage land effectively**

This strategy seeks to address the anomalies created by the different roles and responsibilities within land management.

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

Possible programmes will include:

- Training ward committees
- Training and education on environmental issues

- Training and education on road safety

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

- GPS equipment

![FIGURE 21: Housing Projects](image-url)
5.6.2. ENVIRONMENT

5.6.2.1. Description of Key Biodiversity Findings

The status quo of the environment phase of this rural strategy unearthed the following key biodiversity issues, or environmental attributes of concern:

The conclusions derived from the status quo phase are:

- Topography

These are relevant for their constraints to development particularly at the western part of the rural areas. These factors have the potential to aid land degradation resulting in worsening of livelihood opportunities for total households. However, these factors also provide opportunities for development of conservation based economic activities as they provide significant aesthetically pleasing land features (wilderness experience). The rugged terrain areas of the rural areas are also major contributors to many of the streams and rivers that traverse the area. These environments are therefore of key management interests for the municipality.
• Biodiversity

The rural areas of the municipality have some areas of high biodiversity significance. All of the vegetation types in the municipality (Table 1) are under threat of degradation. Poor landuses, expansion and densification of settlements, and overgrazing, are major contributors to the loss of biodiversity in the rural areas of eThekwini Municipality. The identified open space systems, biodiversity hot-spots, and threatened ecosystems in the rural areas will require strategic planning to conserve the natural resource base of the rural areas.

Key limitations include:

- Poor soil and highly erodible soils contributing to land degradation poor crop yield
- Harsh climatic conditions such as high temperature, heavy rainfall, drought, and periodic strong winds which under favourable conditions could result in natural disasters such as floods and runaway bush fires
- Highly rugged terrain thus significantly reducing the development potential of the rural areas

Furthermore, there are several socio-economic circumstances that are sources of threats to a healthy environment. These threats which have a potentially adverse effect on rural communities generally and households in particular include:

- High concentration of settlements on suitable agricultural land thereby reducing the food security potential of the municipality
- Overgrazing of livestock leading to consequent loss of biodiversity and trigger of soil erosion
- Indiscriminate bush burning resulting in bush fires that cause some significant reduction in species diversity or loss
- Lack of suitable sewage infrastructure resulting in water contamination and consequent health hazard to water users that depend on natural water sources

The spread of alien trees from these timber lands and other alien plants pose a significant threat to biodiversity, especially grazing land and riparian zones.

<table>
<thead>
<tr>
<th>VEGETATION TYPE</th>
<th>PROVINCIAL AREA</th>
<th>% PROTECTED</th>
<th>% TRANSFORMED</th>
<th>% DEGRADED</th>
<th>STATUS TRANSFORMED + DEGRADED</th>
<th>ENDEMNICITY RANKING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eastern Valley Bushveld</td>
<td>292174</td>
<td>0.1</td>
<td>8.4</td>
<td>15</td>
<td>Vulnerable</td>
<td></td>
</tr>
<tr>
<td>Moist Coast Hinterland Grassland</td>
<td>443976</td>
<td>0.2</td>
<td>42</td>
<td>12</td>
<td>Endangered</td>
<td>NE</td>
</tr>
<tr>
<td>Dry Coast Hinterland Grassland</td>
<td>270752</td>
<td>0.7</td>
<td>35</td>
<td>15</td>
<td>Endangered</td>
<td>NE</td>
</tr>
<tr>
<td>KwaZulu Natal Coastal Belt Grassland</td>
<td>155988</td>
<td>1.3</td>
<td>66</td>
<td>12</td>
<td>Critically Endangered</td>
<td>E</td>
</tr>
</tbody>
</table>

Table 6: Vegetation Statistics in the Project Area

In spite of the numerous benefits provided by the environment of the municipality, there are also several environmental threats and limitations which if not addressed could contribute to decline in the supply of natural resources and livelihoods in the rural areas.
• Effective conservation and management of alien plants especially around the wetlands and riparian area should be of particular management imperative of the municipality if the assurance of water supply in these systems is to be archived.

• Several land uses are in conflict with biodiversity conservation and agricultural productivity. The main ones are settlements and potential mining expansions in the western low-lying areas of the municipality.

• Although land in the more rugged north western portion of the municipality is agriculturally suitable, the steep slopes in this region make the area extremely susceptible to land degradation through erosion and loss of top soil.

• The rugged north western section of the municipality is also a major contributor to the water resources of the municipality as several streams have their source at the area.

5.6.2.2. Description of Key Hydrological Findings

Anthropogenic land uses such as settlement, agriculture, bush burning, and overgrazing have contributed to a significant decline in the quality and yield of water in the catchment. The following issues were identified:

According to a study conducted in 1996 by the then Department of Water Affairs and Forestry to investigate the water balance within major catchments (Appendix 1) it was recorded that catchments in the project area have a balance of only approximately 24%12 or lower of the total water requirements of the catchment.

This has severe implications for economic and infrastructural as well as socio-economic development for the municipality in general. Thus the necessity to make catchment management a priority management action for the municipality cannot be over-emphasized.

The groundwater and aquifer potential of the eThekwini Municipality region is closely linked to the primary and secondary porosity of the diverse rocks and sediments and as well as the brittle fracturing and weathering they have undergone.

12 It should be noted that this is data obtained in 1996. The current situation is likely to be more bleak
5.6.2.3. **Approach and methodology**

The desired state of the environment is premised on the principles of sustainable development. This principle promotes the judicious use of environmental resources for the purpose of enhancing human well-being without compromising the ability of future generations to meet their own developmental needs. This implies that all development proposals must ensure the following:

- Adequate and appropriate protection is accorded to environmental resources in the municipality in all infrastructure planning and development.
- The use of natural resources of the environment should be within acceptable limits of change as established by legislation and guidelines.
- There should be a continued improvement in income for the municipality and especially its poor communities without compromising the ability of the environment to regenerate itself.
- A more balanced population structure and consumption patterns in the municipality should be encouraged through environmental education and awareness initiatives.

5.6.2.4. **Establishing Sustainability Framework**

A desired state of the environment should as a result of the issues discussed above, be established on a sound and objective management framework that would serve as benchmarks for decision-making. The components of this framework are shown in Table 2 below.

<table>
<thead>
<tr>
<th>COMPONENTS OF SUSTAINABILITY FRAMEWORK</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Policy and legislation</strong></td>
<td>Providing broad guidelines for environment and development and setting the necessary limits of change in the environment.</td>
</tr>
<tr>
<td><strong>General environmental sensitivity considerations and conditions at local levels</strong></td>
<td>Puts into perspective the significance of environmental attribute by way of its contribution to sustainable development or promotion of development at local level. This also includes those attributes that adversely impact on sustainability and which therefore requires corrective actions.</td>
</tr>
<tr>
<td><strong>Socio-cultural and economic imperatives and municipal planning</strong></td>
<td>Requires a balance between societal needs and the use of the natural resources of the local environment.</td>
</tr>
<tr>
<td><strong>Sectoral considerations</strong></td>
<td>Promotes co-operative governance to ensure sustainable development.</td>
</tr>
<tr>
<td><strong>Visions of stakeholders and citizens of the municipality</strong></td>
<td>Promotes collective visioning and encourages environmental stewardship.</td>
</tr>
</tbody>
</table>

Table 7: sustainability framework
5.6.2.5. Policy and Legislation Relevant to Environmental Management

**National Environmental Management Act 107 of 1998**

The National Environmental Management Act (the NEMA) was passed in 1998 with a motivation to concretise the environmental rights contained in the Constitution through the passing of 'reasonable legislative measures'. The Act is underpinned by a set of 18 environmental principles and 8 sub-principles which apply to all organs of state, including local government. Many of these principles have relevance to biodiversity conservation including the following:

- That the disturbance of ecosystems and loss of biological diversity are avoided, or, where they cannot be altogether avoided, are minimised and remedied;
- That the use and exploitation of non-renewable natural resources is responsible and equitable, and takes into account the consequences of the depletion of the resource;
- That the development, use and exploitation of renewable resources and the ecosystems of which they are part do not exceed the level beyond which their integrity is jeopardised;
- That negative impacts on the environment and on people’s environmental rights be anticipated and prevented, and where they cannot be altogether prevented are minimised and remedied.
- That the environment is held in public trust for the people, the beneficial use of environmental resources must serve the public interest and the environment must be protected as the people’s common heritage.
- That sensitive, vulnerable, highly dynamic or stressed ecosystems, such as coastal shores, estuaries, wetlands and similar systems require specific attention in management and planning procedures, especially where they are subject to significant human resource usage and development pressure. The Act provides various mechanisms through which these principles may be applied including the creation of various institutions and the drafting of environmental implementation and management plans. However, local authorities do not appear to be directly affected by these requirements (Glazewski, 2000).

In terms of Section 35 of the Act, local authorities are afforded the ability to enter into Environmental Management Co-operation Agreements (EMCAs) with any person or community for the purpose of promoting compliance with the NEMA principles. The agreements may set out measurable targets to protect the environment and provide for periodic monitoring and reporting. Although the primary purpose of EMCAs relates to environmental management rather than biodiversity conservation, they are still a potentially useful vehicle through which local municipalities could encourage individuals, communities and organisations to adopt sustainable land use practices (Patterson & Winstanley, 2003).

Embodied in the National Environmental management Act, are legislation/guidelines that seeks to address specific attributes of the environment. These are:

**National Environmental Management: Biodiversity Act 10 of 2004**

The primary purpose of the Biodiversity Act is to provide for the management and conservation of South Africa’s biodiversity within the framework of the National Environmental Management Act. The Act appoints the state as the trustee of South Africa’s biodiversity and binds all national, provincial and local spheres of government. The Act sets out three main planning instruments namely:

- The National biodiversity framework: Although the Minister of Environmental Affairs and Tourism is required to prepare and adopt a national biodiversity framework, the framework is applicable at the local level as it provides for an integrated, co-ordinated and uniform approach to biodiversity management by
organs of state in all spheres of government (Section 39(1)(a)). Furthermore, it may also determine norms and standards for provincial and municipal environmental conservation plans (Section 39(2)).

- Bioregional plans: Section 40 empowers the Minister or the MEC for environmental affairs in the province to determine an area with specific biological features as a bioregion and to draft a management plan for the area. However, a municipality may request the Minister to determine a region as a bioregion (Section 40(2)(b)) and at the Ministers request, participate in the preparation of a bioregional plan (Section 40(4)).

- Biodiversity management plans: Possibly the most useful planning instrument available to local municipalities for biodiversity conservation is the formation of a biodiversity management plan. Section 43 of the Act enables any person, organisation or organ of state wishing to contribute to biodiversity management to submit a draft management plan for an ecosystem, indigenous species or migratory species to the Minister. A biodiversity management plan must be aimed at ensuring the long-term survival of a species or ecosystem, provide for monitoring and reporting by the responsible authority and comply with the NEMA principles, National biodiversity framework, Municipal Integrated Development Plans and any international agreements to which South Africa is a signatory. Before approving the draft biodiversity plan, the Minister must identify a suitable person, organisation or organ of state willing to implement the plan (Section 43(2)) and follow the consultative process set out in Sections 99 and 100. Biodiversity management plans are reviewed by the Minister every five years (Section 46(1)). Section 48 of the Act also requires a municipality in adopting its integrated development plan (IDP) to:
  - align its plan with the national biodiversity framework and any applicable bioregional plan;
  - incorporate into the plan any provisions from the national biodiversity framework or bioregional plan which specifically apply;
  - demonstrate in the plan how the national biodiversity framework and any applicable bioregional plan may be implemented by the municipality.

Furthermore, the Act requires that a municipality in drafting and adopting an IDP take into account the need for the protection of listed ecosystems (Section 54) and the monitoring, control and eradication of invasive species (Section 76(2)(b)).

National Environmental Management: Protected Areas Act 57 2003: The Act provides for the protection and conservation of ecologically viable areas. In the event of any development falling within one of a protected area (as defined), this Act will be applicable.

**RELEVANCE OF THIS LEGISLATION TO THE DESIRED STATE OF THE ENVIRONMENT**

EThekwini Municipality has endemic and near endemic vegetation which is considered to be endangered. There are opportunities of conserving the remaining vegetation for posterity. Livelihoods in the rural areas of the municipality are also largely dependent on natural resources, which imply that a sustainable livelihood to a large extent correlates with biodiversity sustenance.

5.6.2.6. Sector DEPARTMENT Considerations

EThekwini Municipality has important sectors (Table 5) whose activities have shaped the current environment and which will influence the future environment of the municipality. These sectors together, have complementary or antagonistic impact on the environment. However, many of the sectors are also the drivers of the local and to some extent, regional and national economy. Thus establishing a desired state of the environment took cognisance of the attributes of each of these sectors.
### Table 8: key sectors in the project area

<table>
<thead>
<tr>
<th>SECTOR</th>
<th>RELEVANCE TO THE DESIRED STATE OF THE ENVIRONMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Biodiversity conservation</strong></td>
<td>Biodiversity is an important provider of natural goods and services in the municipality especially for resource poor communities. The loss of habitat, loss of threatened and endemic species, and stressed ecosystems are challenges for sustainable development. A desired state of the environment should be based on a balance between development and biodiversity conservation for which reasons MOSS was established.</td>
</tr>
</tbody>
</table>
| **Actions:**                  | • Educate traditional leaders and their subjects about the importance of biodiversity conservation and environmental stewardship, and the municipality’s biodiversity Conservation Plan (MOSS) so that MOSS  
• Educate traditional leaders about environmental considerations during land allocation processes so that  
• Establish a joint monitoring programme to  
• Establish an early warning mechanism and engage communities regarding significant biodiversity changes in the rural environment  
• Assist rural communities to engage in afforestation projects (Create Woodlots) and indigenous nurseries  
• Establish an alien plant eradication programme with community leaders |
| **Agriculture production**    | Agriculture contributes significantly to household income and food security and the local, regional and possibly national economy. In the low density rural areas of the municipality, subsistence agriculture remains the primary source of household food supplies and income. It therefore follows that disruptions to the food production system in the rural areas have a direct negative impact on household food security and household income. Effects of climate change such as drought and wildfires are likely to impact significantly on rural household livelihoods. On the other hand, agriculture is also one of the major land uses that have a detrimental impact on the environment.  
In planning a desired state of the environment within the project area, therefore, there is the need to allocate adequate environmental resources (such as water and land) to agriculture while managing the impacts that have so often plagued areas of agricultural production (e.g. combating soil erosion, eradication of alien plants, disease and pest control etc).  
**Actions:**  
• Planning that ensures that there is adequate resources to rural agricultural production to improve production systems and mitigate the impact of climate change  
  o Create weirs and dams to store water against drought and to promote scientific farming  
  o Conserve high agricultural production land for the purpose of agriculture production only  
  o Facilitate enhancement of agricultural extension services to rural households for the detection and control of crop disease |
Facilitate extension services to rural communities to combat soil erosion and land degradation.

Human settlements

Previous settlement planning processes and general settlement policy has resulted in unsuitable settlement patterns, and in some cases, settlement with incompatible other land uses. Given the current state of growth and development, settlements are increasingly relegated to high risk environments to the detriment of human well-being and environmental sustainability. The increasing conflict between suitable settlement areas, and biodiversity conservation on one hand, and the need to prevent settlement, and or relocate settled communities from high risk zones, is a consideration during the establishment of the desired state of the environment within the project area.

Actions:

- Protect ecologically sensitive areas from settlement
- Prevent further settlement from wetlands and riparian zones (a 500 meter from the edge water courses is recommended)
- High density settlements within flood potential zones have been identified. Further investigation of these is required and the appropriate remedial actions and control measures planned
5.6.2.7. Establishment of Environmental/LAND USE Conflict Zones

In order to establish the necessary spatial decision support principles and guidelines for the management of the environment within the rural areas there is the need to identify areas of the environment of the project area where there are land use conflicts. The objectives of these overlays are to identify areas of conflicting land uses and conflicting management objectives. The purpose of identifying landuse conflict areas is to bring the responsible sectors to a consensus regarding the desired landuse of the conflict areas. The main land uses and or attributes where conflicts were identified are shown in the table below.

<table>
<thead>
<tr>
<th>CONFLICTING LANDUSES</th>
<th>NATURE OF CONFLICT</th>
<th>OF CONFLICT AREAS/SITES</th>
<th>AUTHORITIES/STAKEHOLDERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biodiversity and settlement</td>
<td>Settlement occurs in environmentally sensitive areas</td>
<td>Vegetation belt along the western area around rivers</td>
<td>KZN Wildlife, Department of Human settlement, eThekwini Municipality, Department of Water Affairs</td>
</tr>
<tr>
<td>Agriculture and settlement</td>
<td>Settlement occurs on good agricultural potential land</td>
<td>Vegetation belt along the</td>
<td>Department of Agriculture  Department of Human Settlement</td>
</tr>
<tr>
<td>Alien invasion, water courses, and biodiversity</td>
<td>Alien plants threaten the ecological integrity of the western region and water resources</td>
<td>The southern region of the project area along rivers</td>
<td>KZN Wildlife, Department of Human settlement, eThekwini Municipality, Department of Water Affairs</td>
</tr>
</tbody>
</table>

Table 9: areas of conflicting land uses and conflict zones

5.6.2.8. Establishment of the Desired State of the Environment (DSoE)

The desired state of the environment needs to be a long term bench mark against which changes of the environment may be made. The desired state of the environment should therefore be established on objective principles. The DSoE is a collective set of environmental conditions that promotes a sustainable environment or sets the limits of acceptable change to the attribute within the given environment. The DSoE for the rural areas of the municipality should be viewed as a decision making tool, which the municipality can use in its future planning processes as far as sustainable environmental management is concern. The DSoE was informed by:

- Existing policy and legislation
- Existing limits of acceptable change in the environment (where such information exists e.g. national targets and thresholds for biodiversity conservation),
- The current state and the requirements to sustain the environment of the project area and
- The vision and objectives of the existing planning benchmarks.

The DSoE developed will be used, particularly the sustainability criteria, to update the strategy during future review processes.
5.6.2.9. Establishing strategy of the environment

This section of the report considers the visions and development programmes for each aspect or attribute of the environment based on the sustainability framework development in earlier sections.

5.6.2.9.1. Vision for the biodiversity environment

The vision for biodiversity management in the project area is to establish and maintain a biodiversity status that is able to function as sustainable ecosystems for the supply of ecosystem goods and services for the development of the natural, social, cultural and economic environments.

5.6.2.9.2. Objectives for achieving the vision for biodiversity Conservation

In order to attain the vision stated above, there are biodiversity related management objectives that need to be achieved. These objectives are to retain, promote, and manage:

- Critically endangered vegetation within the western section of the municipality;
- Biodiversity priority 1 areas, areas of total irreplaceability, and statutory protected areas;
- The conservation of the pristine ecosystems;
- A healthy riparian vegetation especially along the major rivers and other water courses in the project area;
- The conservation of vegetation along slopes and unstable areas as a means of erosion control;
- The established vegetation corridors (MOSS) in the project area;
- Control and eradication of alien plants within riparian zones
- In addition, the objectives include refraining from:
  - Developing on steep slopes and ridges;
  - The spread of invasive plants that occur along the rivers;
  - Expanding and spread of settlement onto endemic and near endemic vegetation areas

5.6.2.9.3. Desired State for Biodiversity Conservation in project area

The desired state for the biodiversity environment comprises of the following environmental attributes:

- Protected/conservation zones that must be considered in all development planning proposals.
- High conservation priority areas (areas of endemic and near endemic vegetation.
FIGURE 25: Conservation Plan
### 5.6.2.9.4. Rationale for Desired State for Biodiversity

<table>
<thead>
<tr>
<th>RELEVANT CRITERIA</th>
<th>SUSTAINABILITY</th>
<th>RELEVANCE TO BIODIVERSITY PROJECT AREA</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Policy</td>
<td>Biodiversity conservation is a right for current and future generations as enshrined in the constitution of South Africa</td>
<td></td>
</tr>
<tr>
<td>• Sustainable development</td>
<td>The rate of transformation of vegetation in the project area is high and not in keeping with the principles of sustainable development. If remaining vegetation is not conserved there is the risk of losing all to the detriment of posterity.</td>
<td></td>
</tr>
<tr>
<td>• National Environmental Management Biodiversity Act</td>
<td>Vegetation in the project area is being lost at an alarming rate. The NEMA Biodiversity Act requires conservation and judicious use of threatened species and ecosystems. Section 48 of the Act also requires a municipality in adopting its integrated development plan (IDP) to:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• align its plan with the national biodiversity framework and any applicable bioregional plan;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• incorporate into the plan any provisions from the national biodiversity framework or bioregional plan which specifically apply;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• demonstrate in the plan how the national biodiversity framework and any applicable bioregional plan may be implemented by the municipality.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Furthermore, the Act requires that a municipality in drafting and adopting an IDP take into account the need for the protection of listed ecosystems (Section 54) and the monitoring, control and eradication of invasive species (Section 76(2)(b)).</td>
<td></td>
</tr>
<tr>
<td>• State of biodiversity in project area</td>
<td>Extent of loss of biodiversity in the project area is high. Pressure from poor land uses coupled with potential large scale mining activities pose significant threat to remaining biodiversity resources. The desired state of biodiversity ensures that remaining vegetation areas are conserved and managed sustainably.</td>
<td></td>
</tr>
<tr>
<td>• Socio-economic reliance of the project area on the natural environment</td>
<td>A large population of the project area is rural that is totally or partially dependent on resources from the natural environment for their livelihood activities. Sustaining these livelihoods is only possible if biodiversity is sustained through conservation of the remaining vegetation and ecosystems.</td>
<td></td>
</tr>
</tbody>
</table>

Table 10: Desired State
5.6.2.9.5. Vision for hydrological environment

The vision for the water resources in the municipality is to ensure a dependable and sustained supply of good quality surface and ground water for socio-economic, and agricultural development in rural communities.

a) Objectives for achieving the vision for water resources

- Promote a culture of good land use practices in the catchment.
- Maintain catchment vegetation especially along the major rivers and streams.
- Eradicate alien plants in the riparian zones of all major rivers.
- Control timber plantations in the hydrological sensitive areas.
- Control the depletion and degradation of wetlands.
- Control development in areas identified as potential flood risk areas
- Control expansion of settlement into hydrologically sensitive areas

b) Desired State for hydrology in the PROJECT AREA

The desired state for hydrology comprises of the following environmental zones:

- Establishment and maintenance of 500 m setback development exclusion zones along the rivers of the municipality. (See settlement changes within 500 m of Bivane River of 10 years period)
- Establishment and maintenance of 100 year floodline within which no development takes place around wetlands
- Maintenance of a development exclusion zone within all identified flood prone areas in the municipality

- Eradication of alien plants within the flood-lines and setback lines along the rivers
- Establishment of erosion control measures around all rivers
- Prevention of settlement within flood risk zones in the project area

13 A list of households in flood risk zones is attached as Appendix 1
FIGURE 26: Showing transformation due to settlement between 2006 and 2014 within 1km of an area along the Bivane River in the southern rural part of the municipality.
FIGURE 27: 2014 transformations

Bivane 500 m riparian zine in 2014
FIGURE 28: Flood Risk zones that Require Strategic Management Attention
## Rationale for Desired State for Hydrology

<table>
<thead>
<tr>
<th>Relevant sustainability criteria</th>
<th>Relevance to Hydrology in the Project Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Policy</td>
<td>South Africa is a water stressed country that currently import water from Lesotho. Conservation of water resources is a priority policy of national government.</td>
</tr>
<tr>
<td>• Sustainable development</td>
<td>Economic development relies significantly on a sustained and reliable supply of water as one of the principal raw materials of production. Environmental degradation including loss of wetlands and riparian vegetation contributes to reduced groundwater recharge, and poor and undependable water supply. The maintenance of a healthy hydrological environment and good land use practices would enhance a good and sustained water yield in the municipality.</td>
</tr>
<tr>
<td>• National Water Act</td>
<td>According to the national water act, the objective of managing the quantity, quality and reliability of the nation's water resources is to achieve optimum, long term, environmentally sustainable social and economic benefit for society from their use. The water act requires that quantity, quality and reliability of water required to maintain the ecological functions on which humans depend shall be reserved so that the human use of water does not individually or cumulatively compromise the long term sustainability of aquatic and associated ecosystems. The national water act also requires that alien plants must be eradicated from water courses and riparian zones as they contribute to the loss of surface and ground water.</td>
</tr>
<tr>
<td>• Conservation of Agricultural Resources Act</td>
<td>The invasion, domination, and colonisation of riparian zones by alien plants lead to reduced flow of in water courses. The National Water Act requires that alien plants be eradicated to prevent the negative potential impacts.</td>
</tr>
<tr>
<td>• State of Hydrology in project area</td>
<td>Groundwater yield are high in some areas but poor in others. Groundwater recharge requirements such as maintenance of adequate groundcover need to be encouraged. Surface water yield and quality are being reduced due to poor landuses. Flooding potential in the municipality is likely to occur along the central axis of the municipality. It is necessary to put the required risk adverse measures to save the loss of lives and property.</td>
</tr>
<tr>
<td>• Socio-economic reliance of the project area on the natural water sources</td>
<td>A large population of the project area is rural that is totally or partially dependent on water from natural sources. Sustaining these livelihoods is only possible if water resources are sustained.</td>
</tr>
</tbody>
</table>

### Table 11: Rational for Desired State
5.6.2.9.6. Establishing a desired state for the rural environment

The desired state of the environment is a composite overlay of various environmental desired states so that the resultant spatial display is map showing. The resultant desired state of the environment for this particular study is a map showing areas within the rural environment where development is restricted or all together not recommended (Map 6). The desired state is premised on the following key issues:

- Development in these exclusion zones should be carefully planned strictly in conjunction with the Department of Environmental Planning and Climate Protection to ensure that such plans are in line with the overall biodiversity planning requirements of the municipality.

- The areas designated of requiring approvals from the Department of Agriculture are so designated due to the fact that rural households are largely dependent on agriculture as the primary source of their livelihood. The recommendation to restrict development in these areas is to conserve agricultural land as a fundamental resource that sustains rural livelihoods.

- Rural communities are often victims of natural disasters such as floods due the fact that communities are often established in close proximity to sources of water which in the case of the rural environment are streams and rivers. As a result of the close proximity to these environments, rural households are vulnerable to flood risks. Thus flood plains have been identified as ‘no go’ areas for development especially settlement.
5.6.2.9.7. Desired State of the Environment

Figure 29: Desired State of the Environment indicating Restricted Development Areas in Rural eThekwini
5.6.2.10. Programmes to ensure environmental sustainability in the rural areas

The need for a Forum for Environmental Review

Owing to the diversity of environmental issues and sensitivity of the environment within and around the municipality, there would be the need to establish an environmental review forum where collective discussions regarding the environmental issues facing the rural areas would be held. It is recommended that the formation and functioning of this forum should be spearheaded by the Department of Environmental Planning and Climate Protection and should be hosted by the municipality.

The Forum for Environmental Review would have the following functions among others:

- Discuss environmental policies and regulations and laws and their implications for development in the rural municipality;
- Discuss environmental risks and required emergency preparedness measures for national and global trends in environmental issues and management;
- Review sector environmental management activities e.g. catchment management, Water User Associations, Landcare Programmes, Tourism Activities, Medicinal Plant Harvesters – Traditional Healers Association etc;
- Discuss and develop guidelines for resource use in the rural areas of the municipality e.g. the principle of ‘Payment for Ecological Goods and Services’;
- Platform for education and awareness in the field of environment and development (particularly regarding the limitations and opportunities of the municipality);
- Advice traditional leaders regarding environmental stewardship

Environmental Monitoring and Reporting

Monitoring environmental performance is a critical requirement for the purpose of ensuring continual improvement. Monitoring should cover key environmental areas and sensitive environments including:

- The impacts of activities within the rural areas of the municipality;
- Level of river health systems in terms of alien plant control and eradication;
- Activities of Landcare groups in the rehabilitation and control of dongas;
- Extent of care and development impacts on archaeological sites within the municipality;
- Levels of waste generated by the two main industries and waste disposal methods.

Environmental Education and Awareness

‘Knowledge is power’ the adage goes. One of the major obstacles to environmental management and embracing environmental stewardship is the lack of adequate awareness of the value of natural resources in relation to the issue of sustainability. Environmental education and awareness should be a component of the responsibilities of the environmental control officer in the municipality. Key target groups in rural areas for environmental education include:

- Schools;
- Traditional authority structures;
- Local political structures (Ward Councilors and Committees);
- Resource user groups.
Future environmental issues for discussion

- Payment for ecological goods and services

Payment for the direct or indirect use of environmental goods and services by all major resource users is still a challenge in South Africa particularly in rural communities. Modalities to implement the principle of payment for environmental goods and services needs to be explored in future environmental forums and reviews.

5.6.2.11. Conclusions

Rural households are to a large extent dependent on the resources of the natural environment for sustenance. As a result, rural households are most vulnerable to effects changes in the environment as a whole and particularly climate changes. This strategy report for managing the environment within the rural areas of eThekwini Municipality is aimed at protecting the rural households against loss of livelihoods and protecting them from environmental risks such as floods. The main issues in this strategy are:

- Considerable development in some parts of the project area defined as rural would in respect of biodiversity significance be excluded from the project area. The implication of this situation is that there would have been significant transformation and loss of biodiversity and consequently, a reduced footprint of ecologically functional rural areas of the municipality. This probably intensifies the need for a more stringent control of development and further loss of vegetation in the rural areas of the municipality.

- It is observed that several households are located in environmentally sensitive areas. At this stage the eminent strategy is to develop discourage further settlement in these areas and educate communities about the dangers of settling in environmentally sensitive areas.

- There is evidence that significant transformation has occurred within sensitive areas e.g. within 500 m of rivers and streams. Apart from the potential environmental risks to households, such transformation has impact on biodiversity, water quality and quantity and thus educating traditional leaders.

- It is understood that the Environmental Planning & Climate Protection Department of eThekwini Municipality has a tree planting programme as a means of mitigating the effect of climate change within the rural areas of the municipality.

5.6.2.12. Recommendations

- The need for a Forum for Environmental Review

Owing to the diversity of environmental issues and sensitivity of the environment within and around the municipality, there would be the need to establish an environmental review forum where collective discussions regarding environmental issues facing the municipality would be held. The key target

- Environmental Education and Awareness

One of the major obstacles to environmental management and embracing environmental stewardship is the lack of adequate awareness of the value of natural resources in relation to the issue of sustainability. Environmental education and awareness should be a component of the strategy for environmental stewardship in the rural areas of the municipality.

Existing environmental education centres or institutions that are already involved in environmental education issues could offer periodic training and education programmes for the relevant stakeholders such as traditional leaders, Ward Councillor and Committee, and ward Development Committees in the rural areas.

ETHEKWINI RURAL STRATEGY -
<table>
<thead>
<tr>
<th>RIVER_NAME</th>
<th>CATCHMENT</th>
<th>HOMESTEADS IN FLOODPLAIN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Msimbazi</td>
<td>Msimbazi</td>
<td>1</td>
</tr>
<tr>
<td>MSHWATI</td>
<td>uMgeni</td>
<td>1</td>
</tr>
<tr>
<td>Gezangani Stream</td>
<td>uMlaza</td>
<td>1</td>
</tr>
<tr>
<td>Umlaas River</td>
<td>uMlaza</td>
<td>1</td>
</tr>
<tr>
<td>Bivane Stream</td>
<td>Isipingo</td>
<td>1</td>
</tr>
<tr>
<td>Little aManzimto</td>
<td>aManzimtoti</td>
<td>1</td>
</tr>
<tr>
<td>Sikelelkehleni</td>
<td>uMgeni</td>
<td>2</td>
</tr>
<tr>
<td>Mawothana River</td>
<td>Ohlanga</td>
<td>2</td>
</tr>
<tr>
<td>Matata River</td>
<td>uMgeni</td>
<td>2</td>
</tr>
<tr>
<td>Nungwana</td>
<td>Lovu</td>
<td>2</td>
</tr>
<tr>
<td>Mnamb</td>
<td>uMgeni</td>
<td>2</td>
</tr>
<tr>
<td>Sijoti Stream</td>
<td>uMgeni</td>
<td>2</td>
</tr>
<tr>
<td>Wekeweke Stream</td>
<td>uMlaza</td>
<td>3</td>
</tr>
<tr>
<td>Mawathni River</td>
<td>Ohlanga</td>
<td>3</td>
</tr>
<tr>
<td>Sikele</td>
<td>uMgeni</td>
<td>3</td>
</tr>
<tr>
<td>Nonoti</td>
<td>uMgeni</td>
<td>4</td>
</tr>
<tr>
<td>Umgeni River</td>
<td>uMgeni</td>
<td>4</td>
</tr>
<tr>
<td>Mqeka</td>
<td>uMgeni</td>
<td>4</td>
</tr>
</tbody>
</table>

Table 12: Households in Flood Zones

<table>
<thead>
<tr>
<th>RIVER_NAME</th>
<th>CATCHMENT</th>
<th>HOMESTEADS IN FLOODPLAIN</th>
</tr>
</thead>
<tbody>
<tr>
<td>KwaWiliwili</td>
<td>uMlaza</td>
<td>5</td>
</tr>
<tr>
<td>Umgababa</td>
<td>Umgababa</td>
<td>7</td>
</tr>
<tr>
<td>Umhlatuzana</td>
<td>Umhlatuzana</td>
<td>8</td>
</tr>
<tr>
<td>Ngane</td>
<td>Ngane</td>
<td>8</td>
</tr>
<tr>
<td>Gabhagabha River</td>
<td>Umhlangane</td>
<td>8</td>
</tr>
<tr>
<td>Umkomazi River</td>
<td>uMkhomazi</td>
<td>9</td>
</tr>
<tr>
<td>Mkhele</td>
<td>uMgeni</td>
<td>9</td>
</tr>
<tr>
<td>aManzimtoti</td>
<td>aManzimtoti</td>
<td>19</td>
</tr>
<tr>
<td>Umlazi River</td>
<td>uMlaza</td>
<td>25</td>
</tr>
<tr>
<td>Sterkspruit</td>
<td>uMlaza</td>
<td>26</td>
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<td>Mdloti</td>
<td>uMdloeti</td>
<td>31</td>
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<td>Golokodo River</td>
<td>Isipingo</td>
<td>36</td>
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<tr>
<td>Molweni</td>
<td>uMgeni</td>
<td>79</td>
</tr>
<tr>
<td>Mzinyati</td>
<td>uMgeni</td>
<td>102</td>
</tr>
<tr>
<td>Mbokodweni Riv</td>
<td>Isipingo</td>
<td>132</td>
</tr>
<tr>
<td>Isipingo River</td>
<td>Isipingo</td>
<td>174</td>
</tr>
</tbody>
</table>
5.6.3. INFRASTRUCTURE SERVICES

5.6.3.1. Introduction

Within the traditional rural areas of the EThekwini municipality there has been rapid growth and a significant change in the population densities which in turn has changed the type of settlement and has created a greater need for adequate service delivery.

The structuring approach to this phase of the rural development strategy categorizes settlements types according to their population densities and certain strategies are proposed for each type of settlement, however it is deemed that some of the proposed strategies apply to more than one settlement type.

Each infrastructure service is dealt with separately, however certain services such as water and wastewater will be directly related such as the provision of water-borne sanitation which is directly related to the availability of sufficient water supply.

5.6.3.2. Approach and Objectives of the Strategic Vision of the Rural Areas

From the status quo report, the structuring approach, seen in the table below, was established in classifying the area types for the study area according to their population area densities. The unit used in classification process is the amount of dwelling units per one hectare of land (du/ha).

<table>
<thead>
<tr>
<th>AREA TYPE:</th>
<th>POPULATION AREA DENSITY:</th>
<th>DENSITY DESCRIPTION:</th>
<th>EXAMPLE IN ETHEKWINI MUNICIPALITY:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peri-Urban Areas</td>
<td>Above 20 du/ha</td>
<td>High Density informal settlements in the Peripheries</td>
<td>Folweni</td>
</tr>
<tr>
<td>Medium Dense Areas</td>
<td>7-20 du/ha</td>
<td>Low density homesteads in the peripheries</td>
<td>Umbumbulu</td>
</tr>
<tr>
<td>Rural Residential Areas</td>
<td>4-7 du/ha</td>
<td>Rural residential settlements</td>
<td>Ntshongweni</td>
</tr>
<tr>
<td>Commercial</td>
<td>Less than 4 du/ha</td>
<td>Commercial/Farming Areas</td>
<td>Canelands/ Camperdown Rural</td>
</tr>
</tbody>
</table>

Table 13: Structuring Approach to EThekwini Rural Areas

5.6.3.3. Aims and Objectives of the Report

This report will strive to achieve the following:

- Establish the key issues relating to water, wastewater, stormwater and electricity from the status quo report,
- Determine the standard level of services for water, wastewater, stormwater responding to each area type.
- Provide strategies for each infrastructure service to each different settlement type,
- Provide programmes that aid in improving the current level of service and correspond to the proposed strategies.
5.6.3.4. WATER

5.6.3.4.1. Key Issues from Status Quo Report
The following implications and key issues were deduced from the status quo report:

- Illegal water connections and wastage of water supplied to households strains the municipal supply volumes
- Illegal water connections cause substantial financial losses for the municipality in terms of loss of revenue
- Areas that receive water from water trucks are vulnerable to having no water if the roads are not serviced regularly and truck breakdowns ect.
- Where residents collect water from an untreated collection point, there is a risk of contracting water-borne diseases
- The provision of water for domestic and commercial consumption is directly related to personal and community hygiene.

5.6.3.4.2. Concepts and Standards Responding to Population Area Densities
The Guidelines for Human Settlement Planning and Design outlines the following objectives when planning to supply water to a settlement:

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

5.6.3.4.3. Levels of Service
Occupation densities, available sources of water and current infrastructure will inform the decision of the planned level of service. The available levels of service are identified below according to the Policy and practices of the EThekwini Municipality Water and Sanitation Unit.

- Level 1
  A manually operated water dispenser/standpipe
- Level 2
  An individual household yard supply which supplies 300 litres per day (ground tank, where the flow is regulated through an electronic bailiff unit or metered flow limiter device, or a yard tap where the flow is regulated via metered flow limiter device).
- Level 3
  A semi-pressure supply in which the household service is provided via a roof tank.
- Level 4
  A full pressure supply.
- Level 5
  A full pressure supply with a restrictor.

5.6.3.4.4. Water Strategies for the Ethekwini Rural Areas
As mentioned on the previous section, the level of service provided to the household is dependent on occupation densities and available sources of water. The current level of service in the study areas varies. The actual level of service within nodes will be identified and evaluated once in-depth studies are undertaken on specific nodes. This report provides a holistic view of improvements based on the various settlement densities.
Water supply to households are generally regarded as reliable and clean. This was established during community interviews conducted during the status quo phase. These interviews were undertaken to determine the existing water harvesting and supply networks throughout the entire project area. Rain water, which is predominately of a high quality, is utilized at some residential houses situated within rural nodes. The water supply, by means of bulk water supply lines, is of good quality throughout the entire project area.

The current implications and key issues of the current level of service of water supply in the study area relates predominantly to water losses and illegal water connections. This puts further strain on municipal water supply. These illegal water connections are generally due to insufficient stand pipe and communal water points within rural areas. This results in residences tapping of main supply lines in an illegal manner for easier access.

Therefore the proposed strategies are inclined to preserve and monitor current water consumption as well as to address the availability and investment in new bulk water infrastructure. Bulk water supply networks along with standpipe/yard connections at more frequent locations will assist in reducing the amount of unaccounted water.

Water will be accounted for in a more controlled manner through the implementation of metered connections where possible. These metered connections can be for a single dwelling unit or a cluster of units. It must be noted that all metered connections and supply lines will have to be controlled/monitored to ensure that water is accounted for to a predetermined level of accountability. The exact allocation of metered points will have to be proposed and evaluated during a detail investigation phase undertaken for each node.

It is proposed that a service level 1 be supplied to low settlement densities. These settlement densities typically relate to a few households located a fair distance from one another. It will not be financially viable to install a level of service 5 for low settlement densities. However, the financial viability of constructing and providing a higher level of service to individual households within this low settlement density area needs to be investigated on a spatial level.

Medium to high settlement densities can be supplied with a level 4 or 5 supply. Again, a detailed study is needed to determine the financial viability of installing this level of service within settlement densities. A continuous revenue stream must be generated from these densities in order to make the proposed improvements financially viable.

The minimum 9kL/month free water policy is generally regarded as a policy starting point for the rural areas within the ETekwini municipality. With increasing growth and densities in peri-urban areas, strategic measures must be introduced to preserve the existing water supply and reduce wasting of water.

The following strategies are proposed:

- Establish a cadastral and postal database using GIS whereby the municipality can bill water customers, where applicable
- Provide metered water connections to households and charge customers for water where applicable and viable
- Provision of measures to eradicate illegal water connections though detailed water control measures.
Strategies for the provision of new bulk infrastructure should include the following:

- Establish a well-documented cadastral layout of all formal and informal settlements.
- Establish the capacity and operational status of existing water reservoirs.
- Investigate the capacity and operational status of existing water treatment works and water pumpstations.
- Investigate the capacity and operational status of existing bulk water pipelines.
- Determine and estimate what future water demands will be needed with increasing population growth in peri-urban areas.
- Identify possible water sources where existing abstraction and treatment plants can’t meet future demand.

Identify areas and land for new bulk infrastructure (reservoirs, bulk supply and reticulation).

5.6.3.4.5. Water Programmes for the EThekwini Rural Areas

The overall implications of water services within the study area refer to all areas and thus a more holistic program should be developed for the entire study area. This program will have to be applied to identified nodes where the proposed development strategy is known.

The following programmes are proposed:

- Educational programs informing residents about the scarcity of water and the implications of wasting water has on the municipality.
- Educational programs focused on the impact of illegal connections on the supply conditions for individual areas.
- Informing households about the 9kL/month free policy and how it should be adhered to.
- Create community driven programs which helps in identifying water leaks in house connections and secondary water lines.
- Monitoring and control systems required to reduce the amount of illegal connections on all bulk supply lines and reticulation networks.

5.6.3.5. WASTEWATER

5.6.3.5.1. Key Issues from Infrastructure Status Quo Report

The status quo report provides information on the current method of disposal and its implications on the rural areas of the EThekwini Municipality. The following implications and key issues were deduced from the status quo report:

- Mismanagement and abuse of the urine diversion toilets poses health risks.
- Groundwater and soil contamination from informal septic tanks and soak away systems.
- Septic tanks and soak ways are situated in locations where the soil conditions do not meet the acceptable percolation rate or the soak ways are saturated.
- Uncontrolled greywater disposal poses both a health risk to the community as well as risk to the environment.
5.6.3.5.2. Concepts and Standards Responding to Population Area Densities

Provision of basic sanitation to communities can be summarized as below: (Detail investigation will be required once individual development nodes are identified)

- Improving the health and quality of life for the community.
- Integrate development of communities into populations with basic sanitation.
- Protect the environment through adequate sanitation.
- Placing the responsibility of household sanitation into the hands of the associated households.

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

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

It must however be noted that once development within a node is established, detail investigation into the current level of service will be required. This will allow for better understanding of what steps will be required to improve the existing level of service.

The main criteria for sanitation systems within a community can be summarized as below:

- Reliability
- Acceptability
- Appropriateness
- Affordability
- Sustainability

Levels of Service

When determining the level of service for a particular area, factors such as occupancy densities, cost implications and terrain must be carefully scrutinized. The level of service will be determined during an in-depth analysis undertaken once the development guidelines for a certain node has been determined.

The levels of service are discussed below:

- Level 1
  A privately owned Urine Diversion toilet.
- Level 2
  A connection to the Municipal water borne sewerage reticulation system.
- Level 3

Where a municipal waterborne sewerage reticulation system is not available, an on-site privately owned sewage disposal system is permitted.

The following options were established by the EThekwini municipality as approved sanitation options for associated level of water supply:

- Water supply limited to 300 litre per day via a ground tank or yard tap, a UD toilet is the approved installation option.
- Water supply through a semi-pressure or full pressure water supply is provided, water borne sanitation is the only allowable option.
- Mixed service levels will be allowed subjected to:
  - The sanitation option matching the level of water supply available/implemented by the householder
  - Water supply system being able to sustain the level of water demand

The following factors must be considered while choosing a sanitation system:

- System should not be beyond the technical abilities of the community, operator and maintenance.
- System should not be beyond the community’s ability to meet capital and maintenance costs.
• Future upgrading should be considered (particularly the level of service of the water supply system).
• System should operate within acceptable limits despite misuse by community.
• System should require as minimal maintenance as possible.
Further investigation will be required once development within the identified nodes are established. The type of development within these nodes will influence the infrastructure improvements.

5.6.3.5.3. Wastewater Strategies for the Ethekwini Rural Areas

The peri-urban nature of the study area is currently experiencing rapid growth and future growth is expected to continue at a similar rate. Therefore with an increasing population density and less space for future households, the level of service provided must be deemed to be the highest and consist of a water-borne sewer network.

Whilst most of the study area contains limited water-borne sewer, most of the peri-urban areas should approach to forming a strategy that can accommodate water-borne sewer. An in-depth investigation and analysis will be required once development within nodes are finalized. The following factors will provide guidance into determining the best suited improvement to existing infrastructure:

• Location and proximity to current bulk infrastructure
• Establish the capacity of existing wastewater treatment works, wastewater pumpstations and sewer outfalls
• Propose new potential sites for wastewater treatment works and pumpstations
• Establish the availability of adequate water supply to areas that allow for water-borne sewerage
• Acknowledge the topography and geology of the area and deduce what challenges and constraints there are in implementing water-borne sewage

In medium dense and rural residential areas where there is on-site sanitation in the form of septic tank and soak away systems, the following is proposed in dealing with the negative implications that informal septic tanks and soak ways produce.

• Mapping areas within the study area where groundwater percolation rates are suitable for installing septic tank and soak ways.
• Informing households of the dangers of contaminating groundwater
• Provide households with adequate engineering designs of soak away systems such that they function properly and are not full.

The urine-diversion (UD) toilet is the most common form of waste disposal in the study area and is the preferred means of waste disposal for less densely populated settlements by the eThekwini Municipality according to the eThekwini Spatial Development Framework 2014/2015.

The pitfalls and negative implications of the urine-diversion toilet have been acknowledged and certain strategies have been deduced in order to maintain the current level of service. These strategies are listed below:

• Develop a framework whereby the UD toilets are serviced and maintained by the municipality
• Introduce measures where there is a municipal collection of faecal matter from Urine Diversion toilets for biomass energy production and the household residents have an incentive to participate in the process.
• Encourage homeowners to utilise and maintain by creating awareness about UD toilet operations.

It must however be noted that the above mentioned strategies are merely a guideline based on a generic approach to sanitation improvement. Each node will have to be treated individually with investigations undertaken in order to determine the specific characteristics within an identified node for an applicable strategy to be developed and implemented.
5.6.3.6. STORM WATER

5.6.3.6.1. Key Issues from Infrastructure Status Quo Report

The implications on the rural areas that were deduced from the status quo report are as follows:

- Lack of stormwater infrastructure on district and gravel roads causes erosion and potential road failure
- Households located in the 1:100 year flood plains are at risk of being flooded
- Poor internal stormwater management within built areas causes erosion and damage to adjacent properties and infrastructure
- Deteriorating stormwater infrastructure such as damaged headwalls and manholes present big risks if they fail under severe flooding.

5.6.3.6.2. Concepts and Standards responding to Population Area Densities

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

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

5.6.3.6.3. Stormwater Management Principles:

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

- Flood plains should be protected and preserved to perform their natural stormwater conveyance and storage functions.
- The stormwater drainage system (‘V’ Drains, Open Channels etc.) should be designed to convey runoff in a controlled manner that will not adversely affect upstream, adjacent or downstream properties on watercourses.
- Watercourses should be inspected and maintained to control blockage, erosion and physical and chemical pollution.
- Individual developments should have stormwater drainage systems that are integrated with a master drainage plan.

5.6.3.6.4. Stormwater Strategies for the Ethekwini Rural Areas

Peri-urban areas are serviced mainly by good road networks consisting of mainly metropolitan and provincial roads which have existing stormwater infrastructure.

A policy of the EThekwini Municipality is that houses may be constructed within the 1 in 100 year floodplain.

- Identify areas where there are households located within the 1 in 100 year floodplain and formulate mitigation measures in preventing further household being built in these areas and warning resident of the dangers of building in the floodplain.
- In accordance with the stormwater management principles, in a specific high density areas create a master drainage plan for the area.
- Investigate the current drainage patterns and existing stormwater and ma
For a certain area or spatial framework, an audit and review dilapidated or failing stormwater infrastructure including and presenting the following measures to prevent flooding and water ponding.

- Clearing of vegetation from headwalls
- Maintaining of road kerbs
- Clearing stormwater manholes of debris and litter
- Asphalting of district roads in order to provide better access rural investment nodes as well as improving the overall infrastructure
- Provide better drainage to the district and gravel roads and create a more formal drainage environment.

5.6.3.6.5. Stormwater Programmes for the Ethekwini Rural Areas

Erosion caused from flooding in households can be achieved by attenuating water from hardened surfaces through various rainwater harvesting measures and limit flooding inside dwellings.

A backlog in municipal services as well as funding for extra municipal workers allows for the involvement of the community in participating in certain programmes such as alleviating overgrown vegetation from stormwater features.

5.6.3.7. ELECTRICITY

5.6.3.7.1. Key Issues from Infrastructure Status Quo Report

- The prepaid card system allows residents to control the amount of electricity they consume and provides the municipality with better control of service over the area.
- The municipality has control over the amount of electricity it supplies to the rural areas and thus reduces abuse/theft of supply and minimises municipal debt.
- Residents have access to buying prepaid airtime, however transport costs/access to obtain cards more readily needs to be addressed.

5.6.3.7.2. Strategies and Programmes for the Ethekwini Rural Areas

The current system of prepaid meters and electrical supply is deemed as a system that works and it is therefore encouraged to maintain the current status quo, however there are a few strategic measures that can be introduced to ensure that system is optimized.

- Ensure that there is coverage to household throughout the study area
- Anticipate the future growth and demand for electricity in the study area and provide the necessary bulk supply.
- Create more outlets where residents have easier access to buying prepaid vouchers.
5.6.4. ECONOMIC ISSUES

5.6.4.1. The vision

The proposed vision for the development of the eThekwini ‘rural’ economy reads as follows:

Through ‘radical economic transformation’ provide residents of the so-called rural areas with access to economic opportunities and services, with a view to establish a vibrant and growing local economy.

The dictionary defines ‘radical’ as follows: (especially of change or action) relating to or affecting the fundamental nature of something; far-reaching or thorough.

5.6.4.2. The role of rural areas in the eThekwini economy

From an economic development perspective the role of the so-called rural areas are viewed as being, viz.:

- To support agricultural production primarily in commercial farming areas, while contributing to overall land redistribution targets;
- To provide a full range of economic development opportunities to local residents, as well as related services and infrastructure (not dissimilar to other residential areas in eThekwini);
- To function as an integral part of the eThekwini economy – i.e. it should not be viewed as a residential area only; and
- To provide ecosystem services (it has been previously established that there exists a strategic link between the state of the eThekwini Municipality’s natural capital, its ability to deliver eco services and the extent to which this provides resilience to the economy and / or makes it vulnerable (Isikhungusethu 2012)).

The component focusing on the provision of ecosystem services is not at present dealt with in terms of the economy, but should be part of the focus of the environmental strategies.

5.6.4.3. The objectives

Considering the proposed vision the overall objective is to establish and grow economic development in the rural areas of eThekwini. The more specific objectives are:

- Objective 1: Improve economic linkages
- Objective 2: Establish economic infrastructure
- Objective 3: Facilitate economic activity

OBJECTIVE 1: IMPROVE ECONOMIC LINKAGES

The so-called eThekwini rural areas serve as the interface between urban eThekwini and three predominantly rural municipalities with a further Rural population of more than 1 million people. Despite the peri-urban and rural areas having been the focus for residential densification in
eThekwini over the past 10 to 15 years there has been limited focus on better integrating the rural and urban systems. A number of factors have potentially contributed to this lack of integration, including the establishment of the Urban Development Line or UDL. In order to integrate rural and urban space linkages through eThekwini Rural areas will have to be improved, this will include linkages between Rural eThekwini and neighbouring Districts, as well as between the rural and urban areas within eThekwini. The dependence of rural residents on urban services and facilities must be addressed.

**OBJECTIVE 2: ESTABLISH ECONOMIC INFRASTRUCTURE**

Although rural development has received substantially more attention over the past two decades the focus has been on addressing basic service delivery. The potential contribution the rural areas can make to the urban economy has generally not been considered. Although spatial frameworks support the focus on nodal development in rural areas the impact of this policy focus has been limited as is noted from levels of development observed at the various identified nodes. The development of nodes, as a key component of rural economic infrastructure, is viewed as an important first step in transforming the rural (spatial) economy.

**OBJECTIVE 3: FACILITATE ECONOMIC ACTIVITY**

Household and individual needs in terms of hard and soft services have been the focus of rural development interventions to date. A much more focused effort, aimed at actively facilitating economic development, is required in order to ensure the sustainability of development in the so-called rural areas.

### 5.6.4.4. The strategies

The Economic Development Strategies cannot be implemented in a vacuum. Strategies relating to other sectors will have to be pursued in rural areas in order to establish an environment for economic growth. As a minimum the strategies should include:

- Driving Spatial Transformation
- Structuring the Institutions for Delivery
- Contributing to Environmental Sustainability
- Addressing Social Needs

The following strategies aimed at achieving the above economic development objectives are proposed:

**OBJECTIVE 1: IMPROVE ECONOMIC LINKAGES**

- Strategy 1: Establish and maintain road Networks
- Strategy 2: Provide telecommunications (incl. Broadband) access
- Strategy 3: Disseminate information

**OBJECTIVE 2: ESTABLISH ECONOMIC INFRASTRUCTURE**
- Strategy 1: Establish Appropriate Infrastructure in nodes
- Strategy 2: Establish and manage business / production facilities

OBJECTIVE 3: FACILITATE ECONOMIC ACTIVITY

- Strategy 1: Grow Intensive Agriculture
- Strategy 2: Build Community Tourism
- Strategy 3: Promote Informal Retail
- Strategy 4: Attract Formal Retail
- Strategy 5: Facilitate increased Production / Manufacturing

The strategies aimed at achieving the above objectives are further discussed / unpacked.

The strategies to be focused on in the development of the eThekwini rural economy, as identified in the previous section, are described in more detail in the tables following.

Each strategy is discussed in terms of:

- Motivation: The current situation giving rise to the need for the strategy;
- Problem statement: The impact of the current situation on the rural economy;
- Approach: The proposed solution for addressing the current situation;
- Programmes: The programmes to be implemented relating to the strategy.
**a) Objective 1: Improve economic linkages**

<table>
<thead>
<tr>
<th>STRATEGY 1.1: ESTABLISH AND MAINTAIN ROAD NETWORKS</th>
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<tbody>
<tr>
<td><strong>Motivation (Current Situation):</strong> The so-called rural areas of eThekwini have been established in areas with adverse topography with limited to no pre-planning. Access infrastructure has developed over time with the upgrading of dirt tracks to District Roads and development has taken place around this basic road infrastructure with the allocation of land being the responsibility of Traditional Councils. Most linkages between rural and urban areas have then generally been an “afterthought” and generally provided in <em>ad hoc</em> uncoordinated fashion. Roads are upgraded on demand of communities and leaders.</td>
</tr>
<tr>
<td><strong>Problem statement:</strong> A clear spatial structure consisting of nodes and movement routes have not been established in the rural areas of eThekwini. There is therefore limited guidance for both public and private sector investment in rural eThekwini. As a result of this the limited development that takes place is implemented in an <em>ad hoc</em> manner without a clear “spatial sense”. Opportunities and services provided are therefore still difficult for communities to access. Infrastructure provided also does not provide the linkages required, i.e. linkages between urban and rural areas, between rural and rural areas, and between eThekwini rural areas and neighbouring municipalities.</td>
</tr>
<tr>
<td><strong>The approach (solution):</strong> To establish a clear road network linking existing and future planned development nodes. Prioritise and align investment according to such a spatial framework.</td>
</tr>
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<table>
<thead>
<tr>
<th>Programmes:</th>
<th>The proposed programmes / interventions are:</th>
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<tbody>
<tr>
<td></td>
<td>• Establish primary road structure</td>
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<td></td>
<td>• Develop secondary road structure</td>
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<td></td>
<td>• Establish road maintenance programme for <em>other</em> roads</td>
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</tbody>
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### STRATEGY 1.2: PROVIDE TELECOMMUNICATIONS (INCL BROADBAND) ACCESS

**Motivation (Current Situation):**
As illustrated in the map of MTN 3G coverage in eThekwini, the majority of areas outside of the Urban Development Line has no or limited access to broadband services. Coverage for normal telecoms through 2G services is much broader, however, the majority of rural areas also do not have access to fixed line services.

**Problem statement:**
Access to broadband will provide the so-called rural communities with improved access to education, training and economic opportunities. Without universal access to telecommunication services the opportunities for integrating the rural economy into the urban economy will be limited.

**The approach (solution):**
Providing universal access for all to ICT services will be a process and priorities must be clearly established. A first step in this process will be to ensure that communities without access to the most basic telecommunication services (either fixed line or 2G) are connected. Making use of existing government infrastructure it will then be suggested that broadband services be made available at key government facilities in rural areas, e.g. offices, schools, clinics etc. The focus of the spatial development framework is then also on the development of towns in underdeveloped areas.

**Programmes:**
The proposed programmes / interventions are:
- Telecommunications access
- Broadband access at government facilities
- Broadband access in all Towns

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### STRATEGY 1.3: DISSEMINATE INFORMATION

**Motivation (Current Situation):**
For a number of reasons people residing in the so-called rural areas do not have access to information that will support their efforts to engage in the formal or informal economy. The lack of information available, however, does not only impact on the economy, but also to how people relate to a range of government institutions (including the municipality).

**Problem statement:**
Systems and infrastructure for disseminating information to people in underdeveloped areas are limited. This relates to some extent to access to telecommunication services, but the challenge to provide access to information is much wider.

**The approach (solution):**
A specific effort must be made to ensure that people in areas outside of the UDL have access to relevant information. This will require a focus on:
- Providing infrastructure for information dissemination;
- Establishing systems for information dissemination; and
- Identifying and compiling the information to be made available.

**Programmes:**

The proposed programmes / interventions are:

- Job market information (specifically focussing on existing or to be established economic nodes relating to the so-called rural areas)
- Market information
- Economic opportunity information
- Municipal information
**Objective 2: Establish economic infrastructure**

### STRATEGY 2.1: ESTABLISH APPROPRIATE INFRASTRUCTURE IN NODES

| Motivation (Current Situation): | Statistics suggest that 24% of the eThekwini population resides in the so-called rural areas. With the exception of those communities that can access Umbumbulu town the residents of these areas have to travel to towns forming part of "urban eThekwini" to access services and opportunities. These towns include Pinetown, Isipingo, Verulam, Tongaat and others. The majority of development nodes identified in the 2014 eThekwini SDF (Rural investment nodes and Rural service nodes) lacks substantial economic activity and makes a limited contribution to providing access to services and opportunities for local residents. |
| Problem statement: | Infrastructure to support economic development is limited. The ad hoc and spatially unplanned investment in these areas makes no contribution to establishing economic nodes and corridors. A limited base thus exists for the establishment and growth of economic activities in the rural areas. Without a clear spatial framework and related investment the opportunities for future economic development in the outlying areas will be limited. |
| The approach (solution): | The spatial framework for the rural areas of eThekwini must be strengthened. Every effort must then be made to build on this framework, through appropriate infrastructure provision, creating opportunities for economic development at key nodes and along key corridors (primarily the tourism corridors). |

**Programmes:**
- Establishing Towns (Activity Nodes)
- Establishing Agricultural Service Centres
- Developing Tourism nodes / Corridors
| Motivation (Current Situation): | The major reliance of people from the so-called rural areas on accessing economic services and opportunities in 'urban eThekwini' has resulted in limited investment in economic development infrastructure in these areas. The combined lack of investment in public infrastructure and private sector facilities creates a situation where space for economic development activities is generally unavailable. The result is that facilities that will in urban areas serve as a basis for establishing economic activities is not available or difficult to access, for example telecommunications (incl. broad band), pavements (to trade from), water and electricity for production processes, adequate roads for transport of goods, transport facilities (as an opportunity for informal traders), manufacturing facilities with access to water and electricity, established formal and informal markets, retailers (presenting opportunities and access to inputs), etc. |
| Problem statement: | Various studies confirmed that access to space and infrastructure is usually the most significant need expressed by entrepreneurs from previously disadvantaged areas. The requirements for space range from space for trading to space for production or a space where a service can be offered. |
| The approach (solution): | Other than encouraging the private sector to provide space for economic activity it is suggested that the public sector (i.e. eThekwini with public sector funding) invest in providing a range of basic trading and production spaces in the, to be established, towns. The most appropriate space requirements in each locality must be established. |
| Programmes: | The proposed programmes / interventions are:  
  - Trading facilities (All towns)  
  - Production facilities (All towns) |

**ETHEKWINI RURAL STRATEGY**
c) **Objective 3: Facilitate economic activity**

### STRATEGY 3.1: GROW INTENSIVE AGRICULTURE

**Motivation (Current Situation):**

The 2005 Rural Agricultural Policy suggested three broad categories of agricultural production in rural eThekwini. These are still relevant and include:
- livestock,
- niche market products, and
- perishables for local and export markets.

Agricultural land and thus agricultural production has, however, been under threat from other land development pressures, viz. residential, commercial and industrial. Generally, productive agricultural land is not located in the Ingonyama Trust land areas, mainly due to topography. Production is thus limited to commercial farming areas mainly taken up by sugar cane production.

Communities in so-called rural areas also find it difficult to access agricultural inputs. Marketing produce also presents challenges.

**Problem statement:**

Although eThekwini has an existing commercial farming sector this sector is under pressure, primarily from competing land uses. Agricultural production on Ingonyama Trust land is also limited and despite efforts is not growing. This lack of growth can in all likelihood be attributed to the gradual densification of the area, the marginal production capacity of land, and challenges in accessing inputs and markets.

However, local and international markets present a range of opportunities for eThekwini producers. The location in proximity to the port, and the now established Dube Tradeport Agrizone suggests that fruit and vegetable production must have a strong future within and around the Unicity. Currently, with the exception of the Agrizone controlled environment production, no significant production of fruit and vegetables occurs in the area.

**The approach (solution):**

It is suggested that there should on the one hand be a focus on organic production and on the other a focus on more intensive forms of fruit and vegetable production, e.g. tunnel farming (as proposed in phase 2 of the Agrizone). Intensive forms of production will have to be promoted considering the land costs within eThekwini and the competition for land from other sectors.

An approach to accommodate livestock farming within the every densifying outlying areas of eThekwini will have to be established in consultation with stakeholders.

**Programmes:**

The proposed programmes / interventions are:
- Production support (Vegetables, Livestock, Indigenous Plants etc.)
- Marketing support
- Group marketing

### STRATEGY 3.2: BUILD COMMUNITY TOURISM
Motivation (Current Situation):
The various tourism products / assets of rural eThekwini also reflect the opportunities for the future development of the tourism sector in rural eThekwini.

The products include:
- Events: e.g. Duzi and Comrades
- Valley of the 1000 Hills
- Nature areas and dams (e.g. Shongweni, Inanda, Hazelmere, Nagle)
- Heritage (e.g. Inanda Heritage Route)
- Coast
- Extreme sports
- Durban Green Corridor (uMngeni River Valley)

At present the benefits accruing to rural communities is limited, despite substantial effort in this regard.

Problem statement:
The basic challenge is to continue to facilitate the growth of the ‘alternative’ tourism sector in eThekwini (i.e. non-coastal) and to ensure that strategies and programmes include a strong focus on building community tourism products and services. Despite good intentions to develop the ‘alternative’ tourism sector over the past two decades the real successes has been limited. Building this sector is essential for ensuring eThekwini’s continued building of itself as a tourist destination of choice.

The approach (solution):
Building on the strategy to support the development of key nodes and corridors the focus must be on the development of a number of key sites in ‘rural eThekwini’ and linking this with appropriate efforts to establish tourism entrepreneurs linked to the particular sites. In the short to medium term it will be best for these sites to be linked to already established attractions and / or events.

Programmes:
The proposed programmes / interventions are:
- Develop key sites (anchors)
- Establish tourism entrepreneurs
### STRATEGY 3.3: PROMOTE INFORMAL RETAIL

#### Motivation (Current Situation):
Although informal retail and service activities are located in more than 50% of the current rural service and rural investment nodes the activities are limited and not having a major impact on the economy. The activities currently located in the various nodes include traders (fruit, snacks etc.), food sellers, mechanics, salons, barbers, public phones etc.

Facilities for informal retail and service related activities are limited and lack the scale necessary to attract customers. This situation can be attributed to the absence of formal retail facilities, major government facilities. There are also not systems in place supporting informal trading and / or the establishment of periodic markets.

#### Problem statement:
No settlement level trading or production system exists. A key feature of a settlement level trading and production system is a ‘ring of markets’ – linking periodic markets in a number of settlements to form an effectively functioning system. The concept is not new, and is referred to in South African planning literature at least as far back as 1985 and in various national strategic planning policies since (Dewar 1985 as in Kruger 2010). This includes the 1995 Rural Development Strategy, the 1997 South African Rural Development Framework, and the 2006 National Framework for Local Economic Development. Despite this policy support, examples of successful markets, let alone market systems, in KwaZulu-Natal are few and far between.

#### The approach (solution):
The establishment of a settlement level trading and production system is viewed as one approach aimed at supporting the establishment of a vibrant informal sector in rural eThekwini. The provision of appropriately located infrastructure and facilities (see strategies relating to this) will further contribute to strengthening the growth of the informal economy. The strength of the informal economy is viewed as a basic building block for the establishment of a vibrant and growing economy in the so-called rural areas of eThekwini.

#### Programmes:
The proposed programmes / interventions are:
- Participatory Economic Action Planning (PEAP)
- Business Training (Peer Support, Broad-based, Focussed, Incubation)
### STRATEGY 3.4: ATTRACT FORMAL RETAIL

#### Motivation (Current Situation):
Of the 16 nodes assessed in the Status Quo analysis for this initiative only Folweni is home to an established major retailer. Formal retail activities in other nodes are limited. Based on observations from across KwaZulu-Natal in nodes such as Dududu, Ndwedwe, Mphumulo and others it was confirmed that the development of informal trading sector (and then the informal economy) is largely dependent on the presence of a strong formal retail sector.

#### Problem statement:
Based on previous research conducted it is suggested that substantial opportunities exists in the development of a rural retail / trading system focused on decentralised nodes.

The development of retail centres in decentralised rural nodes present specific opportunities. For one, it will allow for, and possibly even require, the parallel development of decentralised rural government services. If appropriately managed, such an approach could also include local ownership of retail facilities, create more localised job opportunities, and establish distribution systems that will allow the smaller general dealers, spaza shops, and tuck shops to fulfil a more prominent role in the trading environment.

The establishment of such trading centres, however, depends on a number of elements, including provincial and local government support, access to infrastructure, security of tenure, and, importantly, local leadership and community support. Changing established rural transport routes to service particular nodes may also present a challenge.

#### The approach
Through the establishment of formal towns in the so-

<table>
<thead>
<tr>
<th>(solution):</th>
<th>called rural areas new opportunities for establishing formal retail facilities will be opened up. These opportunities must be marketed with developers / retailers. Importantly, any development rights allocated for this purpose in rural areas should require developers / retailers to provide:</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Opportunities for local entrepreneurs;</td>
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<tr>
<td>- Opportunities for accommodating the informal sector;</td>
<td></td>
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<tr>
<td>- Systems to support small traders and informal businesses;</td>
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<tr>
<td>- Systems to procure products locally.</td>
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</tr>
</tbody>
</table>

#### Programmes:
The proposed programmes / interventions are:

- Establishing Towns (see previous strategies)
- Developing guidelines for investment in previously disadvantaged areas (see requirements above)
- Investment Attraction
### STRATEGY 3.5: FACILITATE INCREASED PRODUCTION / MANUFACTURING

Limited information is available on production activities in the so-called rural areas of eThekwini. It has, however, been established through research in other previously disadvantaged areas that informal production activities, in the form of home-based industries, generally do exist. The home-based industries include crafting, welding, upholsterers, seamstresses, catering, repairs etc.

Links between the so-called rural areas and major industries in related areas (e.g. Hammersdale, Canelands, Tongaat etc.) also appears to be limited with no examples of local sub-contracting identified.

**Problem statement:**

The basis for building a vibrant local economy will be to increase rural production. There are currently only limited and ad hoc efforts to support the growth of rural production, generally through support for craft industries.

**The approach (solution):**

A programme to support production activities in previously disadvantaged areas must be established. Such a programme will not only consider conventional business support, but will also provide mentorship, access to facilities, incubation opportunities.

**Programmes:**

- Participatory Economic Action Planning (PEAP)
- Business Training (Peer Support, Broad-based, Focussed, Incubation)
5.6.5. TRANSPORTATION

5.6.5.1. Strategic issues
The strategic transportation issues are based on the status quo assessment. A summary of some of the key issues and findings are as follows:

- The study areas is characterised by high unemployment rate, a high student/scholar population and a low car ownership level.
- Majority of the trips are made to destinations outside the study area.
- At least two-thirds of the trips are made using public transport.
- There is a high amount of walk trips, however pedestrian infrastructure is limited to a few roads within the study area.
- The train stations within the study area have a low demand mainly as a result of limited accessibility at some of the stations and the large journey times along these rail corridors.
- Study area is serviced by high amount of unscheduled mini bus taxi services.
- Majority of the road based public transport stops and interchanges are informal with no basic facilities.
- Majority of the roads within the study area consist of lower order roads.
- Some of the high order roads have a number of informal access to private development stands.

Issues:

- Large Travel Distances to access employment opportunities and basic services
- Limited Pedestrian/Non-Motorised Transport (NMT) Infrastructure

5.6.5.2. Large travel distance
Residents in the area currently travel large distances to access job opportunities, tertiary education and basic services

Vision: To minimise the travel distance of residents to access job opportunities and basic services

Strategy:

In an ideal scenario, commuters living within the study area would relocate to an area closer to their place of employment to save on travel cost. However, for whatever reason this has not occurred. Some speculative reasons could include higher costs of accommodation, security, current living arrangements with extended family etc. The option of relocating these work opportunities closer to the study area could be considered provided it remains within the urban development line (UDL).

Basic social amenities such as hospitals, clinic, schools, tertiary education etc should be developed within existing nodes in the study area if they are not there already.
5.6.5.3. Limited pedestrian/Non-Motorised Transport (NMT) infrastructure

The status quo assessment has shown that there is a high amount of pedestrian activity within the entire study area but the pedestrian infrastructure is limited in most areas.

Vision: The provision of pedestrian sidewalks along all surfaced roads within the study area and provision of paved footpaths along busy pedestrian routes.

Strategy:

The strategy to achieve this vision is as follows:

Using the GIS NMT infrastructure information develop a sidewalk roll-out plan within the study area. The roll-out plan should initially focus on the following:

- Nodes identified as part of this study
- Existing residential areas with higher densities such as Umgababa, Folweni, Shongweni etc.
- Integrated with the roll out of public transport facilities (stops, stations, interchanges)
- Integrated with department of public works projects that are not located within identified nodes. These would include schools, clinics, hospitals etc. The intention would be for the municipality, Department of public works and any other department to share the cost of this roll out within a certain radius from the development.

The infrastructure can then gradually be rolled out into less dense areas outside the above.
5.6.5.4. Low rail modal split

The existing rail modal split is unknown however based on the 2008 rail census, the passenger volumes are relatively low.

**Vision:** To increase the rail modal split to a level that would be considered acceptable

**Strategy:**

In order to achieve an increase in rail modal split the relative attractiveness of rail versus another mode needs to be improved. Factors that influence attractiveness includes journey time, cost, comfort, reliability and security to name a few.

Therefore, the strategy to increase the rail modal split would be as follows:

- To improve the rail geometry along the Cato Ridge line in particular to increase travel speed.
- Decrease journey time through use of latest technology.
- Along the south coast line, for example, the PRASAKZN Rail Strategy considered the introduction of a skip stop service to improve journey times.
- Improve service reliability through proper maintenance of train sets and increase in security to prevent cable theft.
- Integration of services with road based feeder services.
- Improve accessibility of the stations through provision of NMT facilities and PT interchange.
- Improved security at stations and on-board the trains.
- To encourage mixed-used nodal development around selected stations.
- Continued engagement between PRASA and the Municipality.

5.6.5.5. Limited road based public transport facilities

Whilst there is a high amount of public transport services within the study area, the facilities to support it is limited with a number of them being informal

**Vision:** The provision of public transport facilities for road based services that will ultimately align with eThekwini Municipality's Integrated Public Transport Network (IRPTN)

**Strategy:**

The following strategy could be followed in rolling out the infrastructure:

- Using the existing public transport operator and the eThekwini Transport Authority (ETA) forums, engage with the associations regarding the roll out of stops and ranks.
- The 2013 CPTR should be used in conjunction with the above mentioned discussion in identifying the final location of these facilities
- It is important that the infrastructure being provided should integrate with the ultimate IRPTN Plan
- A good starting point for the roll out would be to focus on:
  - The priority nodes that will be identified as part of this project
  - Higher density residential precincts within the study area
  - Train station
- The PT infrastructure should be integrated with the roll out of the Pedestrian and NMT Facilities
5.6.5.6. High amount of scholars using bakkies to school

The transportation of school going children using bakkies is a serious safety issue. Surveys at two schools within the study area showed that the percentage of children arriving by bakkies in the morning is approximately 30%.

Vision: Total Eradication of un-proclaimed and un-roadworthy modes of transport

Strategy:

The strategy to achieve this vision is as follows:

- A review of the Policy on Learner Transport for Public Schools, KZN Department of Education (KZN DOE), March 2013 indicates that the KZN DOE and the KZN DOT will roll out and monitor learner transport for students staying further than 3 km from school. Therefore, the strategy would be for the ETA to engage with these department to understand the progress of this roll out within eThekwini.

- In conjunction with the above policy and departments, the ETA should develop a learner transport policy that also covers learners travelling less than 3 km on un-proclaimed and un-roadworthy vehicles. This policy focus on areas not completely served by the IRPTN.
5.6.5.7. Informal accesses along high order roads

There is a high amount of informal access points along higher order roads within the study area.

**Vision:** Reduction in the number of informal access points along high order roads

**Strategy:**

The following strategy would be followed in order to reduce the number of informal access along high order roads:

- Creation of lower order road network to facilitate access to development stands in affected areas.
- Provision of kerb sidewalks along higher order roads
- The identification and creation of Priority Nodes and Precinct Plans which will allow for the development of a road hierarchy system
- In areas where nodes have not been proposed or there is no immediate plan for lower order road network, developments should be restricted to a left in, left out arrangement.
5.6.6. SOCIAL ISSUES

Social issues include infrastructure development such as building roads, schools, bridges, clinics, irrigation schemes, libraries, community halls, water supply and electricity. Involvement or establishment and/or revitalisation of agencies related to rural development is key to success of rural development.

Within the rural areas of EThekwini, the Situational Analysis Phase confirmed the lack of provision of suitable social/public (i.e. clinics, schools, social welfare, libraries, etc.) and recreational facilities (i.e. parks, botanical gardens, museums, etc.). The first Phase of this exercise revealed the importance to have policies on the usage of public and recreational facilities within a municipal area. Most rural areas within EThekwini do not have or have limited access to social and recreational facilities. The first phase of this exercise confirmed a need for both public and recreational facilities in the rural parts of EThekwini.

5.6.6.1. Opportunities / Challenges

- Public facilities such as libraries and sporting complexes are normally built in formalized settlements.
- Some public facilities for the rural areas can be funded by the business community.
- The low population densities pose a challenge in providing such facilities. As such the low population densities usually do not meet the CSIR Guidelines on public facilities.

5.6.6.2. Strategic Objectives

- Provide the full suite of services to rural residents of EThekwini through the provision of value adding public and recreational facilities.
- Attract private sector funding to assist in the provision of public and recreational facilities for the rural settlements in EThekwini.
- Ensure grassroots development of art and sport in the rural settlements of EThekwini

5.6.6.3. Proposed Programmes

- Perform a detailed inventory of public and recreational facilities (including analysing the status / condition) in all the rural wards and assess the need / market for each facility.
- Develop a plan that will guide the process of upgrading / renovating public and recreational facilities.
- Develop concept documents for proposed public and recreational facilities and engage the local business community on areas of potential partnerships.
- Create a separate Special Purpose Vehicle to ring-fence all funding from the private sector and other government agencies that are specifically made available for public and recreational facilities.

5.6.6.4. Roads and Transport

The condition of roads affects transit time for goods. Access to roads is closely linked to levels of investment in an area. Access to public transport also contributes to the social and economic well-being of residents in a particular area. Access to roads and transportation determines access to shopping, health facilities, schools and all other essential amenities. Generally, public transport availability determines mobility of communities.

Taxis normally follow communities with improved access to roads. Much larger settlement areas with higher traffic volumes ought to be supplied with suitable roads. There are currently a number of formal taxi routes in the EThekwini. Formalised taxi stop ranks/bays have been introduced on the main access routes, to the apparent satisfaction of the communities.
Opportunities / Challenges

- The maintenance of local and district roads as well as privately owned farm roads.
- Low commuter numbers in some rural areas to attract long term taxi operators.
- Inaccessibility of some rural areas with gravel roads during the rainy seasons.
- Investment in expensive road infrastructure and the provision of public transport and suitable roads can only take place after the settlements have been formalized.

Proposed Programmes

- Prepare a detailed plan of all gravel roads in the rural areas that need to be tarred. The plan should also indicate bridges that need to be built on the roads.
- Ensure timely re-graveling and road maintenance for communities with gravel roads.
- Provide street lighting along some major roads.
- Build taxi shelters along some major roads.
- Increase road safety in some areas through pedestrian crossings, sidewalks, etc.

Strategic objectives

- Prioritize the provision of roads and a public transport system in all settlements.
- Provide suitable road access and public transport to improve safety in rural settlements.

5.6.6.5. Education Facilities

The Situational Analysis Phase revealed that most rural settlements in the Southern and Western regions require additional primary education facilities. The current situation implies that it is expensive to educate a child in ETHekwini since the majority of pupils have to be transported to schools. This situation may lead to many children missing lessons and not attending classes. It must be noted that these rural areas face unique challenges in offering the full range of programs to small numbers of students as well as attracting qualified teachers and transporting pupils to the nearest school.

These unique challenges ought to be addressed. Consideration should be given to encouraging School Governing Bodies to share schools and resources whenever possible. In areas where it is not feasible to provide a school as a result of low numbers of pupils (i.e. where building a well-resourced school cannot be justified), the concept of school hubs needs to be investigated and developed. These schools are supposed to be located strategically where pupils from the surrounding communities are enrolled, educated and boarded in the facility. This will assist in attracting
skilled teachers and ensuring that children are safe and receive the best possible education.

The school hub concept provides an opportunity to resource schools for learning, sport or art development, and leadership.

**Strategic Objectives**

- Provide the best possible education facilities and learning aids that will reduce the cost of education while improving learning opportunities in EThekwini.
- Increase access to primary education and library facilities in all rural areas of EThekwini.
- Encourage good teachers to work in and develop their careers in the rural areas of EThekwini.
- Make it possible to attract best possible teachers to develop their career in the rural wards of EThekwini.

**Proposed Programmes**

- Establish an Advisory Committee to oversee a rural school development programme to provide on-going advice on ways of improving education in rural schools.
- Investigate the feasibility of developing schools in each rural village/sigodi as opposed to building central, well-resourced schools with boarding facilities.
- Provide incentives for rural school jurisdictions to share recreational facilities, teachers, transportation, libraries, and laboratories.
- In partnership with both the provincial and national departments of Education, secure school capital development fund for the construction and renovation of schools to ensure that the schools development programmes addresses the needs of rural areas in EThekwini.

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**5.6.6.6. Improve Access to Health Facilities**

Access to good quality health care services by rural communities is a high priority of the South African Government. The ability to provide this service in the rural areas of EThekwini remains a major challenge. Considerable work is being done at national level to overhaul the health system in South Africa through the creation of the National Health Insurance. The NHI will improve access to quality health services for all citizens.

Primary health care approaches are feasible in rural areas where attracting doctors, physicians, nurses, pharmacists, technicians, and other essential health care service providers remains a big challenge for the government. New technologies are available where certain basic treatments that require a specialist are done through telephone link.

As plans for the overhaul of the national health system continue (i.e. though the NHI), special attention needs to be paid to the unique circumstances and opportunities in the rural areas of EThekwini. The plans should include making the maximum use of the new and innovative approaches to delivering care, making better use of existing hospital facilities in towns/townships and developing mobile primary health care systems.

**Strategic Objectives**

- Ensure that people in rural areas have access to quality primary health care services closer to home (meet minimum CSIR standards).
- Provide for emergency services to ensure that EThekwini treats special cases in the rural areas.
Proposed Programmes

- In partnership with the provincial government, identify key areas that have limited access to primary healthcare and develop feasible facilities to ensure that community members have easy access to healthcare services.

- Through the provincial health department, promote the use of technology to access specialised health services through telephone health link concepts.

- Ensure that all rural areas of EThekwini are serviced in accordance with the provisions of the National Health Act to ensure that residents live in a healthy environment where the risk of health hazards is low.

- Link each rural area/isigodi to a functional water reticulation solid waste collection/management system.

5.6.6.7. Safety and Security

EThekwini has not been spared from the national challenge of crime. Generally areas with ballooning unplanned settlements along main transport routes (i.e. such as Folweni) are perceived to have the highest crime levels. Having an effective policing system alone cannot alleviate crime in South Africa. Combating crime requires that the community and SAPS work together.

Opportunities / Challenges

- The first phase of this exercise revealed that the South African Police Services is generally slow in responding to crime in most rural parts of EThekwini.

- Owing to a lax legal system where criminals are released on bail or escape from jail, community members who witness crime incidents are afraid to report such incidents or to stand as witnesses for fear of being victimised by criminals.

Strategic Objectives

- To significantly reduce crime in EThekwini
- Use the low rates of crime in the rural areas to attract critical skills and private sector investments into EThekwini.

Proposed Programmes

- Increase the number of police stations / satellite stations in the rural settlements.

- Increase visibility of policing in the rural areas

- Continuously engage the SAPS on their turnaround on crime.

- Empower or support the existence of Community Policing Forums.

5.6.6.8. Scattered rural settlements

In deep rural areas where most homesteads are scattered, land resettlement schemes should be considered and developed. The resettlement scheme areas should ensure that infrastructure and services are provided to attract them to move into the newly planned areas. Some form of planning should be introduced and this mechanism could only be realised if the traditional authorities or authorities responsible for land management and administration within EThekwini are involved throughout all stages.

Caution should be taken when considering the resettlement schemes as they may have both advantages and disadvantages where the young generation may see a better future but it may pose adaptation problems for the older people, whose skills and livelihood are based on gathering of
jungle products and shifting cultivation, which the new area may not provide.

Those near urban centres tend to be more equipped with facilities and exposed to modern living. In remote locations where accessibility posed a problem, livelihoods and life remain traditional, living by subsistence farming, hunting and gathering of jungle products. The challenge in the resettlement schemes is when a community chose to live in the traditional way and refuse to stay in the regrouping scheme provided, and do not send their children to school.

Where rural communities are located in accessible areas, the main programmes should include in-situ rural development projects such as improvement of the physical conditions of existing settlements and provision of infrastructure. In rural areas, socio-cultural factors such as traditional beliefs and customs, institutions, values and needs would have to be addressed not only to minimise conflict in development objectives but also to ensure that the programmes to be introduced are received and widely participated in by the communities.

The main component of a resettlement scheme is to resettle scattered villages to a centralised village with modern basic facilities such as schools, clinics, piped water, electricity, recreation etc.

Rural strategies need to focus on identifying niches and the comparative advantage of each rural locality. The development of rural products must closely integrate with the safeguarding and enhancing environmental assets. Marketing of quality products must portray both the quality of the products and also the quality of the environment and people where the products come from.

5.6.6.9. Development and Participation

For sustainable management and development of rural areas, it is important that more people be encouraged to participate in decision making at the local and community levels. Active participation of local people in planning and implementation of rural development programmes will ensure better prospects for self-reliance and sustainable development. This calls for the local development model which is essentially area-based. It implies a bottom-up approach, mobilising local people and organisations in attempts to address problems of rural variation and diversity which could not be tackled at a national or regional level.
6. SECTION 6: SPATIAL DEVELOPMENT FRAMEWORK

6.1. PURPOSE

Whilst the study focuses on the rural areas of eThekwini, the densities classification in the foregoing section demonstrated that even the broader area previously understood to be rural has itself different settlement characteristics and different intensities in development and therefore the framework remains a broad guidance to address all this uniqueness.

The study area is characterized by difficult (often steep) topography and with constrained accessibility in general. These factors should be considered carefully in the provision of services and infrastructure. The framework provides basis of guidance for the provision of essential services and facilities within the study area.

It is intended that the Rural Development framework will guide the future development of the areas that fall within it. In overall terms therefore the proposed spatial framework begins to show:

- Correlation of different land uses
- Areas of growth or decline,
- Areas of conservation
- Relationships between the rural settlement areas within themselves and also with wider EThekwini SDF,
- Areas where development must be encouraged or discouraged

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

- Development corridors
- Development nodes

The Rural Spatial Development Framework will influence and also be influenced by the broader eThekwini SDF. In this regard an effort was made to rationalise and align the terminology and hierarchy between the two products.

6.2. DEVELOPMENT CORRIDORS EXPLAINED CONCEPTUALLY

Whilst development corridors are strongly influenced by access and key roads, they can be defined as routes accommodating higher intensity activities that should be managed in a particular way.14

EThekwini SDF allows for four levels of development corridors:

- Primary Roads
- Secondary Roads
- Tertiary Roads
- Local Roads

In defining the above levels, however, it is equally critical to consider new policy direction in road planning:

**Mobility and access roads**

Mobility is the ease with which traffic can move at relatively high speeds with the minimum of interruptions or delay. Access provides entry to the road network through driveways, intersections or interchanges.
Any access, intersection, or associated activity, even if properly designed, will affect the mobility requirement because the act of turning into or out of a driveway or intersection is a low speed maneuver and crossing a road requires interruption or breaks in traffic flow. If not managed, unregulated access results in unsafe travel conditions for both the users of the access and passing traffic.

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

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

- No stops may be provided on Class 1 roads;
- Stops on Class 2 roads are restricted to lay-byes downstream of intersections;
- Stops on Class 3 roads are restricted to lay-byes, preferably downstream, and should be in lay-byes;
- There is no restriction on public transport stops on Class 4 and 5 streets and lay-byes are not required.
- Public transport stops should be located within an acceptable walking distance from generators, attractors and modal transfer facilities. Walking distances to the stops should preferably be within 400 m but not more than 800 m. Public transport stops must be served by an adequate network of footways.
- On-street public transport stops should be located as near as possible to intersections and major accesses. At traffic signal controlled intersections, the stops can be located either on the approach or on the far side of the intersection, but preference should be given to the far side. When provided on approaches, the stops should be located sufficiently far back to prevent the intersection or access being obstructed by the stop.
- In the absence of a pedestrian footpath, paving should be placed at public transport stops to allow a clean and dry place for pedestrians to stand and place luggage. Shelters are also recommended at all public transport stops.
- Activity or access streets on the other hand cater specifically for access as well as associated activities. The provision of access for both vehicles and pedestrians from the street to adjacent land and the activities resulting becomes the predominant function. As such care must be taken to keep speeds low for the safety of both pedestrians and turning traffic. Activity streets are therefore “liveable” places where vehicle and pedestrian traffic are mixed (Guidelines for Human Settlement [DOH 2000] uses the term “mixed pedestrian and vehicle” streets).

In identifying the corridors what the spatial framework immediately raises is:

- The type of development that should be encouraged in these areas
- What is the developmental objective in promoting a particular development corridor
- What is it that the municipality should do to encourage growth and protection of this corridor in order that the objectives clarified above are met.
- Can existing community members within a particular development corridor afford challenges posed by measures to protect these particular areas
Figure 32: Conceptual Transport Framework Plan
6.3. NMT

The study area is characterized by a high amount of pedestrian activity and limited amount of cycling. Data from the 2008 Household Travel Study indicates that approximately 50% of the trips are walk trips. A large amount of the walk trips are made by scholars. Inspection of NMT facilities within the study area indicates that there is limited facilities. Hence, the need for NMT infrastructure is high.

The eThekwini Municipality’s NMT Plan, ILISO Consulting, March 2013 identified 7 rural nodes, based on population density, where NMT infrastructure should be rolled out first. The nodes are summarized in Table below.

Table 14: Rural Nodal Ranks (Source: eThekwini Municipality’s NMT Plan, ILISO Consulting, March 2013)

<table>
<thead>
<tr>
<th>FUNCTIONAL AREA</th>
<th>POPULATION</th>
<th>AREA (ha)</th>
<th>POP. DENSITY</th>
<th>RANK</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phola-Amitikwe</td>
<td>77,501</td>
<td>1,044</td>
<td>30.5</td>
<td>1</td>
</tr>
<tr>
<td>Mpumalanga</td>
<td>60,489</td>
<td>2,480</td>
<td>25.2</td>
<td>2</td>
</tr>
<tr>
<td>Umgababa</td>
<td>50,738</td>
<td>666</td>
<td>21.5</td>
<td>3</td>
</tr>
<tr>
<td>Umzinyathi</td>
<td>15,233</td>
<td>2,203</td>
<td>13.8</td>
<td>4</td>
</tr>
<tr>
<td>Kwa Ximba</td>
<td>11,040</td>
<td>1,835</td>
<td>6.3</td>
<td>5</td>
</tr>
<tr>
<td>Umbumbulu</td>
<td>7,270</td>
<td>2,852</td>
<td>2.1</td>
<td>6</td>
</tr>
<tr>
<td>Butfelasisaal</td>
<td>2,159</td>
<td>1,802</td>
<td>1.1</td>
<td>7</td>
</tr>
</tbody>
</table>

Of these nodes, NMT networks were developed for the top three areas viz. Phola-Amintikwe, Mpumalanga and Umgababa. Of these three only Mpumalanga does not fall within the study boundary of this project.

The network plan for Phola-Amintikwe and Umgababa are shown in the figures below.
Figure 33: Phola – Amatikwe NMT Plan (Source: eThekwini Municipality’s NMT Plan, ILISO Consulting, March 2013)
Figure 34: Umgababa NMT Plan (Source: eThekwini Municipality’s NMT Plan, ILISO Consulting, March 2013)
In light of the above, the NMT plan is as follows:

**6.3.1. Infrastructure**
- The planning and implementation of NMT infrastructure as part of a Local Area Plan (LAP), Functional Area Plan (FAP) or Precinct Plan (PP) for identified nodes.
- Linking neighbouring nodes (within a 1km to 2km distance) with NMT infrastructure.
- The planning and implementation of NMT infrastructure within higher density residential areas that are located outside identified nodes and, where possible, linking these areas with neighbouring nodes.
- The planning and implementation of NMT infrastructure within new housing developments that are located outside identified nodes and where possible linking these areas with neighbouring nodes.
- The planning and implementation of NMT infrastructure as part of new public transport facilities that are located outside identified nodes.
- The planning and implementation of NMT infrastructure as part of new social projects such as schools, clinics, hospitals etc. that are located outside identified nodes.
- The planning and implementation of NMT infrastructure as part of road accessibility projects within the study area.
- Sidewalks are to be a minimum of 1.5m wide and desirably 3.0m wide.

**6.3.2. Cycling**
- The rollout of the Shova Kalula programme within the rural areas of eThekwini.
- Identify funding sources for new bicycles for scholars.
- Undertake cycle training at school for scholars through corporate sponsorships (Tsogo Sun already runs a program).
- Employing an NMT champion at the ETA.

**6.3.3. Public Transport - Road**
Data from the 2008 Household Travel Study indicates that approximately 40% of the trips made from the study area is public transport trips.

The eThekwini Municipality’s IRPTN shows that the study area will be served by feeder routes and complimentary routes, hence the public transport plan mainly considers infrastructure. However, one recommendation on the routes and services is the potential for rerouting of complimentary and feeder services to pass selected rail stations and act as a feeder to the rail.

The public transport infrastructure objective is to ensure that the facilities being provided will ultimately align with the future IRPTN services.

The public transport plan considers the roll out of infrastructure in a similar manner as NMT infrastructure and should be planned and implemented as part of Local Area Plan (LAP), Functional Area Plan (FAP) or Precinct Plan (PP) for nodes, higher density residential areas, new housing developments, social projects and new road accessibility projects.

**6.3.4. Rail**
There is a total of seven train stations within the study area, five in the western area along the Cato Ridge line and two in the southern area along the south coast line. The 2008 rail census indicates that the current volumes are relatively low, largely due to slow journey times, limited accessibility and safety concerns.
Considering the high public transport modal split from the study area there is a latent rail demand that should be considered.

Planning

- Creation of rural investment/mixed use nodes at Cliffdale Station, Shongweni Station, Dassenhoek and Umgababa Station. This node should include high density housing and commercial/mixed use land uses.
- Undertake an LAP, FAP, PP and LUMS for these nodes

Infrastructure

- To improve the rail geometry along the Cato Ridge line in particular to increase travel speed.
- Decrease journey time through use of latest technology
- Improve accessibility of the stations through provision of NMT facilities and PT interchange

Services/Institutional

- Integration of services with road based feeder services. This may require a review of the IRPTN
- Improve service reliability through proper maintenance of train sets and increase in security to prevent cable theft
- Introduction of skip stop service or short turn around services to improve journey times
- Improved security at stations and on-board the trains
- Continued engagement between PRASA and the Municipality

6.3.5. Access Management

Access management within the study area is a major concern as majority of the area sits outside the scheme. Hence, a number of property stands take direct access of higher order roads.

The plan therefore is to introduce a scheme at all rural nodes, higher density residential areas and new housing developments (preceded by LAP, FAP, PP etc). This will allow for the creation of a formal road network with minor roads (lower order roads, Class 4 and 5) which can be used for access to developments.

6.4. SCHOLAR TRANSPORT

Surveys at two schools within the study area has shown that 30% to 40% of scholars arrive using bakkies. There is a definite concern on the safety of this mode and hence this issue needs to be addressed.

In this regard, it is recommended that:

- the National Scholar Transport Policy, 2009, should be reviewed an updated, if it hasn’t already, to take into account IRPTNs and recent developments
- a project champion should be appointed at the ETA, if one isn’t in place already, who will be responsible for liaison with National Department of Transport (NDOT) and who will implement the policy framework
6.5. **CORRIDORS**

The corridor plan was developed on inspection of the spatial location of rural nodes, high density residential areas, the road hierarchy system and the transport framework plan.

The objective of the corridor is as follows:

- To identify a route that will link the entire rural area of eThekwini in the north-south direction
- To link areas and nodes within the rural area
- To ensure ease of access to external areas
- To ensure that the integrity and function of mobility routes (Class 2 and 3 roads) are maintained

A primary corridor and a secondary corridor system was created. The primary corridor consists of mainly existing and future Class 2 roads, whilst the secondary corridor consists of Class 3 roads. The primary corridor function is to accommodate more long distance travel whilst the secondary corridor is to ensure linkage between residential areas with neighbouring activity nodes.

The north-south link is described as follows:

- From the north, the corridor starts at R102 in Tongaat and travels south
- At Verulam the corridor follows the M27 westwards and joins the M25 towards Amatikwe
- The route then follows the P138 and heads south towards Ntuzuma
- At the opposite side of the Umgeni River near Molweni, there is a proposed bridge linking the P138 with Inanda Road (M35).
- The route then follows Inanda Rd (M35), through Molweni towards Hillcrest
- Along Inanda Rd (M35) at the Old Rail line, there is a proposed road linking the Inanda Rd and Kassier Rd along the rail reserve.
- The route then follows Kassier Rd south towards MR559.
- The route then follows MR559 eastwards to the M1
- The route then heads south along M1 to the proposed MR579.
- The route then follows MR579 south to the R603
- On the R603, the route heads east toward the P197 and then heads south along it towards uMgababa and uMnini.

In addition, Wanda Cele Rd, north of the R603 will provide additional north-south linkage, running somewhat parallel to MR579.

Three east-west links have been identified viz. MR614 in the north, the R103 in the middle and the R603 in the south. These routes will provide access to the hinterland.
6.6. RURAL SERVICE CENTRES

Over the past three decades there has, however, been considerable focus, in planning and development literature, on the establishment of rural service centres or rural service systems. Markets would initially have formed an integral part of such service centres. Robinson (2005) notes that due to the failure of other approaches to rural development Rondinelli and Ruddle in 1976 “argued for the identification of rural service centres ‘as basic nodes to articulate the rural economy and link it to the national hierarchy of settlements’ and the identification of the need for urban function. For the next two decades policy issues centred on ‘the functions and hierarchical distribution of market centres for hinterland development and rural regional planning”’ (Pradhan and Routray 1992 as in Robinson 2005). Various attempts to implement the rural service centre policies were made across sub-Saharan Africa. Based on the experience Robinson (2005) notes that in Zimbabwe and Malawi the “centres were conceived of as small, low-key settlements, established at relatively low cost to provide essential services to their own (often small) population” and then also to surrounding rural areas.

Robinson, in his 2005 assessment of rural service delivery, describes the evolution of service centres in South Africa. The concept was first introduced in a 1979 planning study in Transkei and formed part of the spatial development strategy for the north-east region of Transkei. In the mid- and late 1980s it was a central concept in planning for the Maputuland Region of KwaZulu-Natal. This was followed by a series of post-1994 attempts, most notably rural service centres forming the spatial element of KwaZulu-Natal’s integrated rural development strategy. This resulted in three further “attempts to re-conceptualise the strategy” and plan for implementation. Firstly, a pilot study was commissioned for the roll-out of rural service centres in the Province. Secondly, as a result of a greater focus on coordination of service delivery, the concept was reformulated in 1999 as rural service systems and applied to the Mbazwana area. Thirdly, after a delay in the implementation due to local government transformation, a further study was commissioned in 2003 to draft policy “for the establishment, management and implementation of rural service systems in the province” (Robinson 2005).

For each of the six case studies considered by Robinson (2005) an overview of the development context, the development strategy, the concept and the implementation is provided. The approach proposed for service centre development in all the pre-1994 case studies appears to focus on a combination of services and markets. Robinson notes that with the 1997/98 rural development strategy for KwaZulu-Natal the “earlier concept of rural service centres was modified with increased emphasis being placed on management of delivery systems”. With reference to specifically the 2003 rural service system initiative he emphasizes that “the marketing and production element of the original rural service centre concept appears to be slipping down the agenda”. In summary Robinson (2005) concludes that:

- Rural service centre strategies have been predominantly institutional;
- Rural service centres “remain a promising but largely untested component of the integrated development planning arsenal”; and
- The changes that have taken place in South Africa since 1994, including wall to wall local government, the planning system, an emphasis on service delivery, land reform, capacity building and local economic development although not sufficient, provides the conditions for the implementation of the rural service concept.

Robinson (2005) proposes certain pre-conditions for the successful implementation of the approach including appropriate land legal arrangements, political will supported by dedicated programmes, a planning system that adequately directs resources, the coordination of service delivery by institutions and well-capacitated local government.

Another precondition is a shift in mindset from an over-emphasis on formal plans to one which regards planning and implementation as a continuous process, with pilot projects being used to feedback information to improve performance. Finally,
it is vital for there to be an economic rationale for developing a rural service center, and understanding of the market forces and ways of making markets work in support of a rural service centre initiative. Herein lays an often overlooked factor – the valuable and essential role to be played by the private sector (Robinson 2005).

It must be noted that the most of the attempts to establish Rural Service Systems dated from before 2000 when the “wall-to-wall” local government system was introduced. No serious attempts to introduce such a system in KwaZulu-Natal, other than a 2003 review of plans in the early days of the new local government system, have been made. In 2013 COGTA also engaged in a process to identify Community Service Centres.

6.7. DEVELOPMENT NODES EXPLAINED CONCEPTUALLY

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

There are four identifiable tiers of nodes

⇒ Rural Investment Nodes
⇒ Rural Service centre
⇒ Rural Tourism and Recreational Nodes
⇒ AGric Nodes

Figure 37: Proposed nodes
6.7.1. Rural Service Nodes
According to eThekwini SDF 2014, these nodes provide local level of services (social and economic activities, traditional structures, facilities etc) for surrounding communities. It further suggests that they must be centrally located for easy access to surrounding rural communities. They must have easy access for pedestrians.

6.7.2. Rural Nodes
Rural Service Nodes (as per the Rural Development Framework Plan of Ethekwini Municipality) are to be established, consolidated and/or enhanced as village centres to provide support to the development of the rural and agricultural hinterland within the Rural Corridor. The nodes are to include community/social facilities, commercial and transportation infrastructure to support the residential needs located in the rural hinterland corridor and they are to be developed in a manner that reflects or establishes a clear identity with the community that it serves and the landscape that it is situated in. Existing established medium/high density residential nodes or developments are to be upgraded, but restricted in size and integrated with surrounding agricultural development.

6.7.3. Rural Investment Nodal Areas
The SDF notes that the Rural Investment Nodes have a potential to provide support Services (Business, Agriculture, Tourism and Environmental issues and opportunities for local economic development). It goes further to note that they must ideally be located within easy access to major transport routes, ideally must be located where there is already an existing accumulation of activities,

6.7.4. Rural Tourism and Recreational Nodes
In terms of the SDF, this category provides for a range of Cultural, Recreational and Tourism Opportunities for Local Economic Development. It identifies the following areas:
EXISTING HIERARCHY OF RURAL NODES

<table>
<thead>
<tr>
<th>Rural Investment Nodes</th>
<th>Rural Investment Node that have potential for Support Services: Business, Agriculture, Tourism and Environmental issues and opportunities for local economic development</th>
<th>uMgababa/ uMnini Umbumbulu</th>
<th>Inchanga uMzinyathi KwaXimba</th>
</tr>
</thead>
</table>

| Rural Service Nodes | Local level of services for the surrounding communities in terms of social and economic activities, traditional structures, facilities etc | Zwelibomvu KwaNgcolosi | Ntshongweni KwaSondela | Buffelsdraai Cottonlands | Adams/Folweni Matabetule (new) Senzokuhle (new) |

PROPOSED HIERARCHY OF RURAL NODES

<table>
<thead>
<tr>
<th>TYPE</th>
<th>DESCRIPTION</th>
<th>PRIORITY INTERVENTIONS</th>
<th>APPROACH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economic Investment Node</td>
<td>An area of major economic opportunity that, if realised, will impact on future settlement and employment patterns in the non-urban areas of eThekwini.</td>
<td>Ensure rural residents have access to opportunities Economic Investment Nodes</td>
<td>It is envisaged that a process be initiated to establish a number of priority rural investment nodes. The following key interventions are required: Assessment of the node, Demarcation of the node, Landownership investigation and recommendations, Precinct Plan for the Node (prepared in consultation with traditional / community structures), Development facilitation. Capital funding is to be secured for infrastructure and service provision.</td>
</tr>
</tbody>
</table>

| Rural Investment Node | Nodes that have the potential to fulfil a regional service function, often located in denser settlement areas, serving a substantial regional population catchment. Over time the node will develop its own economic base, potentially built around tertiary sector activities. The nodes will place equal emphasis on the provision of social services, commercial/retail facilities and production opportunities. It is anticipated that the private sector will be the main driver of development, supported actively by the public sector. | The focus will be on formally establishing the Investment Nodes with a view to attracting private sector resources to the rural areas. | |
**Rural Service Node**

Nodes that have the potential to serve a well-defined local area with a limited catchment. The densities in the catchment will most likely be more rural in nature than urban. Although the focus of the node will be on the delivery of social services, emphasis will also be placed on attracting retail activity, establishing the informal sector and supporting local production activities. It is envisaged that the public sector will be the driver of development.

The focus will be on identifying the nodes and developing approaches to growing the node over time.

It is envisaged that a process be initiated to establish a number of priority rural service nodes. The following key interventions are required: Assessment of the node, Demarcation of the node, Landownership investigation and recommendations, Node Management Plan is to be prepared to be followed when required with a Precinct Plan (prepared in consultation with traditional/ community structures), Development facilitation. Capital funding is to be secured for infrastructure and service provision where required.

**Special Service Node**

These are service nodes that have special characteristics to be considered in future planning.

**Tourism Node**

Nodes offering tourism and related opportunities of regional significance supporting the other tourism products on offer in eThekwini.

**Agricultural Zone**

Zones with significant agricultural potential to be retained for production or where densities should continue to be managed.

**Existing Urban Node**

These are existing urban nodes located within formal urban areas of eThekwini serving a substantial rural catchment. In future development of such nodes the rural service centre role to be fulfilled must be acknowledged and planned for.

**Potential Urban Node**

These are potential urban nodes located within formal urban areas of eThekwini potentially serving a substantial rural catchment.

---

**Table 15: Rural Nodes**
6.8. DEFINITION OF SDF BY REGIONS

6.8.1. SOUTH

6.8.1.1. Urban Node (due to study boundary alignment)
- Philani Valley
- Umlazi

6.8.1.2. Rural investment nodes
- Umbumbulu
- uMgababa

6.8.1.3. Rural Service Nodes
- uMnini
- Magabheni
- Nsimbini

6.8.1.4. Future urban node
- Folweni
- New umkomaas interchange
- KwaMakhutha

6.8.1.5. Recreational node
- Umgababa beach
- Inwabi
- Ntshongweni Dam

Figure 38: Nodes Plan study wide
6.8.2. OUTER WEST

6.8.2.1. Rural investment node
- Inchanga
- KwaXimba

6.8.2.2. Rural investment nodes
- Zweilibomvu
- Ntshongweni
- Senzokuhle
- KwaNgcolosi

6.8.2.3. Recreational
- Inanda Dam
- Matabetule

6.8.3. NORTH

6.8.3.1. Rural investment Nodes
- Umzinyathi
- KwaSondela

6.8.3.2. Rural Service Nodes
- Cottonlands
- Buffelsdraai
- Osindisweni
- eMaphephetheni

6.8.3.3. Recreational
- Hazelmere Dam
- Dudley Pringle dam
6.9. **KEY SPATIAL INTERVENTIONS**

- The success of spatial interventions will be underpinned by clear institutional proposals.
- Infrastructure interventions are detailed under infrastructure section.
- The spatial framework proposes a density informed approach where:
  - **High density areas** above 20 dwelling units per hectare,
  - **Medium density areas** of 7 – 20 dwelling units per hectare,
  - **Rural areas** of 4-7 dwelling units per hectare and,
  - **Commercial agriculture** lands of less than 4 dwelling units
- The spatial framework also suggests preservation of natural assets and the conservation of environmentally sensitive land parcels.
- The SDF further recommends ring fencing of agriculture land and initiation of appropriate agriculture development programmes.
6.10. The components of the system to grow nodes

6.10.1. Introduction

The proposed rural node growth system consists of three main components. The components of the system are:

- **Services system**: The services system is to be developed and maintained by the municipality and will essentially be the “glue that keeps everything together”. The system will provide basic guidelines to stakeholders and where necessary coordinate the activities of stakeholders between the various nodes. The development and implementation of the system will be facilitated by eThekwini Municipality.

- **Services provision**: Service provision is at the core of the concept and could potentially include community, commercial, government and non-government service provision. The extent of service provision at a specific node will be guided by the needs of the community.

- **Nodal development**: This is the physical point at which the social and commercial services, as well as production activity, will take place. The infrastructure and facilities to be developed at the node over time will be determined by the specific needs of the people in the catchment (community) and the extent to which the service point is utilised.

Each component is discussed in more detail below.

i. **Services system**

As indicated, the services system is to be developed and maintained by the eThekwini Municipality and will essentially be the “glue that keeps everything together”. The system will provide basic guidelines to stakeholders and where necessary coordinate the activities of stakeholders between the various service points. The development and implementation of the system will be facilitated by the eThekwini Municipality.
• The number of people that can be attracted to the node (i.e. the catchment); and
• The number of service providers that can be attracted to the node.

Coordination of both permanent and periodic service delivery on an eThekwini level will be important for success.

ii. Services provision

A range of community, commercial, government and non-government services could potentially be provided in nodes. Where services will be of a periodic nature the cycle for the provision of services at nodes will be agreed to with communities and stakeholders. The extent of service provision at a specific node will be guided by the needs of the community.

The nodes could also each have a distinctive focus. Some may have a retail, agricultural or tourism focus.

As a starting point the potential list of services to be offered in nodes can be categorised as follows.

<table>
<thead>
<tr>
<th>CATEGORY</th>
<th>TYPE</th>
<th>RANGE OF POTENTIAL SERVICES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retail services</td>
<td>Informal retail (community based)</td>
<td>Fruit and vegetables, locally processed goods, crafts (e.g. grass mats, ukhezo, ukhamba etc.), building materials, traditional medicine (muthi), second hand clothes, locally made clothes and knit wear, fast food (e.g. vetkoek, mealies, tripe) etc.</td>
</tr>
<tr>
<td></td>
<td>Informal retail (outside trader)</td>
<td>Clothes, second hand clothes, blankets, bags, shoes, general household goods, medicine, hair extensions</td>
</tr>
<tr>
<td></td>
<td>Formal retail</td>
<td>Groceries, basic household goods</td>
</tr>
<tr>
<td>Social / government services</td>
<td>Social services</td>
<td>Department of Social Welfare, Department of Health</td>
</tr>
<tr>
<td></td>
<td>Administrative services</td>
<td>Department of Home Affairs, Post Office</td>
</tr>
<tr>
<td></td>
<td>Pensions and Grants</td>
<td>South African Social Security Agency, Department of Social Welfare</td>
</tr>
<tr>
<td></td>
<td>Other government services</td>
<td>Municipality</td>
</tr>
<tr>
<td></td>
<td>NGO Capacity Building</td>
<td>SaveAct and others</td>
</tr>
<tr>
<td>Agricultural Services</td>
<td>Extension Services</td>
<td>Farmer’s days, Information services, General information provision</td>
</tr>
<tr>
<td></td>
<td>Marketing</td>
<td>Joint marketing of goods</td>
</tr>
<tr>
<td>Technology</td>
<td>ICT (Information and Communication Technology)</td>
<td>Accessing agricultural inputs including feed, fertiliser, seeds, herbicides, fencing material etc.</td>
</tr>
</tbody>
</table>

From the above it is evident that it is not only government institutions that should be involved in service provision at the node / service point. NGOs and private
sector organisations can potentially also have significant roles to fulfil in these areas.

### iii. nodal development

A node can offer access to a wide range of services and facilities. It is intended that, where relevant, the periodic service point in nodes will, over time, become the focus point for more formal social and commercial sector development (i.e. nodal development). For this reason the development of the node must be carefully planned to ensure that it can in future provide the basis for further development. Key aspects to be considered in the identification of the node include:

- Location of the node relative to where the users / community reside;
- Location of the node in relation to existing facilities;
- Availability of adequate space to cater for immediate and future needs to be addressed at the service point; and
- Access to basic infrastructure such as water and electricity.

As a starting point facilities required for the establishment of a node include:

- A large enough space to accommodate mobile services (clinics, ATMs, pension points, informal market);
- Basic covered space for periodic services (offices, gathering space etc);
- Access to water and electricity; and
- Ablution facilities.

The above is to be verified for each node. It is important that these basic facilities be developed in the context of a plan for the longer term development of the rural node.

Robinson (2008) identifies the following potential components of a trading centre (that could be equated to a basic node):

A village square (or field), on or adjacent to the main through road, for periodic activities and mobile infrastructure such as ATMs, mobile clinics, markets, social welfare registration, library, etc, and which can also be used for sports, parking, gatherings, marquees for functions, etc. Revenue streams include:

- Market trade in food, fresh produce, meat and poultry, and dry goods;
- Circulation of money via the ATM;
- Access to social welfare grants; and
- Fees to eThekwini Municipality (ring-fenced for maintenance of facilities) for use of field for functions.

An undercover meeting space, situated on the square for public meetings, weddings, funerals etc, school functions, training, social service delivery (e.g. pensions, inoculation). A more sophisticated version is a community hall. Revenue streams include:

- Pension payments (and the associated commercial and market activities on pension pay days);
- Fees to eThekwini (as above) for use of the meeting space.

Offices designed for multi-user occupancy such as local government and community development worker activities, social services, traditional government, community based organisations, utilities, small enterprises, etc. These could be in a detached block, adjacent to the square, or as part of a multi-purpose community hall. Revenue streams include:

- Rental to eThekwini (as above) for office space by utilities, small enterprises;
- Indirect revenue flows arising from the local availability of development information and community support.

Robinson (2008) identifies the following potential components of a trading centre (that could be equated to a basic node):
• Repairs.

Communications centre to include a mini postnet type of facility, public telephones, bulletin boards, periodic library, tourism information, public transport waiting areas/shelters, as well as means of communications with emergency services such as police, disaster management, ambulance and fire protection services. This centre will be part of the meeting space/hall. Revenue streams include:

• Public transport;
• Ordering goods and services;
• Tourism.
7. INFRASTRUCTURE

7.1. WATER

7.1.1. Key Issues from Status Quo Report
The following implications and key issues were deduced from the status quo report:

- Illegal water connections and wastage of water supplied to households strains the municipal supply volumes
- Illegal water connections cause substantial financial losses for the municipality in terms of loss of revenue
- Areas that receive water from water trucks are vulnerable to having no water if the roads are not serviced regularly and truck breakdowns etc.
- Where residents collect water from an untreated collection point, there is a risk of contracting water-borne diseases
- The provision of water for domestic and commercial consumption is directly related to personal and community hygiene.

7.1.2. Concepts and Standards Responding to Population Area Densities
The Guidelines for Human Settlement Planning and Design outlines the following objectives when planning to supply water to a settlement:

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

7.1.3. Objectives of water supply strategy
The following objections can be listed as outcomes for a sustainable water supply project:

- Domestic consumption of water and personal hygiene needs to be achieved.
- Existing water sources needs to be identified with protective measures identified to ensure that both yield and quality of the source are protected.
- The existing water supply quality and reliability to be maintained or improved.
- A high level of acceptability is required from the community through households with higher level of service contributing to the revenue stream for operational costs.

7.1.4. Water demand and levels of Service
The water demand is set forth by the demographic and service delivery information. This information includes the current population and number of households within the target area. These densities were summarized into three density bands. All assessments and recommendations will refer back to a high, medium and low settlement densities.

Water supply within these areas are normally regulated via a controlled basis where the first set amount is delivered free of change. Should the water consumption increase above the free basic amount, charges will be applied. It is anticipated that residence within these areas will have a constant monthly income. This monthly income will vary from area to area with a possible proportionate scaling done to the degree of revenue being generated. Further investigation is required into the possibility of revenue being created from certain areas where the demand is more that the allowable free consumption.
The existing/current level of service along with the consumption within identified areas can be utilized in establishing the level of service currently being achieved. This information is more readily available in developed areas. Determining the level of service in the various service nodes will require an in-depth investigation into the individual nodes. This falls outside the scope of this report, however, this assessment will be required once identified nodes are developed.

The population and economic growth within the study area is also required. This data will be used in evaluating the amount and degree of service upgrading required for the individual nodes. The level of service provided to consumers will influence the design principals. This assessment will be required once individual nodes are identified and the scope of development confirmed.

Occupation densities, available sources of water and current infrastructure will inform the decision of the planned level of service. The abovementioned data will be obtained and evaluated once individual nodes are identified for further evaluation/investigation.

The available levels of service are identified below according to the Policy and practices of the EThekwini Municipality Water and Sanitation Unit.

- **Level 1**
  A manually operated water dispenser/standpipe

- **Level 2**
  An individual household yard supply which supplies 300 litres per day (ground tank, where the flow is regulated through an electronic bailiff unit or metered flow limiter device, or a yard tap where the flow is regulated via metered flow limiter device).

- **Level 3**
  A semi-pressure supply in which the household service is provided via a roof tank.

- **Level 4**
  A full pressure supply.

- **Level 5**
  A full pressure supply with a restrictor.

### 7.1.5. Water Strategies for the EThekwini Rural Areas

As mentioned on the previous section, the level of service provided to the household is dependent on occupation densities and available sources of water. The current level of service in the study areas varies. The actual level of service within nodes will be identified and evaluated once in-depth studies are undertaken on specific nodes. This report provides a holistic view of improvements based on the various settlement densities.

Water supply to households are generally regarded as reliable and clean. This was established during community interviews conducted during the status quo phase. These interviews were undertaken to determine the existing water harvesting and supply networks throughout the entire project area. Rain water, which is predominantly of a high quality, is utilized at some residential houses situated within rural nodes. The water supply, by means of bulk water supply lines, is of good quality throughout the entire project area.

The current implications and key issues of the current level of service of water supply in the study area relates predominantly to water losses and illegal water connections. This puts further strain on municipal water supply. These illegal water connections are generally due to insufficient stand pipe and communal water points within rural areas. This results in residences tapping of main supply lines in an illegal manner for easier access.

Therefore the proposed strategies are inclined to preserve and monitor current water consumption as well as to address the availability and investment in new bulk water infrastructure. Bulk water supply networks along with standpipe/yard connections at more frequent locations will assist in reducing the amount of unaccounted water.

Water will be accounted for in a more controlled manner through the implementation of metered connections where possible. These metered connections can be for a single dwelling unit or a cluster of units. It must be noted that all metered connections and supply lines will have to be controlled/monitored to ensure that water is accounted for to a predetermined level of accountability.
The exact allocation of metered points will have to be proposed and evaluated during a detail investigation phase undertaken for each node.

It is proposed that a service level 1 be supplied to low settlement densities. These settlement densities typically relate to a few households located a fair distance from one another. It will not be financially viable to install a level of service 5 for low settlement densities. However, the financial viability of constructing and providing a higher level of service to individual households within this low settlement density area needs to be investigated on a spatial level.

Medium to high settlement densities can be supplied with a level 4 or 5 supply. Again, a detailed study is needed to determine the financial viability of installing this level of service within settlement densities. A continuous revenue stream must be generated from these densities in order to make the proposed improvements financially viable.

The minimum 9kL/month free water policy is generally regarded as a policy starting point for the rural areas within the EThekwini municipality. With increasing growth and densities in peri-urban areas, strategic measures must be introduced to preserve the existing water supply and reduce wasting of water.

The following strategies are proposed:
- Establish a cadastral and postal database using GIS whereby the municipality can bill water customers, where applicable
- Provide metered water connections to households and charge customers for water where applicable and viable
- Provision of measures to eradicate illegal water connections though detailed water control measures.

Strategies for the provision of new bulk infrastructure should include the following:
- Establish a well-documented cadastral layout of all formal and informal settlements
- Establish the capacity and operational status of existing water reservoirs
- Investigate the capacity and operational status of existing water treatment works and water pump stations
- Investigate the capacity and operational status of existing bulk water pipelines
- Determine and estimate what future water demands will be needed with increasing population growth in peri-urban areas
- Identify possible water sources where existing abstraction and treatment plants can’t meet future demand
- Identify areas and land for new bulk infrastructure (reservoirs, bulk supply and reticulation)

7.1.6. Water Programs for the ETekwini Rural Areas

The overall implications of water services within the study area refer to all areas and thus a more holistic program should be developed for the entire study area.

The following programmes are proposed:
- Educational programs informing residents about the scarcity of water and the implications of wasting water has on the municipality
- Educational programs focused on the impact of illegal connections on the supply conditions for individual areas.
- Informing households about the 9kL/month free policy and how it should be adhered to.
- Create community driven programs which helps in identifying water leaks in house connections and secondary water lines.
- Monitoring and control systems required to reduce the amount of illegal connections on all bulk supply lines and reticulation networks.
7.1.7. Water Nodes for the ETHekwini Rural Areas

Various development nodes were identified during the status quo stage. These nodes were identified through a process considering existing infrastructure, economical growth and future development within these nodes. A total of 48 nodes was identified through the entire ETHekwini Rural development area. The nodes can be combined into municipal area. These areas are listed in tables 1-3 below:

<table>
<thead>
<tr>
<th>Area</th>
<th>Amount of nodes</th>
<th>Nodes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outer West</td>
<td>19</td>
<td>Imbozamo</td>
</tr>
<tr>
<td></td>
<td></td>
<td>KwaXimba</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ntukuso</td>
</tr>
<tr>
<td></td>
<td></td>
<td>KwaSondela</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Kwa Sondela 2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Unknown (Cate Ridge)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Unknown (Inchanga)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Unknown (Drummond)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Unknown (Moya)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Unknown (Mpumalanga)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Nshongweni 1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Nshongweni</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Shongweni Dam Tourism</td>
</tr>
<tr>
<td></td>
<td></td>
<td>KwaNdengesi</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Nshongweni</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Dassenhoek</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Unknown (Mariannhill)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Unknown (Angola)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Unknown (Sgubudwini)</td>
</tr>
</tbody>
</table>

Table 16: Nodes within outer western part of ETHekwini rural development area

<table>
<thead>
<tr>
<th>Area</th>
<th>Amount of nodes</th>
<th>Nodes</th>
</tr>
</thead>
<tbody>
<tr>
<td>North</td>
<td>13</td>
<td>Tourism</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cottonlands</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tourism 1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Osindisweni</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Buffelsdraai</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Senzokukhle</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Inanda Dam Tourism</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Umzinyathi Corridor</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mpenjeni</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tourism/RSS</td>
</tr>
<tr>
<td></td>
<td></td>
<td>KwaNgolisi</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Molweni</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Waterfall</td>
</tr>
</tbody>
</table>

Table 17: Nodes within northern part of ETHekwini rural development area

<table>
<thead>
<tr>
<th>Area</th>
<th>Amount of nodes</th>
<th>Nodes</th>
</tr>
</thead>
<tbody>
<tr>
<td>South</td>
<td>17</td>
<td>Zwelibomvu</td>
</tr>
<tr>
<td></td>
<td></td>
<td>External Node</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Umbumbulu</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Inwabi</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tourism</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Umlazi K</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Folweni</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Nsimbini</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Umlazi Y</td>
</tr>
<tr>
<td></td>
<td></td>
<td>KwaMakhuta</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Lovu</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Umnini</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Umgababa</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Umgababa Tourism</td>
</tr>
</tbody>
</table>

Table 18: Nodes within southern part of ETHekwini rural development area
The development strategy investigated the extent of existing infrastructure within the individual nodes. Proposed improvements/expansion to these nodes were also proposed, however the purpose of this report proved to be based on a more holistic overview and settlement densities.

Proposed improvements and interventions are listed based on the three settlement densities identified through the study area. These densities were divided into low, medium and high densities as discussed earlier in this report.

Proposed improvements are discussed based on the various nodes and settlement densities identified throughout the study area:

- **First scenario: Associated with high density areas**
  The level of service associated with high settlement densities is assumed to be at least level 2 in remote areas. This level of service will increase as the remoteness of the areas decrease.

  A level 4 or 5 service can be viable within high density areas situated close to existing bulk infrastructure. This improved level of service can only become viable when residents, within a specific density area, contribute for all usage above the basic free supply.

  Further costs will be associated with constructing pumping mains along with reticulation networks. The exact extend of these costs can only be determined once a preliminary design has been undertaken on individual nodes. Estimate figures can be listed as follow:

<table>
<thead>
<tr>
<th>Description</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reticulation and yard connection construction cost</td>
<td>R 35 000 / du</td>
</tr>
<tr>
<td>Pumping main construction cost</td>
<td>R 2 500 / m of main</td>
</tr>
<tr>
<td>Pump station construction cost</td>
<td>R 5-10 Million per station (assumed 5-10 ML per day capacity)</td>
</tr>
<tr>
<td>Reservoir</td>
<td>R 2-3 Million per ML storage</td>
</tr>
</tbody>
</table>

- **Second scenario: Associated with medium density areas**
  A level 3 or 4 service supply is proposed for medium dense settlements. This level of service is proposed for areas where existing infrastructure is available. The medium dense settlement areas will also be required to generate all required revenue associated with supply above the basic free supply per month.

  The above proposed level of service will require capital investment to the degree that all households, where viable, be serviced with a yard connection. This yard connection does not require high pressures for level of service 3. The cost breakdown is as follows:

<table>
<thead>
<tr>
<th>Description</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic free volume required</td>
<td>300 l/du/day</td>
</tr>
<tr>
<td>Total household within medium settlement densities</td>
<td>22 472 du</td>
</tr>
<tr>
<td>Estimated amount of water required</td>
<td>6.74 ML/day</td>
</tr>
<tr>
<td>Cost associated with upgrading/Increasing the treatment capacity of a plant</td>
<td>R 12.5 Million per ML increase</td>
</tr>
<tr>
<td>Cost associated with constructing a new abstraction/treatment plant</td>
<td>R 20-22.5 million per ML capacity</td>
</tr>
</tbody>
</table>
Further costs will be associated with constructing pumping mains along with reticulation networks. The exact extend of these costs can only be determined once a preliminary design has been undertaken on individual nodes. Estimate figures can be listed as follow:

| Reticulation and yard connection construction cost | R 60 000 / du |
| Pumping main construction cost | R 3 500 / m of main |
| Pump station construction cost | R 7-12 Million per station (assumed 5-10 Ml per day capacity) |
| Reservoir | R 2-3 Million per Ml storage |

The above listed scenarios were identified through the process of evaluating the various nodes and infrastructure within its vicinity. The below comments on individual nodes takes into consideration all settlement densities.

### 7.1.8. Outer west study area

- **Imbozamo**

  A bulk water supply network has been installed within the node and surrounding areas. The node has an existing reticulation network that could be expanded. The possibility of installing waterborne sewage could be investigated with a bulk water reticulation network within the node. This is discussed further within this report.

  The node can be summarized as follow (approximate):

<table>
<thead>
<tr>
<th>Density areas</th>
<th>% of node</th>
</tr>
</thead>
<tbody>
<tr>
<td>High density settlement area</td>
<td>0</td>
</tr>
<tr>
<td>Medium density settlement area</td>
<td>10</td>
</tr>
<tr>
<td>Low density settlement area</td>
<td>30</td>
</tr>
<tr>
<td>Un-developed area</td>
<td>60</td>
</tr>
</tbody>
</table>

- **KwaXimba**

Further costs will be associated with constructing pumping mains along with reticulation networks. The exact extend of these costs can only be determined once a preliminary design has been undertaken on individual nodes. Estimate figures can be listed as follow:

| Reticulation and yard connection construction cost | R 60 000 / du |
| Pumping main construction cost | R 3 500 / m of main |
| Pump station construction cost | R 7-12 Million per station (assumed 5-10 Ml per day capacity) |
| Reservoir | R 2-3 Million per Ml storage |
Existing bulk water supply is constructed within the node. The existing bulk line supplies various reticulation networks within the node. This infrastructure can be expanded into servicing the entire node. The possibility of waterborne sewage could be viable once a fully operational bulk water network is constructed.

The node can be summarized as follow (approximate):

<table>
<thead>
<tr>
<th>Density areas</th>
<th>% of node</th>
</tr>
</thead>
<tbody>
<tr>
<td>High density settlement area</td>
<td>20</td>
</tr>
<tr>
<td>Medium density settlement area</td>
<td>5</td>
</tr>
<tr>
<td>Low density settlement area</td>
<td>5</td>
</tr>
<tr>
<td>Un-developed area</td>
<td>70</td>
</tr>
</tbody>
</table>

- **Ntukuso**

An existing bulk water network is within the node. A main bulk supply line runs a substantial distance from the associated node with various reticulation networks bracing from this line. This infrastructure can be increased in capacity to meet further expansion.

The node can be summarized as follow (approximate):

<table>
<thead>
<tr>
<th>Density areas</th>
<th>% of node</th>
</tr>
</thead>
<tbody>
<tr>
<td>High density settlement area</td>
<td>10</td>
</tr>
<tr>
<td>Medium density settlement area</td>
<td>20</td>
</tr>
<tr>
<td>Low density settlement area</td>
<td>30</td>
</tr>
<tr>
<td>Un-developed area</td>
<td>40</td>
</tr>
</tbody>
</table>

- **KwaSondela**

Minimal reticulation infrastructure is present within the node. The remote location of the node restricts the expansion of the reticulation networks. The high settlement density of the area supports further expansion within the node.

The node can be summarized as follow (approximate):

<table>
<thead>
<tr>
<th>Density areas</th>
<th>% of node</th>
</tr>
</thead>
<tbody>
<tr>
<td>High density settlement area</td>
<td>30</td>
</tr>
<tr>
<td>Medium density settlement area</td>
<td>30</td>
</tr>
<tr>
<td>Low density settlement area</td>
<td>10</td>
</tr>
<tr>
<td>Un-developed area</td>
<td>30</td>
</tr>
</tbody>
</table>

- **Unknown (Cato Ridge)**

A substantial amount of bulk water supply lines runs through the project node under discussion. Existing reticulation networks are operating within the area. The availability of water within this node will support the proposed waterborne sewage for the area.

The node can be summarized as follow (approximate):

<table>
<thead>
<tr>
<th>Density areas</th>
<th>% of node</th>
</tr>
</thead>
<tbody>
<tr>
<td>High density settlement area</td>
<td>5</td>
</tr>
<tr>
<td>Medium density settlement area</td>
<td>10</td>
</tr>
<tr>
<td>Low density settlement area</td>
<td>0</td>
</tr>
</tbody>
</table>
Similar to the above node, a substantial amount of bulk supply lines runs pass the node with reticulation branching into the node. Minor capital expenditure will be required to expand the existing water reticulation network.

The node can be summarized as follow (approximate):

<table>
<thead>
<tr>
<th>Density areas</th>
<th>% of node</th>
</tr>
</thead>
<tbody>
<tr>
<td>High density settlement area</td>
<td>90</td>
</tr>
<tr>
<td>Medium density settlement area</td>
<td>0</td>
</tr>
<tr>
<td>Low density settlement area</td>
<td>0</td>
</tr>
<tr>
<td>Un-developed area</td>
<td>10</td>
</tr>
</tbody>
</table>

- Unknown (Inchanga)

Existing water reticulation infrastructure is present within this node. These networks could be linked up by passing a bulk supply line through the node under discussion. The connection of portions of the supply line will ultimately result in a holistic network through the various nodes. The reticulation network can be expanded to accommodate further development.

The node can be summarized as follow (approximate):

<table>
<thead>
<tr>
<th>Density areas</th>
<th>% of node</th>
</tr>
</thead>
<tbody>
<tr>
<td>High density settlement area</td>
<td>60</td>
</tr>
<tr>
<td>Medium density settlement area</td>
<td>0</td>
</tr>
<tr>
<td>Low density settlement area</td>
<td>0</td>
</tr>
<tr>
<td>Un-developed area</td>
<td>40</td>
</tr>
</tbody>
</table>

- Unknown (Drummond)

Expansion to the existing water network will be required in order to meet the demand set forth by the node. Substantial bulk supply lines are passing through this node. Additional capital expenditure will be required to construct an improved level of reticulation network. This capital cost could be recovered through the revenue that will be generated on both water and wastewater services.

The node can be summarized as follow (approximate):

<table>
<thead>
<tr>
<th>Density areas</th>
<th>% of node</th>
</tr>
</thead>
<tbody>
<tr>
<td>High density settlement area</td>
<td>5</td>
</tr>
<tr>
<td>Medium density settlement area</td>
<td>80</td>
</tr>
<tr>
<td>Low density settlement area</td>
<td>5</td>
</tr>
<tr>
<td>Un-developed area</td>
<td>10</td>
</tr>
</tbody>
</table>

- Unknown (Moya)

- Unknown (Mpumalanga)
Similar to the above mentioned node, existing bulk water networks could be upgraded and linked to supply the node with potable water. Expansion to the existing reticulation network is also proposed.

The node can be summarized as follow (approximate):

<table>
<thead>
<tr>
<th>Density areas</th>
<th>% of node</th>
</tr>
</thead>
<tbody>
<tr>
<td>High density settlement area</td>
<td>75</td>
</tr>
<tr>
<td>Medium density settlement area</td>
<td>0</td>
</tr>
<tr>
<td>Low density settlement area</td>
<td>0</td>
</tr>
<tr>
<td>Un-developed area</td>
<td>25</td>
</tr>
</tbody>
</table>

- **Nshongweni**

Water reticulation networks are within this and adjacent nodes. The remote location of the node makes further capital expenditure on water reticulation extremely high. The topographical nature of this area will require substantial expenditure for infrastructure expansion.

The node can be summarized as follow (approximate):

<table>
<thead>
<tr>
<th>Density areas</th>
<th>% of node</th>
</tr>
</thead>
<tbody>
<tr>
<td>High density settlement area</td>
<td>50</td>
</tr>
<tr>
<td>Medium density settlement area</td>
<td>0</td>
</tr>
<tr>
<td>Low density settlement area</td>
<td>10</td>
</tr>
<tr>
<td>Un-developed area</td>
<td>40</td>
</tr>
</tbody>
</table>

- **Shongweni Dam Tourism**

An existing reticulation network is present within the area, but expansion is required to meet future demand. The topographical nature of the area will require additional expenditure to expand on the bulk supply infrastructure. This bulk supply network will further support the proposed waterborne sewage network.

The node can be summarized as follow (approximate):

<table>
<thead>
<tr>
<th>Density areas</th>
<th>% of node</th>
</tr>
</thead>
<tbody>
<tr>
<td>High density settlement area</td>
<td>30</td>
</tr>
<tr>
<td>Medium density settlement area</td>
<td>0</td>
</tr>
<tr>
<td>Low density settlement area</td>
<td>20</td>
</tr>
<tr>
<td>Un-developed area</td>
<td>50</td>
</tr>
</tbody>
</table>

- **KwaNdengesi**

Existing infrastructure in this node is well developed. Expansion on the existing network will be through upgrading existing infrastructure. This expenditure will be recovered through revenue generated from the settlement density of the node.

The node can be summarized as follow (approximate):

<table>
<thead>
<tr>
<th>Density areas</th>
<th>% of node</th>
</tr>
</thead>
<tbody>
<tr>
<td>High density settlement area</td>
<td>20</td>
</tr>
<tr>
<td>Medium density settlement area</td>
<td>5</td>
</tr>
<tr>
<td>Low density settlement area</td>
<td>20</td>
</tr>
<tr>
<td>Un-developed area</td>
<td>55</td>
</tr>
</tbody>
</table>

- **Nshongweni 1**
Bulk water infrastructure, within this node, can be upgraded and expanded into a reticulation network. This proposed expansion of the water reticulation will assist the proposed waterborne sanitation within the area.

The node can be summarized as follow (approximate):

<table>
<thead>
<tr>
<th>Density areas</th>
<th>% of node</th>
</tr>
</thead>
<tbody>
<tr>
<td>High density settlement</td>
<td>60</td>
</tr>
<tr>
<td>Medium density settlement</td>
<td>0</td>
</tr>
<tr>
<td>Low density settlement</td>
<td>0</td>
</tr>
<tr>
<td>Un-developed area</td>
<td>40</td>
</tr>
</tbody>
</table>

- Dassenhoek

Additional capital expenditure will be required for expansion of the existing reticulation supply network within the node. Existing supply infrastructure within adjacent nodes can be extended to supply the associated node with a bulk reticulation network.

The node can be summarized as follow (approximate):

<table>
<thead>
<tr>
<th>Density areas</th>
<th>% of node</th>
</tr>
</thead>
<tbody>
<tr>
<td>High density settlement</td>
<td>Unknown</td>
</tr>
<tr>
<td>Medium density settlement</td>
<td>Unknown</td>
</tr>
<tr>
<td>Low density settlement</td>
<td>Unknown</td>
</tr>
<tr>
<td>Un-developed area</td>
<td>Unknown</td>
</tr>
</tbody>
</table>

- Unknown (Mariannhill)

Substantial capital expenditure will be required if the associated node are to be serviced with a bulk supply and reticulation network. The remote and topographical nature of the area will attract extensive costs. The medium settlement density of the area will prove difficult to generate the required revenue.

The node can be summarized as follow (approximate):

<table>
<thead>
<tr>
<th>Density areas</th>
<th>% of node</th>
</tr>
</thead>
<tbody>
<tr>
<td>High density settlement</td>
<td>Unknown</td>
</tr>
<tr>
<td>Medium density settlement</td>
<td>Unknown</td>
</tr>
<tr>
<td>Low density settlement</td>
<td>Unknown</td>
</tr>
<tr>
<td>Un-developed area</td>
<td>Unknown</td>
</tr>
</tbody>
</table>

- Unknown (Angola)

The topographical nature and remote location of the node will require a large capital expenditure budget to supply the area with a bulk water supply line. Low settlement density within the area will not justify the required capital cost as being viable.

The node can be summarized as follow (approximate):

<table>
<thead>
<tr>
<th>Density areas</th>
<th>% of node</th>
</tr>
</thead>
<tbody>
<tr>
<td>High density settlement</td>
<td>Unknown</td>
</tr>
<tr>
<td>Medium density settlement</td>
<td>Unknown</td>
</tr>
<tr>
<td>Low density settlement</td>
<td>Unknown</td>
</tr>
</tbody>
</table>
Similar to the above mentioned, the node has a low settlement density. The remote location of the node requires substantial expenditure to expand on the existing water reticulation network.

The node can be summarized as follows (approximate):

<table>
<thead>
<tr>
<th>Density areas</th>
<th>% of node</th>
</tr>
</thead>
<tbody>
<tr>
<td>High density settlement area</td>
<td>Unknown</td>
</tr>
<tr>
<td>Medium density settlement area</td>
<td>Unknown</td>
</tr>
<tr>
<td>Low density settlement area</td>
<td>Unknown</td>
</tr>
</tbody>
</table>

2.7.2 North

- Tourism

Existing bulk supply infrastructure exists within the associated node. The existing reticulation network needs to be upgraded in order to comply with the ever growing development demand.

The node can be summarized as follows (approximate):

<table>
<thead>
<tr>
<th>Density areas</th>
<th>% of node</th>
</tr>
</thead>
<tbody>
<tr>
<td>High density settlement area</td>
<td>50</td>
</tr>
<tr>
<td>Medium density settlement area</td>
<td>0</td>
</tr>
</tbody>
</table>

- Cottonlands

Infrastructure adjacent to the node could be extended to serve as bulk supply reticulation. Minimal reticulation infrastructure is within the node. This requires further expansion in order to meet growing demand.

The node can be summarized as follows (approximate):

<table>
<thead>
<tr>
<th>Density areas</th>
<th>% of node</th>
</tr>
</thead>
<tbody>
<tr>
<td>High density settlement area</td>
<td>Unknown</td>
</tr>
<tr>
<td>Medium density settlement area</td>
<td>Unknown</td>
</tr>
<tr>
<td>Low density settlement area</td>
<td>Unknown</td>
</tr>
</tbody>
</table>

- Tourism 1

Minimal reticulation networks have been constructed within the area. Further expansion is required to the network should the proposed tourism hub grow as anticipated.

The node can be summarized as follows (approximate):

<table>
<thead>
<tr>
<th>Density areas</th>
<th>% of node</th>
</tr>
</thead>
<tbody>
<tr>
<td>High density settlement area</td>
<td>0</td>
</tr>
</tbody>
</table>
Existing infrastructure within the node could be expanded to serve the high settlement density within the node. Expansion to the existing reticulation network will be required to meet growing demand. Revenue could be generated from the high density community.

The node can be summarized as follow (approximate):

<table>
<thead>
<tr>
<th>Density areas</th>
<th>% of node</th>
</tr>
</thead>
<tbody>
<tr>
<td>High density settlement area</td>
<td>35</td>
</tr>
<tr>
<td>Medium density settlement area</td>
<td>20</td>
</tr>
<tr>
<td>Low density settlement area</td>
<td>5</td>
</tr>
<tr>
<td>Un-developed area</td>
<td>40</td>
</tr>
</tbody>
</table>

Existing bulk infrastructure running close by the node could be extended. This extension could pass into the node and possible linking into an adjacent supply. The initial expenditure could be generated from the medium settlement density within the area.

The node can be summarized as follow (approximate):

<table>
<thead>
<tr>
<th>Density areas</th>
<th>% of node</th>
</tr>
</thead>
<tbody>
<tr>
<td>High density settlement area</td>
<td>5</td>
</tr>
<tr>
<td>Medium density settlement area</td>
<td>65</td>
</tr>
<tr>
<td>Low density settlement area</td>
<td>15</td>
</tr>
<tr>
<td>Un-developed area</td>
<td>15</td>
</tr>
</tbody>
</table>

An existing reticulation network within the node requires upgrading. The growing demand on water supply within the area supports the proposed upgrading.

The node can be summarized as follow (approximate):
The node can be summarized as follow (approximate):

<table>
<thead>
<tr>
<th>Density areas</th>
<th>% of node</th>
</tr>
</thead>
<tbody>
<tr>
<td>High density settlement area</td>
<td>35</td>
</tr>
<tr>
<td>Medium density settlement area</td>
<td>15</td>
</tr>
<tr>
<td>Low density settlement area</td>
<td>45</td>
</tr>
<tr>
<td>Un-developed area</td>
<td>5</td>
</tr>
</tbody>
</table>

- **Umzinyathi corridor**

A vast reticulation network is present within the node. The high dwelling occupancy of the area will support the expansion of the existing network. Minimal capital expenditure is anticipated for the proposed upgrading of the area.

The node can be summarized as follow (approximate):

<table>
<thead>
<tr>
<th>Density areas</th>
<th>% of node</th>
</tr>
</thead>
<tbody>
<tr>
<td>High density settlement area</td>
<td>50</td>
</tr>
<tr>
<td>Medium density settlement area</td>
<td>50</td>
</tr>
<tr>
<td>Low density settlement area</td>
<td>0</td>
</tr>
<tr>
<td>Un-developed area</td>
<td>0</td>
</tr>
</tbody>
</table>

- **Mpenjeni**

Similar to the abovementioned, existing reticulation networks within the area requires upgrading. This proposed upgrading of the network is required in order to meet growing demand in water supply.

The node can be summarized as follow (approximate):

<table>
<thead>
<tr>
<th>Density areas</th>
<th>% of node</th>
</tr>
</thead>
<tbody>
<tr>
<td>High density settlement area</td>
<td>0</td>
</tr>
<tr>
<td>Medium density settlement area</td>
<td>10</td>
</tr>
<tr>
<td>Low density settlement area</td>
<td>80</td>
</tr>
<tr>
<td>Un-developed area</td>
<td>10</td>
</tr>
</tbody>
</table>

- **Tourism/RSS**

Similar to the abovementioned node, capital expenditure will be required to upgrade existing reticulation networks within the node. An adequate bulk supply line is operating within the area.

The node can be summarized as follow (approximate):

<table>
<thead>
<tr>
<th>Density areas</th>
<th>% of node</th>
</tr>
</thead>
<tbody>
<tr>
<td>High density settlement area</td>
<td>0</td>
</tr>
<tr>
<td>Medium density settlement area</td>
<td>0</td>
</tr>
<tr>
<td>Low density settlement area</td>
<td>0</td>
</tr>
<tr>
<td>Un-developed area</td>
<td>0</td>
</tr>
</tbody>
</table>

- **KwaNgolisi**
Bulk supply infrastructure exists within this node or adjacent ones. Construction of the reticulation will be required to upgrade the network. A detailed investigation will be required into identifying the extent of service required.

The node can be summarized as follow (approximate):

<table>
<thead>
<tr>
<th>Density areas</th>
<th>% of node</th>
</tr>
</thead>
<tbody>
<tr>
<td>High density settlement area</td>
<td>0</td>
</tr>
<tr>
<td>Medium density settlement area</td>
<td>0</td>
</tr>
<tr>
<td>Low density settlement area</td>
<td>100</td>
</tr>
<tr>
<td>Un-developed area</td>
<td>0</td>
</tr>
</tbody>
</table>

- **Molweni**

As discussed above, the node under investigation has existing water reticulation infrastructure within its vicinity. The feasibility of expanding existing infrastructure needs to be investigated. The medium dense settlement within the area might prove adequate in generating revenue.

The node can be summarized as follow (approximate):

<table>
<thead>
<tr>
<th>Density areas</th>
<th>% of node</th>
</tr>
</thead>
<tbody>
<tr>
<td>High density settlement area</td>
<td>80</td>
</tr>
<tr>
<td>Medium density settlement area</td>
<td>5</td>
</tr>
<tr>
<td>Low density settlement area</td>
<td>10</td>
</tr>
<tr>
<td>Un-developed area</td>
<td>5</td>
</tr>
</tbody>
</table>

- **Waterfall**

Existing infrastructure within the node can be upgraded to meet growing demand from the area. Bulk supply for the node can be achieved by linking into the existing infrastructure situated within close proximity of the node.

The node can be summarized as follow (approximate):

<table>
<thead>
<tr>
<th>Density areas</th>
<th>% of node</th>
</tr>
</thead>
<tbody>
<tr>
<td>High density settlement area</td>
<td>0</td>
</tr>
<tr>
<td>Medium density settlement area</td>
<td>50</td>
</tr>
<tr>
<td>Low density settlement area</td>
<td>50</td>
</tr>
<tr>
<td>Un-developed area</td>
<td>0</td>
</tr>
</tbody>
</table>

- **South**

- **Zwelibomvu**

Numerous bulk supply infrastructure is located within the node or nearby areas. The mountainous terrain within this node does not support any substantial expansion of the reticulation network. Substantial expenditure to the existing bulk network will be required due to increasing water supply demand.
The node can be summarized as follow (approximate):

<table>
<thead>
<tr>
<th>Density areas</th>
<th>% of node</th>
</tr>
</thead>
<tbody>
<tr>
<td>High density settlement area</td>
<td>0</td>
</tr>
<tr>
<td>Medium density settlement area</td>
<td>30</td>
</tr>
<tr>
<td>Low density settlement area</td>
<td>30</td>
</tr>
<tr>
<td>Un-developed area</td>
<td>40</td>
</tr>
</tbody>
</table>

- **External Node**

Existing bulk infrastructure within the node needs to be expanded into reticulation networks. These networks can potentially supply water to house connections situated through the area, however the topographical nature of the area requires substantial capita expenditure for the proposed expansion.

The node can be summarized as follow (approximate):

<table>
<thead>
<tr>
<th>Density areas</th>
<th>% of node</th>
</tr>
</thead>
<tbody>
<tr>
<td>High density settlement area</td>
<td>80</td>
</tr>
<tr>
<td>Medium density settlement area</td>
<td>20</td>
</tr>
<tr>
<td>Low density settlement area</td>
<td>0</td>
</tr>
<tr>
<td>Un-developed area</td>
<td>0</td>
</tr>
</tbody>
</table>

- **Umbumbulu**

The node under investigation does contain existing bulk water supply. The reticulation network within the area is not well developed. Further expansion to the reticulation is required. Estimated revenue generated from the area can be justified to support the proposed expansion.

The node can be summarized as follow (approximate):

<table>
<thead>
<tr>
<th>Density areas</th>
<th>% of node</th>
</tr>
</thead>
<tbody>
<tr>
<td>High density settlement area</td>
<td>0</td>
</tr>
</tbody>
</table>

- **Inwabi**

Existing bulk infrastructure within the project area could be extended further. Water reticulation within the area is required to supply potable water within close proximity of dwelling units. The dwelling density within the area is high, resulting in the possibility of some revenue being generated from the area.

The node can be summarized as follow (approximate):

<table>
<thead>
<tr>
<th>Density areas</th>
<th>% of node</th>
</tr>
</thead>
<tbody>
<tr>
<td>High density settlement area</td>
<td>0</td>
</tr>
</tbody>
</table>
The suggested expansion in the abovementioned node could spill over into the node under investigation. The proposed expansion of existing bulk infrastructure and reticulation networks is required for the node.

The node can be summarized as follow (approximate):

<table>
<thead>
<tr>
<th>Density areas</th>
<th>% of node</th>
</tr>
</thead>
<tbody>
<tr>
<td>High density settlement area</td>
<td>50</td>
</tr>
<tr>
<td>Medium density settlement area</td>
<td>50</td>
</tr>
<tr>
<td>Low density settlement area</td>
<td>0</td>
</tr>
<tr>
<td>Un-developed area</td>
<td>0</td>
</tr>
</tbody>
</table>

- **Tourism**

An existing bulk supply line runs within the project node. This infrastructure can be expanded to accommodate most areas within the associated node.

The node can be summarized as follow (approximate):

<table>
<thead>
<tr>
<th>Density areas</th>
<th>% of node</th>
</tr>
</thead>
<tbody>
<tr>
<td>High density settlement area</td>
<td>50</td>
</tr>
<tr>
<td>Medium density settlement area</td>
<td>45</td>
</tr>
<tr>
<td>Low density settlement area</td>
<td>0</td>
</tr>
<tr>
<td>Un-developed area</td>
<td>5</td>
</tr>
</tbody>
</table>

- **Umlazi K**

Existing infrastructure is located within the node. Expenditure to the bulk supply network will be required as well as the existing reticulation system. This expenditure will ensure that the project node will receive the required level of supply.

The node can be summarized as follow (approximate):

<table>
<thead>
<tr>
<th>Density areas</th>
<th>% of node</th>
</tr>
</thead>
<tbody>
<tr>
<td>High density settlement area</td>
<td>40</td>
</tr>
<tr>
<td>Medium density settlement area</td>
<td>10</td>
</tr>
<tr>
<td>Low density settlement area</td>
<td>10</td>
</tr>
<tr>
<td>Un-developed area</td>
<td>40</td>
</tr>
</tbody>
</table>

- **Folweni**

Substantial capital expenditure will be required within the node. Existing infrastructure is situated within distant nodes. The topographical nature between the node and existing infrastructure will lead to high capital expenditure.

The node can be summarized as follow (approximate):

<table>
<thead>
<tr>
<th>Density areas</th>
<th>% of node</th>
</tr>
</thead>
<tbody>
<tr>
<td>High density settlement area</td>
<td>40</td>
</tr>
<tr>
<td>Medium density settlement area</td>
<td>10</td>
</tr>
<tr>
<td>Low density settlement area</td>
<td>10</td>
</tr>
<tr>
<td>Un-developed area</td>
<td>5</td>
</tr>
</tbody>
</table>

- **Nsimbini**

Substantial capital expenditure will be required within the node. Existing infrastructure is situated within distant nodes. The topographical nature between the node and existing infrastructure will lead to high capital expenditure.

The node can be summarized as follow (approximate):
High density settlement area | 20
Medium density settlement area | 15
Low density settlement area | 65
Un-developed area | 0

- Umlazi Y

Existing bulk infrastructure is located within adjacent nodes. This infrastructure could be expanded further into the node. The topographical nature of the area will require minimal additional expenditure on the proposed extension of the bulk line.

The node can be summarized as follow (approximate):

<table>
<thead>
<tr>
<th>Density areas</th>
<th>% of node</th>
</tr>
</thead>
<tbody>
<tr>
<td>High density settlement area</td>
<td>15</td>
</tr>
<tr>
<td>Medium density settlement area</td>
<td>0</td>
</tr>
<tr>
<td>Low density settlement area</td>
<td>85</td>
</tr>
<tr>
<td>Un-developed area</td>
<td>0</td>
</tr>
</tbody>
</table>

- KwaMakhuta

Existing infrastructure within the greater node could be utilized. Bulk supply infrastructure is operating within adjacent nodes. This infrastructure could be upgraded and expanded into supplying the associated node. Reticulation infrastructure within the node could be upgraded to required level.

The node can be summarized as follow (approximate):

<table>
<thead>
<tr>
<th>Density areas</th>
<th>% of node</th>
</tr>
</thead>
<tbody>
<tr>
<td>High density settlement area</td>
<td>Unknown</td>
</tr>
<tr>
<td>Medium density settlement area</td>
<td>Unknown</td>
</tr>
<tr>
<td>Low density settlement area</td>
<td>Unknown</td>
</tr>
<tr>
<td>Un-developed area</td>
<td>Unknown</td>
</tr>
</tbody>
</table>

- Lovu

Existing bulk infrastructure expands into the node. Minimal expenditure will be required to expand the network. This initial expenditure could be recovered through implementing a revenue system within the node’s high settlement density. The node can be summarized as follow (approximate):

<table>
<thead>
<tr>
<th>Density areas</th>
<th>% of node</th>
</tr>
</thead>
<tbody>
<tr>
<td>High density settlement area</td>
<td>65</td>
</tr>
<tr>
<td>Medium density settlement area</td>
<td>25</td>
</tr>
<tr>
<td>Low density settlement area</td>
<td>10</td>
</tr>
<tr>
<td>Un-developed area</td>
<td>0</td>
</tr>
</tbody>
</table>

- Umnini

Existing bulk infrastructure was constructed within the area under investigation. The node is situated between well developed areas. Existing reticulation infrastructure can be expanded and upgraded to meet demand set forth by newly proposed developments.

The node can be summarized as follow (approximate):
Density areas | % of node
--- | ---
High density settlement area | 0
Medium density settlement area | 60
Low density settlement area | 30
Un-developed area | 10

The node can be summarized as follow (approximate):

Density areas | % of node
--- | ---
High density settlement area | 90
Medium density settlement area | 10
Low density settlement area | 0
Un-developed area | 0

---

○ Umgababa

Existing infrastructure is available within the project area. The node has a high settlement density which supports the existing infrastructure. Reticulation networks within the node requires upgrading.

The node can be summarized as follow (approximate):

Density areas | % of node
--- | ---
High density settlement area | 80
Medium density settlement area | 20
Low density settlement area | 0
Un-developed area | 0

○ Umgababa Tourism

Similar conditions as above exists within the current node. Expansion of the existing water reticulation network is required. This expansion need to be sized according to the demand set forth by new developments.

○ Infracombe

Existing reticulation infrastructure within the area requires upgrading. The bulk supply line within the area are to be upgraded as well. The high settlement density of the area could justify further expenditure to the existing infrastructure.

The node can be summarized as follow (approximate):

Density areas | % of node
--- | ---
High density settlement area | Unknown
Medium density settlement area | Unknown
Low density settlement area | Unknown
Un-developed area | Unknown

○ Magabeni

Limited bulk infrastructure is present within the area. Extensive expansion of both the bulk supply and reticulation network will be required. The remote location of the area will hamper the prosed upgrading of infrastructure.
The node can be summarized as follows (approximate):

<table>
<thead>
<tr>
<th>Density areas</th>
<th>% of node</th>
</tr>
</thead>
<tbody>
<tr>
<td>High density settlement area</td>
<td>45</td>
</tr>
<tr>
<td>Medium density settlement area</td>
<td>45</td>
</tr>
<tr>
<td>Low density settlement area</td>
<td>0</td>
</tr>
<tr>
<td>Un-developed area</td>
<td>10</td>
</tr>
</tbody>
</table>
7.2. **WASTEWATER**

7.2.1. **Key Issues from Infrastructure Status Quo Report**

The status quo report provides information on the current method of disposal and its implications on the rural areas of the Ethekwini Municipality. The following implications and key issues were deduced from the status quo report.

- Mismanagement and abuse of the urine diversion toilets poses health risks.
- Groundwater and soil contamination from informal septic tanks and soakaway systems.
- Septic tanks and soakaways are situated in locations where the soil conditions do not meet the acceptable percolation rate or the soakaways are saturated.
- Uncontrolled greywater disposal poses both a health risk to the community as well as risk to the environment.

7.2.2. **Concepts and Standards Responding to Population Area Densities**

Provision of basic sanitation to communities can be summarized as below:

- Improving the health and quality of the life of the community.
- Integrate development of communities into populations with basic sanitation.
- Protect the environment through adequate sanitation.
- Placing the responsibility of household sanitation into the hands of the associated households.

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

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

The main criteria for sanitation systems within a community can be summarized as below:

- Reliability
- Acceptability
- Appropriateness
- Affordability
- Sustainability

7.2.3. **Objectives of wastewater supply strategy**

**Levels of Service**

When determining the level of service for a particular area, factors such as occupancy densities, cost implications and terrain must be carefully scrutinized. The level of service will be determined during an in-depth analysis undertaken once the development guidelines for a certain node has been determined.

The levels of service are discussed below:

- **Level 1**
  - A privately owned Urine Diversion toilet.
- **Level 2**
  - A connection to the Municipal water borne sewerage reticulation system.
- **Level 3**
Where a municipal waterborne sewerage reticulation system is not available, an on-site privately owned sewage disposal system is permitted.

The following options were established by the EThekwini municipality as approved sanitation options for associated level of water supply:

- Water supply limited to 300 litre per day via a ground tank or yard tap, a UD toilet is the approved installation option.
- Water supply through a semi-pressure or full pressure water supply is provided, water borne sanitation is the only allowable option.
- Mixed service levels will be allowed subjected to:
  - The sanitation option matching the level of water supply available/implemented by the householder
  - Water supply system being able to sustain the level of water demand

The following factors must be considered while choosing a sanitation system:

- System should not be beyond the technical abilities of the community, operator and maintenance.
- System should not be beyond the community’s ability to meet capital and maintenance costs.
- Future upgrading should be considered (particularly the level of service of the water supply system).
- System should operate within acceptable limits despite misuse by community.
- System should require as minimal maintenance as possible.

Further investigation will be required once development within the identified nodes are established. The type of development within these nodes will influence the infrastructure improvements.

7.2.4. Wastewater Strategies for the EThekwini Rural Areas

The peri-urban nature of the study area is currently experiencing rapid growth and future growth is expected to continue at a similar rate. Therefore with an increasing population density and less space for future households, the level of service provided must be deemed to be the highest and consist of a water-borne sewer network.

Whilst most of the study area contains limited water-borne sewer, most of the peri-urban areas should approach to forming a strategy that can accommodate water-borne sewer. An in-depth investigation and analysis will be required once development within nodes are finalized. The following factors will provide guidance into determining the best suited improvement to existing infrastructure:

- Location and proximity to current bulk infrastructure
- Establish the capacity of existing wastewater treatment works, wastewater pumpstations and sewer outfalls
- Propose new potential sites for wastewater treatment works and pump stations
- Establish the availability of adequate water supply to areas that allow for water-borne sewerage
- Acknowledge the topography and geology of the area and deduce what challenges and constraints there are in implementing water-borne sewage

In medium dense and rural residential areas where there is on-site sanitation in the form of septic tank and soak away systems, the following is proposed in dealing with the negative implications that informal septic tanks and soak ways produce.
• Mapping areas within the study area where groundwater percolation rates are suitable for installing septic tank and soak ways.

• Informing households of the dangers of contaminating groundwater

• Provide households with adequate engineering designs of soak away systems such that they function properly and are not full.

The urine-diversion (UD) toilet is the most common form of waste disposal in the study area and is the preferred means of waste disposal for less densely populated settlements by the eThekwini Municipality according to the eThekwini Spatial Development Framework 2014/2015.

The pitfalls and negative implications of the urine-diversion toilet have been acknowledged and certain strategies have been deduced in order to maintain the current level of service. These strategies are listed below:

• Develop a framework whereby the UD toilets are serviced and maintained by the municipality

• Introduce measures where there is a municipal collection of faecal matter from Urine Diversion toilets for biomass energy production and the household residents have an incentive to participate in the process.

• Encourage homeowners to utilise and maintain by creating awareness about UD toilet operations.

It must however be noted that the above mentioned strategies are merely a guideline based on a generic approach to sanitation improvement. Each node will have to be treated individually with investigations undertaken in order to determine the specific characteristics within an identified node for an applicable strategy to be developed and implemented.

7.2.5. Wastewater Nodes for the EThekwini Rural Areas

Various development nodes were identified during the status quo stages. These nodes were selected on the basis of where possible development can lead to an uplifting of the community. These nodes are listed in tables 1, 2 and 3 within section 2.6.

The nodes were assessed with possible improvements listed for wastewater systems. The proposed improvements took into account the settlement densities associated throughout the study area. Proposed actions are given based on the different settlement densities.

Proposed improvements can be summarized as below:
First scenario: Associated with high density areas.

It is proposed that service level 2 be developed within high density areas. The highly dense settlements within certain areas could justify the initial capital investment associated with water borne sanitation. It is envisaged that individual households within these settlements must contribute, on a monthly basis, for the service being provided in order to make this scenario work.

It must however be noted that individual studies will be required to identify nodes. The topographical nature of the various nodes will contribute to water borne sanitation costs and feasibility.

The following costing can be associated with servicing high density areas with water borne sanitation. It is anticipated that the volume of waste water being generated by an individual household will be in the order of 500 litres per dwelling unit per day.

<table>
<thead>
<tr>
<th>Volume generated</th>
<th>500 l/du/day</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total household within high settlement densities</td>
<td>77 829 du</td>
</tr>
<tr>
<td>Thus the estimated amount of waste water run-off</td>
<td>38.91 Ml/day</td>
</tr>
<tr>
<td>Cost associated with upgrading/increasing the treatment capacity of a plant</td>
<td>R 11.25 Million per Ml increase</td>
</tr>
<tr>
<td>Cost associated with constructing a new treatment plant</td>
<td>R 12.5-15 million per Ml capacity</td>
</tr>
</tbody>
</table>

Further costs will be associated with constructing trunk, ryder and pumping mains. The exact extend of these costs can only be determined once a preliminary design has been undertaken on individual nodes. Estimate figures can be listed as follow:

| Reticulation and house connection construction cost | R 20 000 / du |
| Trunk/primary main construction cost | R 2 940 / m of main |

Second scenario: Associated with medium density areas.

Due to the lesser dense nature of these areas, water borne sanitation systems are merely proposed where existing treatment facilities are in close proximity. The rural nature of medium dense settlement areas does not support a level 2 service to be provided. With a substantial amount of land being available, due to the medium density of households, it will be proposed to supply a level 3 service to these areas.

With adequate land being available within these areas, sufficient space is available for the installation and proper operation of on-site sewage disposal systems.

As proposed above, medium settlement density areas need to be serviced either by full water borne sanitation networks or on site sanitation. Water borne sanitation costing can be broken down as listed below. The waste water generation is again taken as being 500 litres per dwelling unit per day.

<table>
<thead>
<tr>
<th>Volume generated</th>
<th>500 l/du/day</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total household within medium settlement densities</td>
<td>22 472 du</td>
</tr>
<tr>
<td>Thus the estimated amount of waste water run-off</td>
<td>11.24 Ml/day</td>
</tr>
<tr>
<td>Cost associated with upgrading/increasing the treatment capacity of a plant</td>
<td>R 11.25 Million per Ml increase</td>
</tr>
<tr>
<td>Cost associated with constructing a new treatment plant</td>
<td>R 12.5-15 million per Ml capacity</td>
</tr>
</tbody>
</table>
Further costs will be associated with constructing trunk, ryder and pumping mains. The exact extend of these costs can only be determined once a preliminary design has been undertaken on individual nodes. Estimate figures can be listed as follow:

<table>
<thead>
<tr>
<th>Reticulation and house connection construction cost</th>
<th>R 30 000 / du</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trunk/primary main construction cost</td>
<td>R 2 730/m of main</td>
</tr>
<tr>
<td>Ryder/secondary main construction cost</td>
<td>R 1 365/m of main</td>
</tr>
<tr>
<td>Pumping main construction cost</td>
<td>R 3 740/m of main</td>
</tr>
<tr>
<td>Pump station construction cost</td>
<td>R 4-5 Million per station (assumed 5-10 ML per day capacity)</td>
</tr>
</tbody>
</table>

The costs associated with converting rural dwelling units of medium settlement densities to on-site sanitation is estimated as follows:

- Septic tanks and soak away = R 25 000 – 30 000 / du

  - **Third scenario: Associated with low density areas.**

  It is proposed that a level 1 or 3 service be provided within these low density areas. The remote location and low density of these households does not allow huge capital expenditure associated with full water borne sanitation systems. On-site sewage disposal will be the viable option.

  The following costs can be associated with the above proposed levels of service. The remote location and low density settlement are factors that does not support substantial infrastructure investment currently. Costs associated with onsite sanitation and UD toilets are provided below:

  The costs associated with converting rural dwelling units of low settlement densities to on-site sanitation is estimated as follows:

| Septic tanks and soak away                     | R 25 000 – 30 000 / du |
| Costs associated with installing UD toilets   | R 13 700 / du |

The above summarized comments and recommendations were based on the identification of existing infrastructure within the various nodes or adjacent nodes. These recommendations are listed below for the various nodes, but are merely recommendation on possible improvements. An in-depth investigation and feasibility study will be required once the development strategy for a specific node was determined.
7.2.6. **Outer west study area**

- **Imbozamo**

  Situated within a remote and medium dense settlement area, the associated node requires substantial expenditure before a waterborne sanitation network can be implemented. The node could be serviced through the implementation of septic tank and soak away systems.

  The node doesn’t have an existing bulk water supply system which will rule out the possibility of waterborne sewage. As mentioned above, the viable option is the installation of septic tanks and soak away.

  The node can be summarized as follow (approximate):

<table>
<thead>
<tr>
<th>Density areas</th>
<th>% of node</th>
</tr>
</thead>
<tbody>
<tr>
<td>High density settlement area</td>
<td>0</td>
</tr>
<tr>
<td>Medium density settlement area</td>
<td>10</td>
</tr>
<tr>
<td>Low density settlement area</td>
<td>30</td>
</tr>
<tr>
<td>Un-developed area</td>
<td>60</td>
</tr>
</tbody>
</table>

- **KwaXimba**

  No treatment infrastructure exists within the node. A high settlement density within the node can justify the need for substantial infrastructure expenditure within the area. Waterborne sewer could be implemented within the node covering a vast area. The possibility of constructing a treatment plant within this node needs to be investigated comprehensively.

  The possibility of waterborne sewage will be possible once bulk water supply network are constructed. As mentioned in this report, the possibility of installing an isolated abstraction, treatment and supply network within this node will be viable.

  The node can be summarized as follow (approximate):

<table>
<thead>
<tr>
<th>Density areas</th>
<th>% of node</th>
</tr>
</thead>
<tbody>
<tr>
<td>High density settlement area</td>
<td>10</td>
</tr>
<tr>
<td>Medium density settlement area</td>
<td>20</td>
</tr>
<tr>
<td>Low density settlement area</td>
<td>30</td>
</tr>
<tr>
<td>Un-developed area</td>
<td>40</td>
</tr>
</tbody>
</table>

- **Ntukuso**

  The medium to high density within this node and surrounding areas could justify the need for a substantial expenditure into waterborne sanitation and treatment. No existing treatment facility is within close proximity of the node under investigation.

  As mentioned under the water supply within the associated node, a waterborne sewage network could be combined with the infrastructure within the adjacent node. As mentioned above, the infrastructure could reach the demand put forth by both Ntukuso and KwaXimba.

  The node can be summarized as follow (approximate):

<table>
<thead>
<tr>
<th>Density areas</th>
<th>% of node</th>
</tr>
</thead>
<tbody>
<tr>
<td>High density settlement area</td>
<td>10</td>
</tr>
<tr>
<td>Medium density settlement area</td>
<td>20</td>
</tr>
<tr>
<td>Low density settlement area</td>
<td>30</td>
</tr>
<tr>
<td>Un-developed area</td>
<td>40</td>
</tr>
</tbody>
</table>
- Kwa Sondela

Medium to high density populations within the node could support the need for a possible waterborne sewage network. The remote location of the node makes adequate septic tanks and soak away the viable option. Waterborne sewage must be considered if the area is allocated for extensive to domestic and commercial development.

Waterborne sewage is further hindered through the substantial expenditure required to install potable water within the area.

The node can be summarized as follow (approximate):

<table>
<thead>
<tr>
<th>Density areas</th>
<th>% of node</th>
</tr>
</thead>
<tbody>
<tr>
<td>High density settlement area</td>
<td>30</td>
</tr>
<tr>
<td>Medium density settlement area</td>
<td>30</td>
</tr>
<tr>
<td>Low density settlement area</td>
<td>10</td>
</tr>
<tr>
<td>Un-developed area</td>
<td>30</td>
</tr>
</tbody>
</table>

- Kwa Sondela 2

Further medium to high density population within the node might prove cost effective to combine both Kwa Sondela nodes into a single combined waterborne sanitation node. Capital expenditure for the proposed treatment and reticulation cost can be recovered over both nodes through propose revenue streams.

The node can be summarized as follow (approximate):

<table>
<thead>
<tr>
<th>Density areas</th>
<th>% of node</th>
</tr>
</thead>
<tbody>
<tr>
<td>High density settlement area</td>
<td>Unknown</td>
</tr>
<tr>
<td>Medium density settlement area</td>
<td>Unknown</td>
</tr>
<tr>
<td>Low density settlement area</td>
<td>Unknown</td>
</tr>
<tr>
<td>Un-developed area</td>
<td>Unknown</td>
</tr>
</tbody>
</table>

- Unknown (Cato Ridge)

The existing treatment plant within the node could be increased to accommodate an improvement of the waterborne reticulation within the node. The works could be increased to a sufficient capacity in order to comply with future development. The existing plant footprint is of such a size that expansion can be implemented based on a desktop study.

The node can be summarized as follow (approximate):

<table>
<thead>
<tr>
<th>Density areas</th>
<th>% of node</th>
</tr>
</thead>
<tbody>
<tr>
<td>High density settlement area</td>
<td>5</td>
</tr>
<tr>
<td>Medium density settlement area</td>
<td>10</td>
</tr>
<tr>
<td>Low density settlement area</td>
<td>0</td>
</tr>
<tr>
<td>Un-developed area</td>
<td>85</td>
</tr>
</tbody>
</table>

- Unknown (Inchanga)

An existing wastewater treatment plant is present within the project area. This plant can be increased in order to reach the required capacity set forth by the proposed waterborne sewage system. This proposed waterborne sanitation network will prove expensive due to the topographical nature of the node.

Revenue can be generated from the node since a high settlement density is present. This revenue can also be utilized in settling the initial capital cost associated with bulk water supply into the node.

The node can be summarized as follow (approximate):

<table>
<thead>
<tr>
<th>Density areas</th>
<th>% of node</th>
</tr>
</thead>
<tbody>
<tr>
<td>High density settlement area</td>
<td>90</td>
</tr>
<tr>
<td>Medium density settlement area</td>
<td>0</td>
</tr>
<tr>
<td>Low density settlement area</td>
<td>0</td>
</tr>
<tr>
<td>Un-developed area</td>
<td>10</td>
</tr>
</tbody>
</table>
The construction of waterborne sewage along with a treatment plant within the node will be very costly with minimal revenue being generated from the node. This is due to the low to medium settlement density located within the node. The construction of septic tanks and soak aways needs to be investigated further in future studies.

The node can be summarized as follow (approximate):

<table>
<thead>
<tr>
<th>Density areas</th>
<th>% of node</th>
</tr>
</thead>
<tbody>
<tr>
<td>High density settlement area</td>
<td>5</td>
</tr>
<tr>
<td>Medium density settlement area</td>
<td>80</td>
</tr>
<tr>
<td>Low density settlement area</td>
<td>5</td>
</tr>
<tr>
<td>Un-developed area</td>
<td>10</td>
</tr>
</tbody>
</table>

Two existing treatment plants are adjacent to the node under assessment. Both plants could be utilized to service the node. The initial capital cost could be recovered from the residential revenue stream. The proposed water reticulation network will facilitate the need for waterborne sewage.

The node can be summarized as follow (approximate):

<table>
<thead>
<tr>
<th>Density areas</th>
<th>% of node</th>
</tr>
</thead>
<tbody>
<tr>
<td>High density settlement area</td>
<td>60</td>
</tr>
<tr>
<td>Medium density settlement area</td>
<td>0</td>
</tr>
<tr>
<td>Low density settlement area</td>
<td>0</td>
</tr>
<tr>
<td>Un-developed area</td>
<td>40</td>
</tr>
</tbody>
</table>

An existing treatment plant within the node can be expanded to accommodate additional flow generated from a full waterborne sewage network. The existing treatment plant has a large footprint. The treatment capacity can be increased by optimizing the existing plant footprint.

The node can be summarized as follow (approximate):

<table>
<thead>
<tr>
<th>Density areas</th>
<th>% of node</th>
</tr>
</thead>
<tbody>
<tr>
<td>High density settlement area</td>
<td>75</td>
</tr>
<tr>
<td>Medium density settlement area</td>
<td>0</td>
</tr>
<tr>
<td>Low density settlement area</td>
<td>0</td>
</tr>
<tr>
<td>Un-developed area</td>
<td>25</td>
</tr>
</tbody>
</table>

No wastewater treatment facility is within the Nshongweni node. The node has a high settlement density which could be utilized to generate revenue for the associated infrastructure. The dense node could be utilized to generate revenue to subsidize the original capital expenditure for the proposed infrastructure. The proposed infrastructure will be in the form of waterborne sewer reticulation along with a treatment plant.

The node can be summarized as follow (approximate):

<table>
<thead>
<tr>
<th>Density areas</th>
<th>% of node</th>
</tr>
</thead>
<tbody>
<tr>
<td>High density settlement area</td>
<td>50</td>
</tr>
<tr>
<td>Medium density settlement area</td>
<td>0</td>
</tr>
<tr>
<td>Low density settlement area</td>
<td>10</td>
</tr>
<tr>
<td>Un-developed area</td>
<td>40</td>
</tr>
</tbody>
</table>
Nshongweni

The node under investigation is of high density. It is situated on various mountain crests surrounded by deep valleys. The option of constructing a single waterborne sewer network within the node will not be viable. Alternatively, the option of septic tanks and soak away needs to be investigated.

The node can be summarized as follow (approximate):

<table>
<thead>
<tr>
<th>Density areas</th>
<th>% of node</th>
</tr>
</thead>
<tbody>
<tr>
<td>High density settlement area</td>
<td>60</td>
</tr>
<tr>
<td>Medium density settlement area</td>
<td>0</td>
</tr>
<tr>
<td>Low density settlement area</td>
<td>0</td>
</tr>
<tr>
<td>Un-developed area</td>
<td>40</td>
</tr>
</tbody>
</table>

Shongweni Dam Tourism

No wastewater infrastructure in currently present within the node. The remote location of the node along with its topography make the option of waterborne sewage impractical and hugely expensive. The alternative option of septic tanks and soak away needs to be investigated further.

The node can be summarized as follow (approximate):

<table>
<thead>
<tr>
<th>Density areas</th>
<th>% of node</th>
</tr>
</thead>
<tbody>
<tr>
<td>High density settlement area</td>
<td>30</td>
</tr>
<tr>
<td>Medium density settlement area</td>
<td>0</td>
</tr>
<tr>
<td>Low density settlement area</td>
<td>20</td>
</tr>
<tr>
<td>Un-developed area</td>
<td>50</td>
</tr>
</tbody>
</table>

KwaNdengesi

Existing treatment facilities were constructed within the node. Bulk waterborne sewage reticulation networks can be constructed within the node. The existing plant capacity can be increased to accommodate the addition flow since the plant has a large footprint.

The node can be summarized as follow (approximate):

<table>
<thead>
<tr>
<th>Density areas</th>
<th>% of node</th>
</tr>
</thead>
<tbody>
<tr>
<td>High density settlement area</td>
<td>20</td>
</tr>
<tr>
<td>Medium density settlement area</td>
<td>5</td>
</tr>
<tr>
<td>Low density settlement area</td>
<td>20</td>
</tr>
<tr>
<td>Un-developed area</td>
<td>55</td>
</tr>
</tbody>
</table>

Dassenhoek

The highly populated node has an existing treatment plant. This plant can be upgraded in order to increase its capacity. Waterborne sewer could be constructed within the node with revenue generated from the high settlement density within the area.

The node can be summarized as follow (approximate):

<table>
<thead>
<tr>
<th>Density areas</th>
<th>% of node</th>
</tr>
</thead>
<tbody>
<tr>
<td>High density settlement area</td>
<td>80</td>
</tr>
<tr>
<td>Medium density settlement area</td>
<td>0</td>
</tr>
<tr>
<td>Low density settlement area</td>
<td>20</td>
</tr>
<tr>
<td>Un-developed area</td>
<td>0</td>
</tr>
</tbody>
</table>
3.5.2 North

- Tourism
Situated to the northern most part of the rural development area, the tourism node is within close proximity of the town of Tongaat. The existing treatment plant is available for use should waterborne sewer be implemented. The central Tongaat treatment plant is well developed and could be operating at max capacity. Expansion to this plant may be required in order to accommodate the additional inflow dependent on the size of the proposed development.

The node can be summarized as follow (approximate):

<table>
<thead>
<tr>
<th>Density areas</th>
<th>% of node</th>
</tr>
</thead>
<tbody>
<tr>
<td>High density settlement area</td>
<td>50</td>
</tr>
<tr>
<td>Medium density settlement area</td>
<td>0</td>
</tr>
<tr>
<td>Low density settlement area</td>
<td>50</td>
</tr>
<tr>
<td>Un-developed area</td>
<td>0</td>
</tr>
</tbody>
</table>

- Cottonlands
No treatment infrastructure is within the node. A new wastewater treatment plant will be required in order to accommodate all possible expansion into waterborne sewage.

The node can be summarized as follow (approximate):

<table>
<thead>
<tr>
<th>Density areas</th>
<th>% of node</th>
</tr>
</thead>
<tbody>
<tr>
<td>High density settlement area</td>
<td>Unknown</td>
</tr>
<tr>
<td>Medium density settlement area</td>
<td>Unknown</td>
</tr>
<tr>
<td>Low density settlement area</td>
<td>Unknown</td>
</tr>
<tr>
<td>Un-developed area</td>
<td>Unknown</td>
</tr>
</tbody>
</table>

- Tourism 1
Special care must be exercised on this node with it situated in close proximity of a water supply source. It will be recommended that a compact treatment plant be constructed to facilitate the treatment of all waterborne sewage.

The node can be summarized as follow (approximate):

<table>
<thead>
<tr>
<th>Density areas</th>
<th>% of node</th>
</tr>
</thead>
<tbody>
<tr>
<td>High density settlement area</td>
<td>0</td>
</tr>
<tr>
<td>Medium density settlement area</td>
<td>0</td>
</tr>
<tr>
<td>Low density settlement area</td>
<td>20</td>
</tr>
<tr>
<td>Un-developed area</td>
<td>80</td>
</tr>
</tbody>
</table>

- Osindisweni
The associated node has little development at present. It is anticipated that a substantial amount of development will occur since the surrounding areas are developed. It will be recommended this node be serviced utilizing septic tanks and soak away.

The node can be summarized as follow (approximate):

<table>
<thead>
<tr>
<th>Density areas</th>
<th>% of node</th>
</tr>
</thead>
<tbody>
<tr>
<td>High density settlement area</td>
<td>35</td>
</tr>
<tr>
<td>Medium density settlement area</td>
<td>20</td>
</tr>
<tr>
<td>Low density settlement area</td>
<td>5</td>
</tr>
<tr>
<td>Un-developed area</td>
<td>40</td>
</tr>
</tbody>
</table>
- Buffelsdraai

No existing treatment infrastructure is situated within the associated node. Adjacent nodes are also poorly developed but contains a substantial amount of development in the form of dwelling units. The possibility of constructing a treatment plant within this node needs to be investigated. Adjacent nodes could easily be serviced though the proposed infrastructure within this node.

The node can be summarized as follow (approximate):

<table>
<thead>
<tr>
<th>Density areas</th>
<th>% of node</th>
</tr>
</thead>
<tbody>
<tr>
<td>High density settlement area</td>
<td>5</td>
</tr>
<tr>
<td>Medium density settlement area</td>
<td>5</td>
</tr>
<tr>
<td>Low density settlement area</td>
<td>15</td>
</tr>
<tr>
<td>Un-developed area</td>
<td>75</td>
</tr>
</tbody>
</table>

- Senzokukhle

A vast area falls within this node. Medium to high densities are situated throughout the node. No infrastructure has been constructed within this node. The high occupancy within this node supports the need for adequate waterborne sewage along with the required treatment plants. This node could be serviced through the proposed infrastructure within the Umzinyathi Corridor node. This possibility is discussed further down.

The node can be summarized as follow (approximate):

<table>
<thead>
<tr>
<th>Density areas</th>
<th>% of node</th>
</tr>
</thead>
<tbody>
<tr>
<td>High density settlement area</td>
<td>5</td>
</tr>
<tr>
<td>Medium density settlement area</td>
<td>65</td>
</tr>
<tr>
<td>Low density settlement area</td>
<td>15</td>
</tr>
<tr>
<td>Un-developed area</td>
<td>30</td>
</tr>
</tbody>
</table>

- Inanda Dam Tourism

This area requires wastewater treatment facilities since it is situated in close proximity of a water source supplying a vast portion of the eThekwini population with potable water. Located on the banks of the Inanda dam, the node can be serviced with great difficulty. A separate treatment plant will have to be constructed within the node, or a bulk line/pumpstation will be required to transport wastewater to a treatment plant situated further way from the dam vicinity.

The node can be summarized as follow (approximate):

<table>
<thead>
<tr>
<th>Density areas</th>
<th>% of node</th>
</tr>
</thead>
<tbody>
<tr>
<td>High density settlement area</td>
<td>0</td>
</tr>
<tr>
<td>Medium density settlement area</td>
<td>20</td>
</tr>
<tr>
<td>Low density settlement area</td>
<td>50</td>
</tr>
<tr>
<td>Un-developed area</td>
<td>30</td>
</tr>
</tbody>
</table>

- Umzinyathi Corridor

The associated node does not have existing treatment infrastructure within the boundaries of its domain. This node is adjacent to various other nodes under investigation. All of these nodes has minimal or no wastewater infrastructure. The possibility of constructing a treatment plant within this node needs to be investigated. This proposed plant could supply a number of adjacent nodes with no infrastructure. Nodes Senzokukhle, Tourism RSS and Mpenjeni could be serviced via this plant.

The node can be summarized as follow (approximate):

<table>
<thead>
<tr>
<th>Density areas</th>
<th>% of node</th>
</tr>
</thead>
<tbody>
<tr>
<td>High density settlement area</td>
<td>35</td>
</tr>
<tr>
<td>Medium density settlement area</td>
<td>15</td>
</tr>
<tr>
<td>Low density settlement area</td>
<td>45</td>
</tr>
<tr>
<td>Un-developed area</td>
<td>5</td>
</tr>
</tbody>
</table>
- Mpenjeni
No infrastructure in present within this node. Following the discussion above, this node could be serviced through the construction of a treatment plant within the Umzinyathi Corridor node. These two corridors are adjacent and are within close proximity of one another.

The node can be summarized as follow (approximate):

<table>
<thead>
<tr>
<th>Density areas</th>
<th>% of node</th>
</tr>
</thead>
<tbody>
<tr>
<td>High density settlement area</td>
<td>50</td>
</tr>
<tr>
<td>Medium density settlement area</td>
<td>50</td>
</tr>
<tr>
<td>Low density settlement area</td>
<td>0</td>
</tr>
<tr>
<td>Un-developed area</td>
<td>0</td>
</tr>
</tbody>
</table>

- Tourism/RSS
Following the discussion above, this node could be serviced through the construction of a treatment plant within the Umzinyathi Corridor node.

The node can be summarized as follow (approximate):

<table>
<thead>
<tr>
<th>Density areas</th>
<th>% of node</th>
</tr>
</thead>
<tbody>
<tr>
<td>High density settlement area</td>
<td>0</td>
</tr>
<tr>
<td>Medium density settlement area</td>
<td>0</td>
</tr>
<tr>
<td>Low density settlement area</td>
<td>100</td>
</tr>
<tr>
<td>Un-developed area</td>
<td>0</td>
</tr>
</tbody>
</table>

- KwaNgolisi
No wastewater infrastructure is situated within the node under discussion. The node is located adjacent to the Inanda dam tourism node. Providing adequate wastewater treatment infrastructure within the node might prove beneficial by accommodating wastewater from the adjacent node.

The node can be summarized as follow (approximate):

<table>
<thead>
<tr>
<th>Density areas</th>
<th>% of node</th>
</tr>
</thead>
<tbody>
<tr>
<td>High density settlement area</td>
<td>0</td>
</tr>
<tr>
<td>Medium density settlement area</td>
<td>0</td>
</tr>
<tr>
<td>Low density settlement area</td>
<td>100</td>
</tr>
<tr>
<td>Un-developed area</td>
<td>0</td>
</tr>
</tbody>
</table>

- Molweni
Wastewater treatment infrastructure will be required within this node since it is one of the highly populated nodes. No existing treatment facilities are within close proximity making the possibility of providing a bulk supply line very costly.

The node can be summarized as follow (approximate):

<table>
<thead>
<tr>
<th>Density areas</th>
<th>% of node</th>
</tr>
</thead>
<tbody>
<tr>
<td>High density settlement area</td>
<td>80</td>
</tr>
<tr>
<td>Medium density settlement area</td>
<td>5</td>
</tr>
<tr>
<td>Low density settlement area</td>
<td>10</td>
</tr>
<tr>
<td>Un-developed area</td>
<td>5</td>
</tr>
</tbody>
</table>

- Waterfall
Situated adjacent to both the Molweni and KwaNgolisi nodes, the Waterfall node might prove to be the most cost effective means to treatment of wastewater from all three nodes. Limited expenditure will be required to transport the adjacent wastewater into the proposed treatment plant.
The node can be summarized as follow (approximate):

<table>
<thead>
<tr>
<th>Density areas</th>
<th>% of node</th>
</tr>
</thead>
<tbody>
<tr>
<td>High density settlement area</td>
<td>0</td>
</tr>
<tr>
<td>Medium density settlement area</td>
<td>50</td>
</tr>
<tr>
<td>Low density settlement area</td>
<td>50</td>
</tr>
<tr>
<td>Un-developed area</td>
<td>0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Density areas</th>
<th>% of node</th>
</tr>
</thead>
<tbody>
<tr>
<td>High density settlement area</td>
<td>0</td>
</tr>
<tr>
<td>Medium density settlement area</td>
<td>0</td>
</tr>
<tr>
<td>Low density settlement area</td>
<td>90</td>
</tr>
<tr>
<td>Un-developed area</td>
<td>10</td>
</tr>
</tbody>
</table>

### 3.5.3 South

- **Zwelibomvu**
  Situated to the northern boundary of the southern nodes, the node could be connected/serviced through either one of two existing treatment plants. Both Kwandengezi and Dassenhoek treatment plants are viable options. Both options require substantial amount of bulk pipeline construction along with increased treatment capacity.

The node can be summarized as follow (approximate):

<table>
<thead>
<tr>
<th>Density areas</th>
<th>% of node</th>
</tr>
</thead>
<tbody>
<tr>
<td>High density settlement area</td>
<td>0</td>
</tr>
<tr>
<td>Medium density settlement area</td>
<td>30</td>
</tr>
<tr>
<td>Low density settlement area</td>
<td>30</td>
</tr>
<tr>
<td>Un-developed area</td>
<td>40</td>
</tr>
</tbody>
</table>

- **External Node**
  Alternative solutions needs to be investigated for wastewater within this node. Substantial infrastructure construction within this node will not be viable since it is situated within a remote location of the development area.

- **Umbumbulu**
  No treatment plant exists within this node that could treat any waterborne sewage. With this node servicing a substantial area, the viability of constructing waterborne sewer is possible. Alternative solutions in the form of septic tanks and soak away needs to be investigated. The nearest treatment work is situated roughly 14km to the east. Difficult terrain are situated between the node and nearest treatment facility.

The node can be summarized as follow (approximate):

<table>
<thead>
<tr>
<th>Density areas</th>
<th>% of node</th>
</tr>
</thead>
<tbody>
<tr>
<td>High density settlement area</td>
<td>80</td>
</tr>
<tr>
<td>Medium density settlement area</td>
<td>20</td>
</tr>
<tr>
<td>Low density settlement area</td>
<td>0</td>
</tr>
<tr>
<td>Un-developed area</td>
<td>0</td>
</tr>
</tbody>
</table>

- **Inwabi**
  No existing wastewater treatment plant existing within this node. The possibility of utilizing infrastructure from adjacent nodes needs to be investigated. A proposed treatment plant within the tourism node could be a viable option. This option is discussed in more detail below.
Tourism
This node is situated between the Inwabi and Umlazi K nodes. No existing treatment plant is within either of these nodes. Being the center node of the three, a treatment plant within this node is the most viable option to service all wastewater inflow. The possibility of constructing a treatment plant needs to be considered.

Umlazi K
An existing treatment plant is located within the greater Umlazi. However, this plant is on the opposite side of Umlazi relative to Umlazi K section. The possibility of servicing this node through utilizing a plant situated within the tourism node needs to be investigated. This possibility is available as discussed above.

Folweni
An existing treatment plant is situated within the area. An expansion will be required since the existing plant footprint covers a very small area. The node of Nsimbini is situated adjacent and will look to utilize the treatment capacity of this newly expanded plant.

Nsimbini
This node is situated within an area where no existing plant is in operation. Infrastructure investment is required in order to transport the waterborne sewage to an adjacent treatment plant situated in Mfolweni. This plant is however very small in footprint and will require expansion in order to accommodate the additional inflow.
The node can be summarized as follow (approximate):

<table>
<thead>
<tr>
<th>Density areas</th>
<th>% of node</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>High density settlement area</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>Medium density settlement area</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>Low density settlement area</td>
<td>65</td>
<td></td>
</tr>
<tr>
<td>Un-developed area</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

- **Umlazi Y**

  Two existing treatment plants are located within relative close proximity of the node. Treatment plants located at Isipingo and KwaMakutha could be used to accommodate waterborne sewage inflow. These plants will have to be increased in capacity to accommodate the additional inflow. Further expenditure will be required on the supply lines since these nodes are separated by a substantial valley.

The node can be summarized as follow (approximate):

<table>
<thead>
<tr>
<th>Density areas</th>
<th>% of node</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>High density settlement area</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>Low density settlement area</td>
<td>85</td>
<td></td>
</tr>
<tr>
<td>Un-developed area</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

- **KwaMakhuta**

  An existing wastewater treatment plant is situated within the greater KwaMakutha area. This plant is very small in footprint with limited infrastructure present. This plant will have to be expanded in order to accommodate additional waterborne sewage inflow into the plant.

The node can be summarized as follow (approximate):

<table>
<thead>
<tr>
<th>Density areas</th>
<th>% of node</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>High density settlement area</td>
<td>Unknown</td>
<td></td>
</tr>
<tr>
<td>Medium density settlement area</td>
<td>Unknown</td>
<td></td>
</tr>
<tr>
<td>Low density settlement area</td>
<td>Unknown</td>
<td></td>
</tr>
<tr>
<td>Un-developed area</td>
<td>Unknown</td>
<td></td>
</tr>
</tbody>
</table>

- **Lovu**

  No existing treatment plant is located within the node. Large expenditure will be required in order to transport wastewater to an existing nearby treatment plant. This expenditure will be due to the node situated within a valley with a river and steep cliffs surrounding it. The possibility of an adequately sized treatment plant must be investigated.
ETHEKWINI RURAL STRATEGY

**o Umnini**

The node has no existing wastewater treatment plant located within its boundaries. Adjacent treatment plants are situated a substantial distance from the project node.

The node can be summarized as follow (approximate):

<table>
<thead>
<tr>
<th>Density areas</th>
<th>% of node</th>
</tr>
</thead>
<tbody>
<tr>
<td>High density settlement area</td>
<td>0</td>
</tr>
<tr>
<td>Medium density settlement area</td>
<td>60</td>
</tr>
<tr>
<td>Low density settlement area</td>
<td>30</td>
</tr>
<tr>
<td>Un-developed area</td>
<td>10</td>
</tr>
</tbody>
</table>

**o Umgababa**

The node is situated adjacent to Umnini node discussed above. Similar to Umnini, no existing treatment plant is located within this node. The viability of constructing a wastewater treatment plant within this node needs to be investigated. Should this plant be adequately sized, it will be able to provide treatment capacity to adjacent nodes. Both node Umnini as well as Umgababa Tourism could be serviced through this plant.

The node can be summarized as follow (approximate):

<table>
<thead>
<tr>
<th>Density areas</th>
<th>% of node</th>
</tr>
</thead>
<tbody>
<tr>
<td>High density settlement area</td>
<td>80</td>
</tr>
<tr>
<td>Medium density settlement area</td>
<td>20</td>
</tr>
<tr>
<td>Low density settlement area</td>
<td>0</td>
</tr>
<tr>
<td>Un-developed area</td>
<td>0</td>
</tr>
</tbody>
</table>

**o Umgababa Tourism**

No treatment facility is available within this node. This node is situated adjacent to the Umgababa node. As mentioned above, the construction of an adequate sized treatment plant within the Umgababa node, might prove viable to accommodate wastewater flow from this node as well.

The node can be summarized as follow (approximate):

<table>
<thead>
<tr>
<th>Density areas</th>
<th>% of node</th>
</tr>
</thead>
<tbody>
<tr>
<td>High density settlement area</td>
<td>90</td>
</tr>
<tr>
<td>Medium density settlement area</td>
<td>10</td>
</tr>
<tr>
<td>Low density settlement area</td>
<td>0</td>
</tr>
<tr>
<td>Un-developed area</td>
<td>0</td>
</tr>
</tbody>
</table>

**o Infracombe**

The node of Infracombe is surrounded by the Umkomaas River and the N2 highway. Two sewage treatment plants are adjacent to the area. These plants are the Umkomaas and Magabeni plant respectively. Substantial infrastructure expenditure will be required to utilize either one of these plants.

The node can be summarized as follow (approximate):

<table>
<thead>
<tr>
<th>Density areas</th>
<th>% of node</th>
</tr>
</thead>
<tbody>
<tr>
<td>High density settlement area</td>
<td>Unknown</td>
</tr>
<tr>
<td>Medium density settlement area</td>
<td>Unknown</td>
</tr>
<tr>
<td>Low density settlement area</td>
<td>Unknown</td>
</tr>
<tr>
<td>Un-developed area</td>
<td>Unknown</td>
</tr>
</tbody>
</table>

**o Magabeni**

An existing wastewater treatment plant lies within the greater Magabeni area. This treatment plant covers a substantial footprint. This large footprint provides adequate space for any increase which might be necessary to accommodate additional sewage inflow into the plant. This additional inflow will be directly related to the amount of households planned to be connected to the waterborne sewage network generated by improvements to this node.
The node can be summarized as follow (approximate):

<table>
<thead>
<tr>
<th>Density areas</th>
<th>% of node</th>
</tr>
</thead>
<tbody>
<tr>
<td>High density settlement area</td>
<td>45</td>
</tr>
<tr>
<td>Medium density settlement area</td>
<td>45</td>
</tr>
<tr>
<td>Low density settlement area</td>
<td>0</td>
</tr>
<tr>
<td>Un-developed area</td>
<td>10</td>
</tr>
</tbody>
</table>
7.3. **STORMWATER**

7.3.1. **Key Issues from Infrastructure Status Quo Report**
The implications on the rural areas that were deduced from the status quo report are as follows:

- Lack of stormwater infrastructure on district and gravel roads causes erosion and potential road failure
- Households located in the 1:100 year flood plains are at risk of being flooded
- Poor internal stormwater management within built areas causes erosion and damage to adjacent properties and infrastructure
- Deteriorating stormwater infrastructure such as damaged headwalls and manholes present high risks if they fail under severe flooding.

7.3.2. **Concepts and Standards responding to Population Area Densities**
The Guidelines for Human Settlement Planning and Design identifies the following goals for effective stormwater management:

- The protection of life and property from flood hazards.
- The improvement of the quality of life of the community.
- The preservation of the natural environment.
- To prevent loss of life and reduce damage to property by the runoff from frequent storms.
- To strive for a sustainable environment while pursuing economic development.
- Provide the optimum method for runoff control.

7.3.3. **Stormwater Management Principles:**
The following principles will govern the perspective on the management of stormwater within the study area.

- Flood plains should be protected and preserved to perform their natural stormwater conveyance and storage functions.
- The stormwater drainage system ('V' Drains, Open Channels etc.) should be designed to convey runoff in a controlled manner that will not adversely affect upstream, adjacent or downstream properties on watercourses.
- Watercourses should be inspected and maintained to control blockage, erosion and physical and chemical pollution.
- Individual developments should have stormwater drainage systems that are integrated with a master drainage plan.

7.3.4. **Storm water Strategies for the ETekwini Rural Areas**
Peri-urban areas are serviced mainly by good road networks consisting of mainly metropolitan and provincial roads which have existing storm water infrastructure. A policy of the ETekwini Municipality is that houses may not be constructed within the 1 in 100 year floodplain.

- Identify areas where there are households located within the 1 in 100 year floodplain and formulate mitigation measures in preventing further household being built in these areas and warning resident of the dangers of building in the floodplain.
- In accordance with the storm water management principles, in a specific high density areas create a master drainage plan for the area.
- Investigate the current drainage patterns and existing storm water infrastructure capacity.
For a certain area or spatial framework, an audit and review of dilapidated or failing storm water infrastructure including can present the following measures to prevent flooding and water ponding.

- Clearing of vegetation from headwalls
- Maintaining of road kerbs
- Clearing storm water manholes of debris and litter
- Asphaltling of district roads in order to provide better access to rural investment nodes as well as improving the overall infrastructure
- Provide better drainage to the district and gravel roads and create a more formal drainage environment.

7.3.5. Storm water Programs for the EThekwini Rural Areas

Erosion caused from flooding in households can be achieved by attenuating water from hardened surfaces through various rainwater harvesting measures and limit flooding inside dwellings.

A backlog in municipal services as well as funding for extra municipal workers allows for the involvement of the community in participating in certain programs such as alleviating overgrown vegetation from storm water features.

The program for storm water runoff control includes the aspect of sustainable development. It is essential in ensuring that storm water control incorporates conservation and development on equal terms.

The associated storm water drainage plan will include way to detain and retain storm water runoff. This can be achieved through integrated workings between detention ponds (roof top detention), overland flow (opposed to hydraulically efficient engineering conduits), maintaining pervious surfaces while reducing impervious structures/surfaces and maintaining vegetation cover.

Storm water runoff will be analyzed and assessed through the following technologies:

- Flood routing.
  - Utilizing hydraulic simulations that predict storm water runoff.
  - Predict hydrographs at nominated reaches in watercourses and drainage ways.
- Flood line determination.
  - Based on the routing of storm water through water course.
  - Capacity of natural channel is affected by the interaction of local features as well as the varying flow profile.
- Detention and retention facilities.
  - Detention facilities design to attenuate runoff.
- Outlets at storm water detention facilities.
  - Culverts.
  - Proportional weirs.
  - Improved inverted V-notch weir.
  - Spillway crests.

The following erosion protection measures can be implemented:

- Energy dissipation systems.
  - Widening the drainage way and decreasing flow will reduce the flow velocity.
  - Increasing the roughness of the drainage way.
- Transitions
  - Kerb inlet transitions
  - Culvert transitions
- Road drainage
  - Roads act as flood channels during severe storm events.
  - Sheet flow across the road surface must be avoided.
  - Channel flow must be restricted to the side of the driving surface.
  - Ponding of runoff on road surface must be minimized as much as possible.
7.3.6. **Storm water Nodes for the eThekwini Rural Areas**

The storm water runoff measures within the various nodes can be summarized as follows:

7.3.6.1. **Outer west study area**

The steep topographical nature of all nodes within the area results in a high erosion possibility. Roads will be constructed as storm water reticulation infrastructure. Gradients will be kept to a minimum. This will reduce the flow velocity and ultimately affect the erosion potential.

All road construction should be done to incorporate the natural contours of the various nodes. Roads should run parallel with the contours as far as possible. Adequate provision will be made where storm water should run off the road onto natural vegetation.

Sufficient provision should be made where roads run perpendicular to the contours. These roads should be constructed to operate as storm water channels in the cases when excessive rainfall is experienced.

7.3.6.2. **North**

As mentioned above, roads should be utilized as storm water drains in severe rainfall. Natural contours should be followed with minimal alignments running perpendicular to these contours.

The natural ground conditions within the northern areas of the study area requires additional protection. Storm water protection should be installed by means of gabion protection and drainage into natural water courses.

7.3.6.3. **South**

The final region of the greater development area is predominantly similar to the other. Ground conditions which are more robust against erosion will reduce the need for additional storm water protection works. The minimal protection works in the form of side drains and inlet structures should be provided.
7.4. ELECTRICITY

7.4.1. Key Issues
The following implications and key issues were deduced from site visits and inspections of the services in the study area:

- In the less densely populated rural residential areas, a large portion of the dwellings are without electrical services.
- There is Low Voltage reticulation in the Peri-Urban areas that is old and deteriorated. This poses a safety hazard and in addition the supply is unreliable. This reticulation is in need of upgrading or replacement.
- It is unlikely that Eskom will have sufficient system capacity to supply electrical services to all the rural residential areas that are without services, or to substantially more new dwellings that may be constructed in the foreseeable future.

7.4.2. Electricity Nodes for the eThekwini Rural Areas

7.4.2.1. North – Proposed Nodes
Majority of the proposed nodes in this area are situated in high density settlement areas or adjacent to them. In these areas there is sufficient electrical infrastructure and the dwellings are supplied with electrical services from the national grid. These nodes can therefore be supplied with sufficient electrical energy by the national grid as they are within reasonable distance from the network.

The nodes that are situated in the medium to low density settlement areas are in some cases remote from any electrical services and therefore require additional electrical infrastructure to supply these nodes with electrical energy. These nodes can be supplied from the national grid but would require significant extensions to the existing network, and the capital cost of this would be substantial. Where extensions to the existing network are not possible, alternative sources of electrical energy such as solar and wind generation should be considered.

7.4.2.2. Outer West – Proposed Nodes
The majority of the proposed nodes in this area are situated in the high density settlement areas or in the suburbs. These nodes can therefore be supplied with sufficient electrical energy by the national grid as they are within reasonable distance from the network.

There are a number of nodes in this area that are situated in the medium to low density settlement areas, in this case the electrical infrastructure will require significant extensions to the existing network to supply sufficient electrical services to the nodes in these areas. Where extensions to the existing network are not possible, alternative sources of electrical energy such as solar and wind generation should be considered.

7.4.2.3. South – Proposed Nodes
The majority of the proposed nodes in this area are situated in the high density settlement areas, in the suburbs or adjacent to them. These nodes can therefore be supplied with sufficient electrical energy by the national grid as they are within reasonable distance from the network.

In the South area there are nodes in low density settlement areas that are completely isolated from the national grid. The extension to the electrical network and installation of electrical infrastructure to supply these nodes with electrical services can be seen as unconventional as the capital costs behind this are substantial. In these areas dedicated hybrid solar and wind power generation should be considered, although having substantial capital cost, these installations have benefits on the environment and community.

7.4.3. Strategies and Programmes for the eThekwini Rural Areas
Approximately 50% of the study area can be classified as medium to high density Peri-Urban areas. In these areas the majority of the dwellings have electrical services. There is an adequate Medium Voltage network, with distribution from pole mounted transformer substations by means of Low Voltage overhead bundled...
conductors supported on wooden poles which also support the overhead service to dwellings.

There is however overhead distribution that is old and deteriorated, which is in need of replacement. The Medium Voltage network and Low Voltage distribution in these areas is provided by and maintained by Eskom. Eskom are currently in the process of carrying out an upgrade of the badly deteriorated reticulation in certain areas. This program needs to be rationalised so as to provide a more reliable and safe service to residents of the Peri-Urban areas.

Eskom have also integrated some general area lighting and road lighting to their distribution network in these areas. This general area lighting and road lighting is inadequate and therefore is in need of upgrading and extending to provide lighting of acceptable levels over a greater area. In upgrading the general area and road lighting, LED - energy saving light fittings/lamps need to be considered as they only consume a small percentage of power as compared to the standard Mercury Vapor light fittings/lamps currently in use. These LED lamps also have a greatly increased lamp life, which reduces the need for constant maintenance. This upgrade will provide improved security to these areas and reduce the probability of crime and theft of reticulation, which affects the reliability of electrical services and increases the need for maintenance.

The Peri-Urban areas incorporate a number of schools, clinics and commercial enterprises, which are in the main provided with electrical services. Dwellings in the Peri-Urban areas vary from wattle and mud structures, through to concrete block construction, to modern brick structures. There is a large number of the more developed brick structure dwellings within the study area that have solar water heating installed.

The installation of these solar water heaters should be encouraged for all dwellings that do not currently have them. This will then have the effect of reducing the demand for electricity, which will make additional power available to provide for new dwellings.

Prepaid meters are installed in majority of the dwellings, with Ready Boards provided for lighting and the connection of appliances. This system is universally applied in Peri-Urban areas and there would appear to be no reason to deviate from this practice. The prepaid meter system allows for residents to actively control the amount of electricity they consume.

These prepaid meters and ready boards still require periodic checks and maintenance where required, to maintain reliable and safe electrical services to the dwellings.

The remaining portion of the study area can be classified as Rural Residential areas. Most of the dwellings in these areas are remote from any Eskom network and therefore do not have any electrical services.

There is a need to provide electrical services in these areas, which will require significant capital expenditure to provide the required Medium Voltage network and Low Voltage distribution. Under present circumstances it is unlikely that Eskom has sufficient system capacity to provide electrical services to these areas, and it is unlikely that the capacity will be available for several years.

An electrical geyser is the highest consumer of electrical energy in a typical household, this makes having an electrical geyser in these rural areas unsuitable due to the running costs. The other factor which needs to be taken into consideration is the required water pressure for the electrical geyser, which is inadequate in majority of the study area. Other alternatives to heating water are the gas water heaters and the solar water heaters; which are currently in use in the more developed areas. Gas water heaters also require sufficient water pressure and in addition pose safety threats to these rural areas, therefore solar water heaters are the recommended strategy for heating water where the infrastructure permits, as they are isolated from the electrical distribution network and therefore don’t increase the electricity consumption of the dwelling.

In the rural residential areas, alternative methods to heating water is also practiced over the more conventional methods such as geysers. Residents of the rural residential areas use methods such as using a heating element in a bucket of water, or by using firewood to build a fire and heat a pot of water. By installing a solar water heater, this eliminates the electricity consumption of heating the water with a heating element, this will save the resident of the dwelling money and in turn
reduces the demand on the electrical system, aiding in the overall capacity of the electrical system.

The use of exposed heating elements also poses a risk of injury during operation. The safety risks and implications of using a heating element can be eliminated by the installation of solar water heaters. In the case where firewood is used to heat water, there are a number of disadvantages to using this method of heating water. Burning wood not only has a negative effect on the environment, but also poses health and safety issues in these rural residential areas. The installation of solar water heaters not only eliminates these implications but allows for a financial saving for the dwelling resident as the money used to buy firewood can now be saved.

Today the global solar water heating market is growing rapidly as hot water is increasingly seen as a fundamental aspect of modern hygiene and healthy living in society. Unfortunately, in many countries such as South Africa, significant barriers hinder the widespread implementation of solar water heating systems along with all the contributions to sustainable development they can make. The most inescapable barrier relates to the high cost of the solar water heating systems. In the study area where the price of these solar water heaters are beyond the reach of most people, the national government can be instrumental in lowering the capital cost of these systems. There are several routes the government can take to do this, such as directly providing a capital subsidy to the rural development sectors, which can be seen in projects implemented throughout the country.

The South African national government approved R33bn for renewable energy projects in 2013 which will generate 1.47 GW of clean energy into the national energy grid, which will therefore advance the economic growth and environmental protection of the country. The national government is encouraged to continue in granting subsidies for renewable energy projects in South Africa, and the implementation of these projects for sustainable energy systems on a smaller scale, such as the solar water heating systems should be in high consideration for the eThekwini rural areas.

The global deployment of renewable energy is expanding rapidly and is the recommended strategy to improve the electrical system capacity, in order to provide the required electrical services in these rural areas. Renewable energy programmes include implementing wind power farms on hill tops to take advantage of the terrain and winds in these areas. In addition solar power farms could be implemented. Whilst wind generators have a relatively small footprint, solar panel arrays required to produce meaningful amounts of power require large areas. There is however adequate space available for these installations in the vast open spaces of these rural areas. These wind and solar farms will also require to be made secure by means of security fencing as there is a high risk of theft.

There are several wind and solar power generation projects such as in the Eastern and Western Cape’s of South Africa, where intensive studies have provided evidence of the vast advantages of these clean sustainable energy sources. For the rural areas where these sustainable energy sources would be of a smaller scale and isolated from the main electrical grid, case studies such as one done by CSIR in 2009, have provided evidence that when comparing the outcomes of the case study with a South African sustainable development framework, these renewable off-grid electricity generation systems are not viable as the economics behind the implementation of renewable energy favour national grids.

The evidence against the viability of off-grid renewable energy does not eliminate the possibility of applying the renewable energy programmes previously stated, as the study area has the capability to implement these programmes in a larger scale, which will generate clean electrical energy into the national grid and therefore increase the capacity of the electrical system. This will allow for the increase in demand of electrical energy to the rapidly growing rural areas of eThekwini.

Residents of individual dwellings have the alternative option of a small scale dedicated solar power electrical generator, which would be used to charge a battery that can provide limited power to the dwelling. These small scale installations provide limited electrical energy sufficient only for lighting and small appliances, such as cellphone chargers and televisions. These small scale installations do not provide sufficient power for heating or cooking, therefore other methods for cooking such as gas is recommended. These system installations
require a high capital cost, which is beyond the reach of the dwelling residents, therefore these installations still require financial support from the government. These systems are also subject to theft, vandalism and require periodic replacement of batteries.

Renewable energy generation is not only a more reliable and resilient energy system, but has a number of benefits for rural development as well, such as improved public health and environmental quality. The renewable energy generation projects also have the ability to create some valuable job opportunities for people in regions with limited employment opportunities, this in turn increases local revenues and empowerment. The ability to be able to generate reliable and cheap energy can trigger economic development in these rural areas.
<table>
<thead>
<tr>
<th>Contrast of structures in the Peri-Urban areas</th>
<th>Prepaid Meter and Ready Board</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deteriorated Low Voltage Reticulation</td>
<td>Eskom LV overhead reticulation and road lighting</td>
</tr>
</tbody>
</table>
Dwelling with solar water heater

Pole mounted transformer substation

Eskom reticulation upgrade

Rural Residential areas without electrical services
8. INSTITUTIONAL FRAMEWORK

8.1. Key Approaches

Previous reports on this development of the rural development strategy have established that it is important to see eThekwini rural areas as unique in the sense that:

- Location within a Metro creates pressure in terms of densities as well as in terms of a need for quick and efficient connectivity to the urban nodes.
- Whilst rural areas are both a factor of population numbers/density and character of the environment (which would largely be less built), it is important to see the lifestyle aspect of rural life associated with KwaZulu-Natal – particularly because that is where work on the institutional issues is located. Traditional leadership, methods of land transfers, unique combination of land uses at household level are part of that lifestyle.

Because of this status quo there is an imperative to develop a sound institutional framework which is realistic and able to take cognisance of the territorial and institutional overlaps between indigenous governance and planning systems, on the one hand, and the municipal governance and planning system, on another hand. Unless this overlap is taken on board, and the related stakeholders have been canvassed, it will be difficult to realise the impact of any strategy that has been developed.

Good work has been done to ensure that various sectors project an awareness of what happens in the municipal landscape. However the actual management of the policies, thresholds and guidelines associated with each of these sectors will be possible when institutional framework that includes all stakeholders has been developed and formalised. In terms of institutional framework, three scenarios that are not mutually exclusive of each other were proposed. Their cascading applicability is related to the nature of rural character (socially and geographically). These scenarios were described as:

**Scenario 1** - A social capital approach: An approach of cross-cutting applicability with specific urgency in areas where the overlap between traditional community and municipal wards have created social confusion and governance void. It was described to entail:

...training of traditional leaders, farmers and community property associations on planning and land use issues. The basis of this would be work that already exists on planning tools and legislation such as the KZNPDA and SPLUMA. However this needs to be supported by work to translate the implications of these pieces of legislation into clear implications, including norms and standards for the rural area. This would need to be accompanied by complementary research that seeks to train government stakeholders on the nature of social organisation in rural areas, the primary issues in types of livelihoods that people need to practice there.

**Scenario 2** - A Planning/ Sectoral Equity Approach: Applicable where pressing planning controls need consideration, this emanating from density and spontaneous nodal status. It was described to entail:

[a need for] revisiting all planning thresholds for all sectoral areas of focus, [so that rural areas are serviced in a manner that is relevant to their context].

It also entails:

..... identifying units of operation as traditional authority areas, wards, or other planning units – so that the institutional framework devised is a feasible operational planning unit.
**Scenarios 3 - Prioritising the environment as the foundation sector/Ecology approach:** Applicable where a more environmentally sensitive approach is necessary, and where citizens and stakeholders in land management require to be mobilised towards an ecologically sensitive approach to development. It is described as:

- mounted on the one issue that is making the ‘rural’ physical space of countryside nature, preservation of areas of environmental sensitivity, and feasibility of substantial (and subsistence) agricultural livelihoods.

<table>
<thead>
<tr>
<th>INSTITUTIONAL APPROACH</th>
<th>CORE OBJECTIVE</th>
<th>STRATEGIC INTENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>A social capital approach</td>
<td>To resolve a situation where which the overlap between traditional community and municipal wards have created social confusion and governance void</td>
<td>• training of traditional leaders, farmers and community property associations on planning and land use issues</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• clear guidelines, including norms and standards, based on KZNPDZ and SPLUMA for the rural area</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• train government stakeholders on the nature of social organisation in rural areas, the primary issues in types of livelihoods that people need</td>
</tr>
<tr>
<td>Planning/ Sectoral Equity Approach</td>
<td>To respond to an urgent need for planning controls, a situation emanating from density and spontaneous nodal developments in previously-rural settings</td>
<td>• Developing LUMS for rural areas;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Sector departments looking at planning thresholds for various parts of the rural areas;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• identifying units of operation as traditional authority areas, wards, or other planning units – so that the institutional framework devised is a feasible operational planning unit</td>
</tr>
<tr>
<td>Ecology Approach</td>
<td>To mobilise citizens and stakeholders towards an ecologically sensitive approach to development. This approach purports to keep what is left of ‘rural’ in the Metro.</td>
<td>• Preserving some countryside nature of the rural area;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• protecting areas of environmental sensitivity; and</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• feasibility of substantial (and subsistence) agricultural livelihoods</td>
</tr>
</tbody>
</table>

Table 19: Institutional approaches
8.2. **Towards Operational Guidelines**

Firstly, it is important to emphasise that given the history of alienation between government and local institutions of governance in rural areas, care must be exercised not to ‘over-plan’ before engagement. Thus even though a certain level of research engagement was done for informed mapping of issues and relevant approaches, formal processes of engagement need to be exhaustive and inclusive when actual the institutional framework is done. Secondly, the three approaches outlined here not mutually exclusive of each other and in fact it is important to emphasise the following:

1) Social capital and mutual understanding of the previously alienated government and traditional institutions MUST be established
2) Environmental sensitivity and ecological intelligence must be cultivated through institutional mechanism capable of ensuring environmental sustainability
3) A need to be responsive to the needs of people in rural areas, to understand their lifestyle must be featured in a sector and LUMS approach that is able to plan and serve the rural areas at the same time
4) Rural areas have histories and political issues that require partners whose sense of discretion can cater for reasonable flexibility

What follows is an outline of the key stakeholders in the governance of rural areas and some of the activities that imply social capital, ecology, and planning approaches as may be necessary to emphasise in the establishment of an institutional framework with the municipality.
### 8.2.1. Key Players, Issues and Role of Municipality

<table>
<thead>
<tr>
<th>INSTITUTIONS</th>
<th>KEY ISSUES FOR INTERVENTION</th>
<th>ROLE OF MUNICIPALITY</th>
</tr>
</thead>
</table>
| **Traditional Councils** | • The need to make Traditional Council keep a map (mutually formulated by Municipal and TC stakeholders) and record of land uses.  
• The need to conscientise TCs on KZNPDA and LUMS  
• The need to conscientise expanding households of LUMS and planned land use | • Formulate and agree on a LUMS framework and local institutional framework to manage it  
• Urgent negotiation with TC and relevant headmen over critical areas of control (e.g. emerging nodes)  
• Establish a communication strategy involving the Community on LUMS conscious land transfers |
| **Local House of Traditional Leaders** | • The need to create synergise COGTA and eThekwini established Local Houses of Traditional Leadership  
• Establish maps of Traditional Communities – with LUMS  
• Establish maps of municipal wards LUMS to use in conjunction with Traditional Communities area maps  
• Negotiate between each TC and ward councillor the local institutional framework of land use management. This will entail resolution as to:  
  • What is the basic planning unit for purposes of LUMS  
  • Develop an outline of a simple process from a user perspective  
  • Develop a framework base to include other government stakeholders in the proactive planning  
  • Establish an institutional base from which key land stakeholders will see rural areas from a panoramic development perspective within eThekwini, thus encouraging linkages and sharing of resources where necessary. | • Synergise houses  
• Establish municipal maps and TC LUMS maps  
• Resolve whether municipal ward or Traditional Community Area will be the planning unit  
• Establish with amakhosi and ward councillors a local institutional framework where a combination of the three approaches outlined above are discussed and adopted for each planning unit |
| **Community Property Associations (CPAs)** | • The need to make CPA keep a map and record of land uses.  
• The need to conscientise CPA on KZNPDA and LUMS  
• The need to conscientise expanding households of LUMS and planned land use  
• To take stock of varied authorities on land and ensure a recognised local institutional framework for land transfers | • Formulate and agree on a LUMS framework and local institutional framework to manage it  
• Establish a communication strategy involving the Community on LUMS conscious land transfers |
<p>| <strong>Land ‘Owners’ within Traditional</strong> | • Cultivate a consciousness for planning and LUMS conscious land | • Establish a Communication Strategy involving the |</p>
<table>
<thead>
<tr>
<th>Community Area</th>
<th>transfers</th>
<th>Community on LUMS conscious land transfers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Develop a culture of recognition of a local LUMS institutional framework</td>
<td></td>
</tr>
</tbody>
</table>

| Private Land owners | Establish an awareness of LUMS for land in private ownership | |
|                     | Establish awareness on the obligation of Municipality to provide basic services for people on land (owners and tenants) | Share information on LUMS processes |
|                     | Share information on social development and importance of people-centred development |

| Ingonyama Trust Board | Negotiation on the imperative of formal planning approach in rural areas between municipality and ITB | |
|                      | MoA on mapping and establishment of LUMS plans for land under ITB | Initiate meeting with ITB on the significance for formal planning approach in rural areas – highlighting the urgency of this for the Metro |
|                      | Negotiation of possible institutional framework for management of LUMS at local level | Acting in accordance with mutual agreements towards discussion and resolving of issues for making LUMS practical |

Table 20: key roles
8.3. Illustrative cases

As hinted above, research team engaged with a sample of amakhosi on institutional issues and many issues were discussed which indicate the complexity of relationships between local government and traditional councils, but also opportunities to forge an institutional framework for appropriate planning attention. The following are illustrative discussed for illustrative purposes:

Case 1: EMaphetheni

EMaphetheni inkosi sits in development committees internal to EMaphetheni affairs, but also involving larger issues, specifically pertaining to road safety. He emphasised that his role as inkosi is to deal with matters that require attention on a daily basis as brought to him by izinduna (headmen) of his different traditional wards (izigodi), as well as matters pertaining to external stakeholders who come to bring to his attention issues relating to his area. On the latter an example was given of a meeting (which took place on the same day as the eThekwini research team met inkosi) with different members of the education sector pertaining to a proposed merger of certain schools. Such things cannot wait and require the highest authority of the EMaphetheni to facilitate. However, on land related issues particularly on land allocation EMaphetheni has an established system of land allocation through headmen of various izigodi. There are procedures that are followed on land allocation which require that once the matter is before the headmen:

* The newly allocated household is checked for a good social record. If this family to be allocated land comes from outside of the area a letter from the authority from where the household departs is required. Once all good standing checks are done, there are procedures of land allocation that involve neighbours and proper identification of site

* If the request for use of land is for business (e.g. there are issues related to mining of quarry and sand EMaphetheni), inkosi or headmen should also be involved. However there have been cases where people have gone through councillors and the traditional council was called to intervene only when there were problems with some citizens questioning the rights given to an entrepreneur/company to mine in their vicinity. This points to lack of following protocol and that sometimes councillors recognise TCs only at their discretion. It was the view of inkosi that such issues as mining of quarry require firmer and clearer procedures that involve, not only the TC but also the ITB, and other departments.

There are 8 izigodi (traditional wards) EMaphetheni. These are: Mgangeni (induna: Gwala); Bhekuphiwa (induna: Gwala); Ngcukwini (induna: Nojiyeza); Vutha (induna: Mabaso); Mbozamo (induna: Gwala); Matata (induna: Buthelezi); Mqeku (induna: Gwala); Nkangala (induna: Gwala). Most of them are well run according to well-established local procedures of land allocation through the headmen. There are areas where density is becoming an issue, where it is not clear how some people have been given rights to land use. An area called Mkhukhwini is becoming such a problem. Most of EMaphetheni land falls under Ward 2. There are boundary issues with the neighbouring ward where Mkhukhwini is located.

On the day when the interview was done, EMaphetheni Traditional Court was also a site of a pension pay out. There was a pension market with women selling outside on the grass along the road. Access to the clinic and a local store was not easy through driving.

EMaqadini

Amaqadi has many wards which are also administered at local level by headmen (izinduna). Headmen are responsible for land allocation and they sit on the procedure for land allocation. Like what was described elsewhere land allocation involves several steps which begin with social assessment. This social assessment either entails that the headmen finds out which main household the newly established homestead is an off-shoot of, or that a letter from the authority from where the household departs is received. Once social assessment has been done the process begins to be ‘technical’ – in that it begins to be about checking whose land is it that is being given, the previous owner is happy to give the land and that neighbours are involved to clearly delineate boundaries. In EMaQadini a
system of placing pegs has now been devised because there is densification and it is no longer easy to simply use natural identifiers of boundary.

Densification is actually problematic in certain areas. A discussion of areas such as eMachobeni and eMtshebheni ensued to illustrate how TCs need to partner with the municipality to manage influx of people and lack of orderly way of allocation of land. It has become fuzzy who the authorities behind land allocation are in some of the areas. Engagement with inkosi and some of his headmen stressed the need for co-operation with the municipality of planned development. There is a complex overlap between municipal boundaries and wards of the municipality and an institutional framework that illustrates roles clearly on allocation and development issues is required. From the perspective of the Traditional Council a map is required to guide what takes place on the land. There were previous attempts at sourcing it. Examples of various traditional wards under different municipal wards include:

* Mkhupulangwenya under induna Mdima - under ward 44 (councilor Msani)
* Nanda Mission under induna Magwaza – a section is under Ward 3, another section is under ward 44
* Amatabetulu under induna Hlongwa – under Ward 3
* Phola under induna Ngcobo – under Ward 56

Amaqadi area has many traditional wards (izigodi). Some of the wards were cited using the names of the councilors. However Ward 3 seems to incorporate a lot of wards with from Amaqadi.

Many issues related to amakhosi and Traditional Councillors relate to lack of understanding of what it means to run traditional communities. Traditional Administration Centres that were visited were busy with people who have come to report urgent social matters that inkosi and headmen had to resolve, as well as officials from various agencies who would have come to negotiate certain issues with inkosi. There is a need to take stock of the various bodies in which TC members sit to represent communities so that proper links between traditional councils and other institutional bodies are forged. This will entail a land focused planning role for the municipality that can take advantage of institutional linkages offered by current systems in rural areas.

8.4. WORKING AGREEMENT WITH TRADITIONAL COUNCILS

A working relationship with the traditional councils should therefore inform the protocol:

Such agreement should spelt out:

1. Preamble
2. Sub-regional interaction
   1. Provisions of the Municipal Structures Act
   3. Current arrangements at Municipal level
   4. Future cooperation
3. Local Traditional Structures
   1. Definition Of Area
   2. Area Development Vision
   3. Definition Of Traditional Structure
   4. Development Applications
      i. Types of applications
      ii. Route form
      iii. Process
      iv. Consultation of neighbours
5. Steering Committee
   i. Participation
      1. Traditional authority
      2. Municipal Councillor/s
      3. Ward Committee
      4. Chairing and secretariat
      5. Powers and functions
   ii. Secretariat
4. Role And Process To Ingonyama Board
   1. Relevant forms
5. Monitoring and policing.
9. IMPLEMENTATION FRAMEWORK

9.1. Introduction

The Rural Economic Development Strategy advocates for the establishment of Isidleke Sezomnotho ("nests for economic development") in order to spatially restructure rural eThekwini. The approach presented in this section provides basic guidelines for:

- Actively transforming colonial and apartheid created spatial structures in the rural areas;
- Introducing relevant / appropriate activities preferably linked to identified development or economic drivers; and
- Establishing systems to support specifically rural economic development through a focus on the concept of promoting local income circulation.

The spatial system will service the different residential, agricultural and natural landscapes located around them.

The successful implementation of the economic strategies and programmes is dependent on the successful establishment of a series of well located rural nodes in eThekwini. It is maintained that, based on the literature considered and experience in the field, sustainable rural nodes cannot be created through short term public sector capital injections alone (e.g. Dududu, Ndwedwe etc.), but rather that a management system needs to be in place to support the growth of rural nodes over time. It is accepted that, with such a system in place, the rate at which node grow will vary.

This section proposes the establishment of a system to support the growth of rural nodes in eThekwini. The system is aimed at creating capacity within the Municipality to pro-actively grow new rural towns and villages. The starting point for the establishment of the system is an acknowledgement that a sustainable rural node will at least accommodate vibrant activity in terms of:

- Informal and / or formal retail activity;
- Public and private sector services; and
- Production and service industries.

The ultimate goal is to establish at least a service point (in some areas towns and villages) within each of the larger settlements in eThekwini that will provide local residents with access to an appropriate level of commercial and social services, as well as presenting opportunities for enterprise / economic development, within walking distance (considering current rural densities this will be five kilometres or one hour of walking).
9.2. Local government as a facilitator

It is suggested that local government is ideally placed to facilitate the establishment of the system to grow rural nodes. Firstly, local government is well-positioned to both interact with communities and line function departments on their respective levels. In some wards development committees has already been established and are operational. These committees could be viewed as the local implementing agency.

Secondly, eThekwini Municipality has established contact with the line function departments. For the establishment of a functional nodal development system interactions should take place on a regular basis and again it is suggested that local government is ideally placed for this purpose.

Thirdly, the developmental role, as well as the coordinating role, eThekwini is required to fulfil in terms of current policy, clearly mandates the municipality to undertake such a facilitation function. It is not necessarily envisaged that new capacity must be established for the purpose, but rather that existing activities in the municipality be refocused in order to ensure that implementation do occur. It is, however, suggested that dedicated capacity for this function should be established in eThekwini. This capacity could be established either in the Strategic Spatial Planning Section or the Economic Development Unit.

Successful nodal development systems in eThekwini has not been previously implemented in KwaZulu-Natal. The setting up of such a system in eThekwini must therefore be viewed as a pilot and needs to be flexible enough to respond adequately to the various challenges that may be experienced in operationalising the system.

9.3. Challenges for implementation

The establishment of a nodal development system in eThekwini faces a number of challenges. A number of the more obvious challenges to be responded to are reflected below:

- Commitment of government departments and service providers: Securing commitment from the key government and non-government service providers to support and align with a periodic service delivery system may prove difficult. After nearly 15 years of integrated development planning there has only been limited buy-in from government departments into the concept. In the longer term it is envisaged that strong support for the approach on a political level will be required in order to facilitate implementation.

- Large potential number of rural nodes: A large number of rural settlements are located in rural eThekwini. Nodal development will therefore have to be carefully coordinated. This will contribute to the potential sustainability of the system.

- Current low levels of production: Levels of production in the rural areas of eThekwini is generally low. Raising production levels is essential for improving local income circulation. In order to improve levels of local income circulation, production levels will then have to be improved.

- Lack of access to cash in rural areas: Cash can generally not be accessed in rural areas and most rural households are dependent on trips to formal towns for access to pensions, ATMs, financial institutions or micro-loan providers. The success of any local service initiatives will be dependent on the ability of the initiative to attract ATMs, mobile ATMs, pension payment points and/or micro lenders to the area, as well as potentially the establishment of community based savings schemes.
• Rural transport movement patterns: Rural transport systems in eThekwini are currently geared to take people from their place of residence to formal towns, viz. Verulam, Tongaat, Pinetown, Isipingo etc. If a rural nodal system is in place it will be necessary to reorganise the system to allow for intra-settlement and inter-node transport of people, goods and services.

• Rural perceptions: Cost and quality of products purchased is extremely important in decision-making as to where goods will be purchased. There exists in some rural areas a perception, often not correct (this is a generalisation), that better quality goods and services can be accessed in formal towns.

• Municipal resources: Municipal resources, both human and financial, are limited specifically for the implementation of new programmes. Existing resources will have to be redirected and / or additional funding will have to be sourced for the implementation of the eThekwini Rural Node Growth System.
9.4. THE STAKEHOLDERS

9.4.1. The Facilitator

The eThekwini Municipality, through a specifically appointed facilitator, will be responsible for facilitating the implementation of the system. It is anticipated that the facilitator position will be a permanent position in a relevant Department (preferably the Economic Development Unit).

The facilitator will have to be an individual that can communicate effectively with communities, government service providers and the non-governmental sector. Strong project management capabilities will be essential for this position. Initially, as this is viewed as a pilot initiative, the support of a development planning consultant (private sector service provider) could add value to the process. The focus of the private sector service provider must, however, be on providing support, and not on managing the system on behalf of the municipality, as this will not be financially feasible over the long term.

As facilitator, one of the most important functions of eThekwini, will be the sourcing of funding for the setting up and the management of the services system. As the system could potentially be a provincial pilot the possibility of sourcing funding for implementation from the following departments should receive priority:

- Department of Cooperative Governance and Traditional Affairs (responsible for the preparation of Spatial Planning Guidelines promoting the concept of periodic service points);
- Department of Economic Development, Tourism and Environmental Affairs (previously allocated funding for testing the feasibility of various trading centres and business hubs in rural nodes);
- Department of Land Reform and Rural Development (focussing on various approaches to supporting rural development); and
- Department of Agriculture and Rural Development (focussing on various approaches to supporting rural development).

9.4.2. The service providers

The list of service providers will be developed and amended as implementation of the nodal growth system progresses. A list of the stakeholders / service providers that could play a significant role in the establishment of periodic service points and permanent nodes will include:

- eThekwini Municipality
- Government Departments (making direct use of service points)
- Department of Agriculture, Environmental Affairs and Rural Development
- Department of Social Welfare
- Department of Health
- Department of Home Affairs
- Department of Education (focus on shared facilities, special needs schools etc.)
- Government Departments (supporting settlement service system as part of development programmes)
- Department of Economic Development, Tourism and Environmental Affairs
- Department of Rural Development and Land Reform
- Department of Cooperative Governance and Traditional Affairs
- Government Agencies
- South African Post Office
- South African Social Security Agency
- Seda (Small Business Development Agency)
- Private sector
- Major retailers
- Small retailers
- Informal sector
- Financial institutions
- NGOs
- e.g. SaveAct
9.4.3. The local community

Involvement of the community in the establishment and operation of nodes is viewed as key to the ultimate success of the programme. It is recommended that the community will initially be represented by (where existing) already established development committees and in the longer term by a node / market committee established specifically for this purpose.

The community can be involved with and benefit from the market on a number of levels:

- Overall management of the periodic facility (including market and service point);
- Management of the nodal area;
- Trading in the node or at periodic market (it is recommended that some areas of the trade be reserved for the community);
- Buying at the market;
- Accessing services at the periodic facility; and
- Other processing and marketing activities that may potentially be linked to the node.

It is envisaged that the local community can potentially have full control of the node, including the funds generated through the activities at the node, the allocation of space at the service point / market, the management of the facility, the maintenance of the facility and the further development of the facility.

9.5. KEY PROJECTS

The following table presents key projects:
## ETHEKWINI RURAL STRATEGY

**PROGRAMME**

<table>
<thead>
<tr>
<th>PROGRAMME</th>
<th>SUB-PROGRAMME (include awareness, new projects, training)</th>
<th>PROJECT DESCRIPTION</th>
<th>ENVISAGED ACTIVITIES</th>
<th>OUTCOME</th>
<th>LOCATION GPS COORDINATES</th>
<th>VALUE /FUNDING</th>
<th>SOURCE OF FUNDING</th>
<th>PROJECT CHAMPION</th>
<th>PERIOD</th>
<th>LIST ACTIVITIES TO UNLOCK THE PROJECT/PROJECT ACTION PLAN</th>
</tr>
</thead>
<tbody>
<tr>
<td>PLANNING</td>
<td>LOCAL AREA PLANS</td>
<td>Preparation of plans covering defined areas</td>
<td>Plan incorporating all planning disciplines, e.g enviro, social, services, economic etc</td>
<td>LAP</td>
<td>All subregional areas particularly uMgababa/ uMnini Umbumbulu Inchanga uMzinyathi KwaXimba</td>
<td>R600 000 per LAP area</td>
<td>Ethekwini Municipality</td>
<td>Framework Planning</td>
<td>3 years</td>
<td>Identify primary school backlogs based on available facilities</td>
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<tr>
<td></td>
<td>NODAL PRECINCT PLANS</td>
<td>Preparation of plans covering all nodes and surroundings</td>
<td>Plan incorporating all planning disciplines, e.g enviro, social, services, economic etc</td>
<td>Precinct Plan</td>
<td>Zwelibomvu KwaNgcolosi Ntshongweni KwaSondela Buffelsdraai Cottonlands Matabetule Senzokuhle</td>
<td>R600 000 project</td>
<td>Ethekwini Municipality</td>
<td>3 years</td>
<td>Identify secondary school backlogs based on available facilities</td>
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<tr>
<td>SOCIAL</td>
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<td></td>
<td></td>
<td>Map showing existing Primary school</td>
<td>Department of Education</td>
<td>Inkosi/ Izinduna /Councillor</td>
<td>3 Years</td>
<td>Develop a business plan to be submitted to Department of Education</td>
<td></td>
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<tr>
<td></td>
<td>Primary schools to be accessible within 1.5 - 2 kilometres</td>
<td>GIS survey schools to assess accessibility / Map up walking distances to school</td>
<td>Map showing existing Secondary school</td>
<td></td>
<td></td>
<td>Department of Education</td>
<td>Inkosi/ Izinduna /Councillor</td>
<td>3 Years</td>
<td>Identify secondary school backlogs based on available facilities</td>
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<td></td>
<td>Secondary Schools with 5 kilometre</td>
<td></td>
<td></td>
<td></td>
<td>Business plan/ Architectural plan</td>
<td>R 8 000 000.00</td>
<td>Department of Education</td>
<td>Inkosi/ Izinduna /Councillor</td>
<td>3 Years</td>
<td></td>
</tr>
<tr>
<td></td>
<td>FURTHER EDUCATIONAL FACILITIES</td>
<td>Stakeholder engagement to get support / identify suitable site/ FET college planning design/ business plan</td>
<td>Area layout for proposed sites</td>
<td></td>
<td>see planning</td>
<td>Ethekwini Municipality</td>
<td>Inkosi/ Izinduna /Councillor</td>
<td>1 Year</td>
<td>Formulate worship site allocation policy</td>
<td></td>
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<tr>
<td></td>
<td>NEW WORSHIP FACILITIES</td>
<td>To provide vacant sites for worship purposes for future allocation</td>
<td>Develop a criteria for allocation of worship sites /GPS coordinates</td>
<td>Business plan</td>
<td>R 8 000 000.00</td>
<td>Department of Health</td>
<td>Inkosi/ Izinduna /Councillor</td>
<td>3 Years</td>
<td>Stakeholder engagement to secure buy in/ develop business</td>
<td></td>
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**ETHEKWINI RURAL STRATEGY**
<table>
<thead>
<tr>
<th>PROGRAMME</th>
<th>SUB-PROGRAMME (include awareness, new projects, training)</th>
<th>PROJECT DESCRIPTION</th>
<th>ENVISAGED ACTIVITIES</th>
<th>OUTCOME</th>
<th>LOCATION GPS COORDINATES</th>
<th>VALUE /FUNDING</th>
<th>SOURCE OF FUNDING</th>
<th>PROJECT CHAMPION</th>
<th>PERIOD</th>
<th>LIST ACTIVITIES TO UNLOCK THE PROJECT /PROJECT ACTION PLAN</th>
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<tr>
<td>NEW HEALTH FACILITIES</td>
<td>Regional hospital, site to be allocated</td>
<td>Identify suitable site/ hospital plan</td>
<td>Business plan</td>
<td>R 7 500 000.00</td>
<td>Department of Health</td>
<td>Inkosi/ Izinduna /Councillor</td>
<td>3 Years</td>
<td>Setup a health subcommittee made up of cllr and Inkosi/ Izinduna</td>
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<td></td>
<td>fully functional clinics</td>
<td>Develop a clinic plan /Collect GPS coordinates /assess site suitable</td>
<td>Site plan with GPS coordinates</td>
<td>R 1 800 000.00</td>
<td>KZN Depart. Sports and Recreation</td>
<td>Inkosi/ Izinduna /Councillor</td>
<td>3 Years</td>
<td>Develop a business plan to be submitted to Depart of Sports and Recreation</td>
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<tr>
<td>NEW RECREATIONAL FACILITIES</td>
<td>sportfields</td>
<td>Identify site/ assess site suitability /draw a proposed plan</td>
<td>Site plan with GPS coordinates</td>
<td>R 750 000.00</td>
<td>KZN Depart. Sports and Recreation</td>
<td>Inkosi/ Izinduna /Councillor</td>
<td>2 Years</td>
<td>Same as above</td>
<td></td>
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<tr>
<td></td>
<td>swimming pools</td>
<td>Identify site/ assess site suitability /draw a proposed plan</td>
<td>Layout and Multi-Purpose Centre plan</td>
<td>R 7 500 000.00</td>
<td>Dept. Of Public Works</td>
<td>Inkosi/ Izinduna /Councillor</td>
<td>3 Years</td>
<td>Develop a business plan to be submitted to Depart of Public works</td>
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<tr>
<td>NEW PUBLIC FACILITIES</td>
<td>Multi-Purpose Centres</td>
<td>Develop layout/ assess site suitability /develop a plan</td>
<td>Layout and Multi-Purpose Centre plan</td>
<td>R 6 000 000.00</td>
<td>Dept. Of Public Works</td>
<td>Inkosi/ Izinduna /Councillor</td>
<td>3 Years</td>
<td>Develop a business plan to be submitted to Depart of Public works</td>
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<td></td>
<td>Thusong Centre</td>
<td>Develop layout/ assess site suitability /develop a plan</td>
<td>Communication plan</td>
<td>R 0.00</td>
<td>South African Police Services</td>
<td>Inkosi/ Izinduna /Councillor</td>
<td>2 Years</td>
<td>Coordinates stakeholder forum to support the request to increase the operation of the police Station.</td>
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<tr>
<td>NEW SAFETY FACILITIES</td>
<td>Police Station to extent working hours, increase resources and increase capacity.</td>
<td>Police Forum to communicate with Regional Police structures</td>
<td>Need assessment</td>
<td>R 400 000.00</td>
<td>Department of Social Development</td>
<td>Inkosi/ Izinduna /Councillor</td>
<td>1 Year</td>
<td>Identify interested stakeholders /assess capacity of stakeholders to initiate the project</td>
<td></td>
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<tr>
<td>PROGRAMME</td>
<td>SUB-PROGRAMME (include awareness, new projects, training)</td>
<td>PROJECT DESCRIPTION</td>
<td>ENVISAGED ACTIVITIES</td>
<td>OUTCOME</td>
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<td></td>
<td>Orphanage looking after orphans and vulnerable children</td>
<td>Assess the need for orphanage</td>
<td>Fire station plan</td>
<td>R 800 000.00</td>
<td>Ethekweni Municipality</td>
<td>Inkosi/ Izinduna /Councillor</td>
<td>2 Years</td>
<td>Communicate the plan with stakeholders</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Fire Station</td>
<td>Develop a plan /assess accessibility</td>
<td>Layout plan</td>
<td>R 500 000.00</td>
<td>Depart. Of Agriculture and Rural Development</td>
<td>Inkosi/ Izinduna /Councillor</td>
<td>3 Years</td>
<td>Develop a business plan to be submitted to Depart of Agriculture and Rural Development</td>
<td></td>
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</tr>
</tbody>
</table>
|           | Facilitation process resulting on the signed plan outlining roles and responsibilities in rural development | • Identification of key stakeholders  
• Drafting of protocols plan  
• Facilitation of buy in  
• Signature of plan | Signed Plan outlining roles and responsibilities in rural development | 500000 | Community Participation | 1 year | Allocate a budget / develop a brief /appoint consultants |
<p>|           | capacity building workshops targeting ward and traditional structures | Undertake capacity building need assessment / develop capacity building programe | A plan with specific target group | R 250 000.00 | Ethekweni Municipality | Ethekweni Planning and Environmental Management | 2 Years | Same as above |
|           | capacity building workshops targeting broader stakeholders across different structures | Separate capacity building needs into target groups e.g. Leadership or broader stakeholders | Workshop report and attendance register | R 100 000.00 | Ethekweni Municipality | Ethekweni Planning and Environmental Management | 2 Years | Same as above |</p>
<table>
<thead>
<tr>
<th>PROGRAMME</th>
<th>SUB-PROGRAMME (include awareness, new projects, training)</th>
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<th>OUTCOME</th>
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<th>PERIOD</th>
<th>LIST ACTIVITIES TO UNLOCK THE PROJECT /PROJECT ACTION PLAN</th>
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<tbody>
<tr>
<td></td>
<td>CAPACITY BUILDING FOR MANAGEMENT OF COMMUNITY FACILITIES</td>
<td>Two workshops targeting ward and traditional structures to develop a collective plan to manage community facilities jointly</td>
<td>Develop training material responding to the need</td>
<td>Implementation plan</td>
<td></td>
<td>R 120 000.00</td>
<td>Ethekwini Municipality</td>
<td>Ethekwini Planning and Environmental Management</td>
<td>2 Years</td>
<td>Allocate a budget / develop a brief / appoint consultants</td>
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<tr>
<td></td>
<td>DEVELOPING POLICIES</td>
<td>Develop two policies, 1) worship site allocation, 2) collective management of community facilities</td>
<td>Stakeholder engagement/ confirm need / identify strategies to rectify problem / policy formulation</td>
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<tr>
<td></td>
<td>Wetland Rehabilitation</td>
<td>Wetland Rehabilitation</td>
<td>Upper catchments of the Ezimkodweni River system</td>
<td>• 1 Wetland Specialist • Community members</td>
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<td></td>
<td>Alien plant control</td>
<td>All six critical biodiversity areas</td>
<td>• Aligning all major rivers and within critical biodiversity areas</td>
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<tr>
<td></td>
<td>Community based indigenous plant nursery</td>
<td>Interested community members</td>
<td>• Setup nursery</td>
<td>• 1 Ecologist</td>
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<tr>
<td></td>
<td>Environment</td>
<td>Replanting severely modified riparian zones so as to protect river banks</td>
<td></td>
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<tr>
<td></td>
<td>‘Donga’ Rehabilitation</td>
<td>I km on either side of along all major rivers and river</td>
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<tr>
<td></td>
<td>Environmental</td>
<td>All traditional</td>
<td>- Prepare education</td>
<td>- Environmentalist</td>
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ETHEKWINI RURAL STRATEGY
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<th>SUB-PROGRAMME (include awareness, new projects, training)</th>
<th>PROJECT DESCRIPTION</th>
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<th>OUTCOME</th>
<th>LOCATION GPS COORDINATES</th>
<th>VALUE /FUNDING</th>
<th>SOURCE OF FUNDING</th>
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<th>PERIOD</th>
<th>LIST ACTIVITIES TO UNLOCK THE PROJECT /PROJECT ACTION PLAN</th>
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<tr>
<td>education especially for traditional Leaders</td>
<td>councils</td>
<td>manuals in local language</td>
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<tr>
<td>Community members identified in flood risk areas</td>
<td>• Prepare other education materials (audio visual Equipment)</td>
<td>Educate traditional leadership on local national and global environmental legislation and strategic SA planning responses (eg global climate change adaptation)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Community leaders</td>
<td></td>
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<tr>
<td>Dry season gardening practices in wetlands including grazing</td>
<td>Traditional leaders and interested community based gardeners</td>
<td>• Education of wetlands</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Agricultural specialist</td>
<td></td>
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<tr>
<td>Harvesting of natural resources</td>
<td>Communities</td>
<td>• Rainfall harvesting</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Community members</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Harvesting of natural resources</td>
<td>Communities</td>
<td>• Recycling of non-degradable substances</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Community members</td>
<td></td>
<td></td>
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<tr>
<td>TRANSPORTATION</td>
<td>REGIONAL PLANNING</td>
<td>Review of IRPTN</td>
<td>Review of the IRPTN services to ensure that the rural nodes are adequately serviced. This includes the proposed rural rail nodes</td>
<td>An updated IRPTN system</td>
<td>R 500 000.00</td>
<td>ETA</td>
<td>ETA</td>
<td>3 months</td>
<td></td>
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<tr>
<td>CTP Update 2015 - 2020</td>
<td>Update of the CTP with a special focus on Rural Accessibility</td>
<td>Inclusion of rural accessibility projects onto the list of key municipal projects</td>
<td></td>
<td></td>
<td>N/A</td>
<td>ETA</td>
<td>ETA</td>
<td>N/A</td>
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</tbody>
</table>
| PROGRAMME | SUB-PROGRAMME  
(include awareness, new projects, training) | PROJECT DESCRIPTION | ENVISAGED ACTIVITIES | OUTCOME | LOCATION GPS COORDINATES | VALUE /FUNDING | SOURCE OF FUNDING | PROJECT CHAMPION | PERIOD | LIST ACTIVITIES TO UNLOCK THE PROJECT /PROJECT ACTION PLAN |
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<tbody>
<tr>
<td></td>
<td>P197 Conversion to Class 2</td>
<td>Assess the impact of converting the P197 from a Class 3 road to a Class 2 road to complete the Primary Corridor route and to provide an extra mobility route south of Durban</td>
<td>An updated road hierarchy network for eThekwini</td>
<td>R 200 000.00</td>
<td>ETA</td>
<td>ETA</td>
<td>3 months</td>
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<tr>
<td></td>
<td>Rail Services</td>
<td>Updated rail timetable accommodating skip stops, short turn-around and other measures on the Cato Ridge line and South Coast line that will improve journey speeds</td>
<td>Improved journey times</td>
<td>R 500 000.00</td>
<td>PRASA</td>
<td>PRASA</td>
<td>3 months</td>
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<td></td>
<td>Shova Kalula Programme (Bicycles)</td>
<td>Prepare a detailed implementation plan for the roll out of the Shova Kalula Programme in eThekwini. Consider identification of funding sources, training programmes, road safety programmes etc.</td>
<td>A detailed implementation plan for the roll out of Shova Kalula in eThekwini</td>
<td>R 500 000.00</td>
<td>Department of Transport/ETA</td>
<td>ETA</td>
<td>6 months</td>
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<td></td>
<td>Scholar Transport Plan</td>
<td>Develop an implementation plan for the roll out of scholar transport in rural area</td>
<td>An implementation plan and feasibility assessment for the scholar transport in eThekwini Rural areas</td>
<td>R 1 500 000.00</td>
<td>Department of Transport/ETA</td>
<td>ETA</td>
<td>9 - 12 months</td>
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<tr>
<td></td>
<td>Deep Rural Transport Plan</td>
<td>Development of a dial-a-ride/metered taxi plan to serve deep lying areas of eThekwini</td>
<td>A project roll out plan and a framework for implementation</td>
<td>R 500 000.00</td>
<td>ETA</td>
<td>ETA</td>
<td>6-12 months</td>
<td></td>
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<tr>
<td>LOCAL AREA PLANNING</td>
<td>Rural Nodes Planning</td>
<td>undertake detail assessment of transportation elements as part of LAP, FAP, PP and LUMS for rural nodes</td>
<td>Completed LAP, FAP, PP, LUMS</td>
<td>R 250 000.00</td>
<td>eThekwini Planning/ETA</td>
<td>eThekwini Planning/ETA</td>
<td>6 to 9 months</td>
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<td></td>
<td>Rural Rail Station Nodes Planning</td>
<td>undertake detail assessment of transportation elements as part of LAP, FAP, PP and LUMS for rural rail station nodes</td>
<td>Completed LAP, FAP, PP, LUMS</td>
<td>R 250 000.00</td>
<td>eThekwini Planning/ETA</td>
<td>eThekwini Planning/ETA</td>
<td>6 to 9 months</td>
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<tr>
<td>INFRASTRUCTURE</td>
<td>Pedestrian Sidewalks</td>
<td>rollout of pedestrian sidewalks in rural nodes</td>
<td>A pedestrian/NMT friendly environment</td>
<td>N/A</td>
<td>ETA</td>
<td>ETA</td>
<td>N/A</td>
<td>Rural Nodes Planning</td>
<td></td>
<td></td>
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<tr>
<td>INFRASTRUCTURE</td>
<td>Public Transport Facilities</td>
<td>rollout of public transport facilities in rural nodes</td>
<td>Safe public transport facilities</td>
<td>N/A</td>
<td>ETA</td>
<td>ETA</td>
<td>N/A</td>
<td>Rural Nodes Planning</td>
<td></td>
<td></td>
</tr>
<tr>
<td>INFRASTRUCTURE</td>
<td>Access Streets within Nodes</td>
<td>Creation of a local street network within nodes</td>
<td>A road hierarchy within the nodes</td>
<td>N/A</td>
<td>ETA</td>
<td>ETA</td>
<td>N/A</td>
<td>Rural Nodes Planning</td>
<td></td>
<td></td>
</tr>
<tr>
<td>INFRASTRUCTURE</td>
<td>Rail Engineering Upgrades</td>
<td>Upgrades to the rail infrastructure along the Cato Ridge line and South Coast lines</td>
<td>Improved journey times</td>
<td>N/A</td>
<td>PRASA</td>
<td>PRASA</td>
<td>N/A</td>
<td></td>
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<tr>
<td>RESOURCE</td>
<td>Scholar Transport Champion</td>
<td>Designate or employ a resource whose one core responsibility will be to ensure that DOT is following up on their mandate on Scholar Transport</td>
<td>Project Champion</td>
<td>N/A</td>
<td>ETA</td>
<td>ETA</td>
<td>N/A</td>
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<tr>
<td>INFRASTRUCTURE</td>
<td>Sewer</td>
<td>To provide sanitation to the following areas: 1 Imbozamo 2 KwaXimba 3 Ntukuso 4 Kwa Sondela 5 Kwa Sondela 2 6 Unknown (Cate Ridge) 7 Unknown (Inchanga) 8 Unknown (Drammond) 9 Unknown (Moya) 10 Unknown (Mpumalanga) 11 Nshongweni 12 Nshongweni 1 13 Shongweni Dam Tourism 14 Kwa Ndengesi</td>
<td>1 Septic tank and soak away 2 requires water borne sanitation and WWTW 3 requires water borne sanitation and WWTW 4 Septic tank and tank and soak away 5 Septic tank and soak away 6 requires water borne sanitation and upgrade WWTW 7 requires water borne sanitation and upgrade WWTW 8 Septic tank and soak away 9 requires water borne sanitation and upgrade WWTW 10 requires water borne sanitation and upgrade WWTW 11 Septic tank and soak away 12 requires water borne sanitation and requires</td>
<td>Provide adequate sanitation services to the community</td>
<td>1-29.624627, 30.789065 2 -29.664489, 30.636079 3 -29.669317, 30.592899 4 -29.717310, 30.724606 5 -29.717310, 30.724606 6 -29.728989, 30.589672 7 -29.704017, 30.666615 8 -29.756842, 30.687886 9 -29.794528, 30.641881 10 -29.812329, 30.651065 11 -29.838512, 30.686711 12 -29.843040, 30.686711</td>
<td>Ethekwini Municipality</td>
<td>Inkosi/Counsellor/Ethekwini</td>
<td>8-15 months for each node</td>
<td>1. Carry out detailed feasibility studies for each area/node in order to establish available capacity and future projects in term of IDP and emergency projects. 2. Hygienic and environmental hazards 3. Political intervention</td>
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<td>North</td>
<td>To provide sanitation to the following areas: 19 Tourism 20 Cottonlands 21 Tourism 1 22 Osiindsweni 23 Buffelsdraai 24 Senzokuhle 25 Inanda Dam Tourism 26 Umzinyathi Corridor 27 Mpenjathi 28 Tourism/RSS 29 KwaNgolisi 30 Molweni 31 Waterfall</td>
<td>19 requires water borne sanitation and upgrade WWTW 20 Requires WWTW 21 Requires WWTW 22 Septic tank and soak away 23 requires water borne sanitation and WWTW 24 requires water borne sanitation and WWTW 25 Requires WWTW 26 requires water borne sanitation and WWTW 27 Requires WWTW 28 Requires WWTW 29 Requires WWTW 30 Requires WWTW 31 Requires bulk line to existing WWTW</td>
<td>Provide adequate sanitation services to the community</td>
<td>19 - 29.539935, 31.142337 20 - 29.586774, 31.053019 21 - 29.589984, 31.032849 22 - 29.601042, 31.004512 23 - 29.647380, 30.974048 24 - 29.643201, 30.901856 25 - 29.677137, 30.848469 26 - 29.677137, 30.848469 27 - 29.696419, 30.916454 28 - 29.703203, 30.887186</td>
<td>Ethekwini Municipality</td>
<td>Inkosi/Counsellor/Ethekwini</td>
<td>8-15 months for each node</td>
<td>1. Carry out detailed feasibility studies for each area/node in order to establish available capacity and future projects in term of IDP and emergency projects. 2. Hygenic and environmental hazards 3. Political intervention</td>
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<tr>
<td>South</td>
<td>To provide sanitation to the following areas: 32 Zwelibomvu 33 External Node 34 Umbumbulu 35 Inwabi 36 Tourism 37 Umlazi K 38 Folweni 39 Nsimbini 40 Umlazi Y 41 KwaMakhuta 42 Lovu 43 Umnini 44 Ungababa 45 Ungababa Tourism 46 Infracombe 47 Magabeni 48 South</td>
<td>32 Requires bulk line to existing WWTW 33 Septic tank and soak away 34 Septic tank and soak away 35 Requires WWTW 36 Requires WWTW 37 Requires WWTW 38 Expand WWTW and reticulation 39 Expand WWTW and bulk line 40 Expand WWTW and bulk line 41 Expand WWTW 42 Requires WWTW 43 Requires WWTW 44 Requires WWTW 45 Requires WWTW 46 Expand reticulation 47 Upgrade WWTW 48 Requires WWTW</td>
<td>Provide adequate sanitation services to the community</td>
<td>-29.707935, 30.81041 30 30.868991 31 29.733533, 30.796274</td>
<td>-29.707935, 30.81041 30 30.868991 31 29.733533, 30.796274</td>
<td></td>
<td>Ethekwini Municipality</td>
<td>Inkosi/Counsellor/Ethekwini</td>
<td>8-15 months for each node</td>
<td>1. Carry out detailed feasibility studies for each area/node in order to establish available capacity and future projects in term of IDP and emergency projects. 2. Hygienic and environmental hazards 3. Political intervention</td>
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<td>Water</td>
<td>Outer West</td>
<td>To provide potable water to the following areas: 1 Imbozamo 2 Kwaximba 3 Ntukuso 4 Kwa Sondela 5 Kwa Sondela 2 6 Unknown (Cate Ridge) 7 Unknown (Inchanga) 8 Unknown (Drammond) 9 Unknown (Moya) 10 Unknown (Mpumalanga) 11 Nshongweni 12 Nshongweni 13 Shongweni Dam Tourism 14 Kwa Ndengesi 15 Dassenhoek 16 Unknown (Mariannhill) 17 Unknown (Angola) 18 Unknown (Sgubudwini)</td>
<td>1 Expand Reticulation 2 Expand Reticulation 3 Increase Capacity of Existing reticulation 4 No bulk and no reticulation (node remote) 5 6 Has reticulation - is ok 7 Expand Existing reticulation 8 Expand Existing reticulation 9 Has reticulation - is ok 10 Upgrade existing reticulation 11 Expand Existing reticulation 12 13 Expand Existing reticulation and bulk line 14 Has reticulation - is ok 15 Expand Existing reticulation 16 Require Bulk line and require reticulation 17 Require Bulk line and require reticulation 18 Expand Existing reticulation</td>
<td>Supply potable water to the community</td>
<td>-30.154097, 30.829829 46 -30.189663, 30.796244 47 -30.19994, 30.762778 48 -30.183661, 30.809687</td>
<td>Ethekwini Municipality</td>
<td>Inkosi/Counsellor/Ethekwini</td>
<td>8-15 months for each node</td>
<td>1. Carry out detailed feasibility studies for each area/node in order to establish available capacity and future projects in term of IDP and emergency projects. 2. Hygenic and environmental hazards 3. Political intervention</td>
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<tr>
<td>North</td>
<td>To Provide potable water to the following areas:</td>
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<td></td>
<td></td>
<td>-29.871474, 30.831938</td>
<td></td>
<td></td>
<td>Ethekwini Municipality</td>
<td>8-15 months for each node</td>
<td></td>
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<tr>
<td></td>
<td>19 Tourism 20 Cottonlands 21 Tourism 1 22 Osindisweni</td>
<td></td>
<td>19 Expand Existing</td>
<td>Supply potable water</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1. Carry out detailed feasibility studies for each area/node in order to establish available capacity and future projects in term of IDP and emergency projects. 2. Hygenic and environmental hazards 3. Political intervention</td>
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<td></td>
<td>23 Buffelsdraai 24 Senzokukhle 25 Inanda Dam Tourism 26</td>
<td>reticulation</td>
<td>19 Expand Existing</td>
<td>to the community</td>
<td></td>
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<td>Umzinyathi Corridor 27 Mpenjathi 28 Tourism/RSS 29 KwaNgolisi</td>
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<td>South</td>
<td>To provide potable water to the following areas: 32 Zwelibomvu 33 External Node 34 Umbumbulu 35 Inwabi 36 Tourism 37 Umbuzo K 38 Folweni 39 Nsimbini 40 Umsha Y 41 KwaMakhuta 42 Lubu 43 Umshini 44 Umzimvubu 45 Umzimvubu Tourism 46 Infocombe 47 Magabeni 48 South</td>
<td>32 Upgrade existing reticulation and bulk line 33 Require Bulk line and require reticulation 34 Expand Existing reticulation 35 Upgrade existing reticulation and bulk line 36 Upgrade existing reticulation and bulk line 37 Upgrade existing reticulation and bulk line 38 Upgrade existing reticulation and bulk line 39 Require Bulk line and require reticulation 40 Require Bulk line and require reticulation 41 Upgrade and expand bulk line 42 Expand Existing reticulation 43 Upgrade and expand bulk line 44 Upgrade existing reticulation 45 Expand Existing reticulation 46 Upgrade existing reticulation and bulk line</td>
<td>Supply potable water to the community</td>
<td>32 - 29.883252, 30.732343 33 - 30.032740, 30.681419 34 - 29.984402, 30.704010 35 - 29.942734, 30.826349 36 - 29.961178, 30.805578 37 - 29.964584, 30.852240 38 - 29.994525, 30.825303 39 - 30.006268, 30.857025 40 - 30.004485, 30.881230 41 - 30.028365, 30.863307 42 - 30.058954, 30.823761 43 - 30.131904, 30.799702 44 - 30.139486, 30.827851 45 - 30.154097, 30.829829 46 - 30.189663, 30.814041</td>
<td>30 - 29.732528, 30.868991 31 - 29.73353, 30.796274</td>
<td>Ethekwini Municipality</td>
<td>Inkosi/Counsellor/Ethekwini</td>
<td>8-15 months for each node</td>
<td>1. Carry out detailed feasibility studies for each area/node in order to establish available capacity and future projects in term of IDP and emergency projects. 2. Hygienic and environmental hazards 3. Political intervention</td>
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<td>Stormwater</td>
<td>Outer West</td>
<td>Provide the area with adequate stormwater infrastructure</td>
<td>The steep topographical nature of all nodes within the area results in a high erosion possibility. Roads will be constructed as storm water reticulation infrastructure.</td>
<td>To prevent loss of life and reduce damage to property by the runoff from frequent storms.</td>
<td>1-29.624627, 30.789065, 2-29.664489, 30.636079 3-29.669317, 30.592899 4-29.717310, 30.724606 5-29.717310, 30.724606 6-29.728989, 30.589672 7-29.704017, 30.666615 8-29.756842, 30.687886 9-29.794528, 30.641881 10-29.812329, 30.653065 11-29.838512, 30.686711 12-29.840340, 30.682169 13-29.855278, 30.688629 14-29.853663, 30.772726 15-29.855449</td>
<td>Ethekwini Municipality</td>
<td>Inkosi/Counsellor/Ethekwini</td>
<td>6-12 months for each node</td>
<td>1. Carry out detailed feasibility studies for each area/node in order to establish available capacity and future projects in term of IDP and emergency projects. 2. Hygenic and environmental hazards 3. Political intervention</td>
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<td>30.737278 16 -29.839093, 30.809451 17 -29.871474, 30.831938 18 -29.860746, 30.788159</td>
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<td>1. Carry out detailed feasibility studies for each area/node in order to establish available capacity and future projects in term of IDP and emergency projects. 2. Hygenic and environmental hazards 3. Political intervention</td>
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<td>North</td>
<td>Provide the area with adequate stormwater infrastructure</td>
<td>Roads will be constructed as storm water reticulation infrastructure. Natural contours should be followed with minimal alignments running perpendicular to these contours. Storm water protection should be installed by means of gabion protection and drainage into natural water courses.</td>
<td>To prevent loss of life and reduce damage to property by the runoff from frequent storms.</td>
<td></td>
<td>19 - 29.539935, 31.142337 20 -29.586774, 31.053019 21 -29.589984, 31.032849 22 -29.610142, 31.000451 23 -29.647380, 30.974048 24 -29.643201, 30.901856 25 -29.677137, 30.848469 26 -29.677137, 30.848469 27 -29.696419, 30.916454 28 -29.703203, 30.887186 29 -29.707935, 30.814041 30 -29.732528, 30.868991 31 -29.733353, 30.796274</td>
<td>Ethekwini Municipality</td>
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<td>South</td>
<td>Provide the area with adequate stormwater infrastructure</td>
<td>The final region of the greater development area is predominantly similar to the others. Ground conditions which are more robust</td>
<td>To prevent loss of life and reduce damage to property by the runoff from frequent storms.</td>
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<td>32 - 29.883252, 30.732343 33 -30.032740, 30.681419 34</td>
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<td>Electricity</td>
<td>High Density Areas</td>
<td>Provide the area with electricity</td>
<td>In these areas there is sufficient electrical infrastructure and the dwellings are supplied with electrical services from the national grid. These nodes can therefore be supplied with sufficient electrical energy by the national grid as they are within reasonable distance from the network.</td>
<td>Supply electricity to the community</td>
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<td>Ethekwini Municipality</td>
<td>Inkosi/Counsellor/Ethekwini</td>
<td>1. Carry out detailed feasibility studies for each area/node in order to establish available capacity and future projects in term of IDP and emergency projects. 2. Hygenic and environmental hazards 3. Political intervention</td>
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<tr>
<td>Medium - Low Density Areas</td>
<td>Provide the area with electricity</td>
<td>Proposed nodes situated in the medium to low density settlement areas are in some cases remote from any electrical services and therefore require additional electrical infrastructure to supply these nodes with electrical energy. These nodes can be supplied from the national grid but would require significant extensions to the existing network, and the capital cost of this would be substantial. Where extensions to the existing network are not possible, alternative sources of electrical energy such as solar and wind generation should be considered.</td>
<td>Supply electricity to the community</td>
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<td>Ethekwini Municipality</td>
<td>Inkosi/Counsellor/Ethekwini</td>
<td>1. Carry out detailed feasibility studies for each area/node in order to establish available capacity and future projects in term of IDP and emergency projects. 2. Hygenic and environmental hazards 3. Political intervention</td>
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<td>Low Density Areas</td>
<td>Provide the area with electricity</td>
<td>In the South area there are nodes in low density settlement areas that are completely isolated from the national grid. The extension to the electrical network and installation of electrical infrastructure to supply these nodes with electrical services can be seen as unconventional as the capital costs behind this are substantial. In these areas dedicated hybrid solar and wind power generation should be considered, although having substantial capital cost, these installations have benefits on the environment and community.</td>
<td>Supply electricity to the community</td>
<td>Ethekwni Municipality</td>
<td>Inkosi/Counsellor/Ethekwni</td>
<td>R20 million per annum</td>
<td>Public / Private Sector</td>
<td>eThekwini Parks, Leisure and Recreation</td>
<td>5 facilities per year</td>
<td>1. Carry out detailed feasibility studies for each area/node in order to establish available capacity and future projects in term of IDP and emergency projects. 2. Hygenic and environmental hazards 3. Political intervention</td>
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**IMPROVE ECONOMIC LINKAGE**

<p>| Disseminate information | INFORMATION CENTRE ESTABLISHMENT | A government information centre should be established in each identified rural node/centre. The nature / format of the information office must be agreed upon between eThekwini / Traditional Councils and various stakeholders. | (1) Engage stakeholders / funders. (2) Develop standard approach. (3) Prioritise site. (4) Allocate funding. (5) Develop. (6) Ongoing management. | Established Information Centres in each rural node | R20 million per annum | Public / Private Sector | eThekwini Parks, Leisure and Recreation | 5 facilities per year | Obtain stakeholder buy-in for concept. Get eThekwini Parks, Leisure and Recreation to take ownership of the initiative. |</p>
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<td>government departments potentially making a contribution to the operation of these centres. The establishment of centres in those nodes serving the largest catchment should be prioritised. Information can where possible be accommodated in existing facilities such as Traditional Council offices, schools and libraries. The purpose of the information centre will primarily be to provide residents with access to (1) job market information, (2) market information (tenders and opportunities), (3) economic opportunity information, (4) municipal information etc.</td>
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<td>Where possible a wider range of government services can be accessed. This is then viewed as a Thusong type centre with a different focus and the existing model must thus be investigated when developing the approach for the establishment of eThekwini Information Centres. A secondary function of the centre may potentially be to serve as the first point for the distribution of broad band services into rural communities. The initiative could be viewed as the first step towards the establishment of a network of libraries or an extension of the services offered in existing libraries. eThekwini already</td>
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<td>Business / Production Space / Facilities</td>
<td>PRODUCTION INCUBATORS</td>
<td>The focus of small business development should be on supporting existing entrepreneurs operating in rural areas. Studies have confirmed that access to space and infrastructure (water and electricity) are often the most significant challenge faced by emerging businesses. It is proposed that low cost production incubators be established in key development nodes to accommodate existing entrepreneurs</td>
<td>(1) Develop a model for setting up Production Incubators (2) Prioritise sites (3) Confirm funding availability / Source funding (4) Set up management structure (5) Develop production incubators (6) Ongoing management</td>
<td>Established production incubators in each node</td>
<td>R20 million per annum</td>
<td>EDIPU, EDTEA, dti, DED</td>
<td>EDIPU</td>
<td>5 facilities per year</td>
<td>Develop model and confirm funding availability</td>
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<td>showing promise. Standard designs are to be developed for these. The incubators are, at least initially, to be managed by eThekwini. Although the initial focus will be on providing access to space the services could be expanded to include the range of business support services offered by SEDA and the eThekwini Business Support Unit. Accommodation of entrepreneurs to be limited to 2 to 3 years.</td>
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<td>(1) Develop a guidelines for establishing informal trading space in rural nodes (2) Prioritise sites (3) Confirm funding availability / Source funding (4) Develop spaces / facilities (6) Ongoing management</td>
<td>Dedicated informal trading space in each rural node (30% of retail / trading space).</td>
<td>R10 million per annum</td>
<td>COGTA, EDTEA</td>
<td>eThekwini Business Support</td>
<td>5 nodes per year</td>
<td>Develop guidelines and confirm funding availability</td>
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<td>Standard municipal guidelines are to be developed for the establishment of trading spaces and facilities. The guidelines will provide an indication on the appropriate location of trading facilities, the size of spaces in facilities to be provided, the appropriate ergonomics, facility designs that work, the approach to the development of facilities, (including aspects such as land ownership, project management etc.), (the approach to the allocation of space in facilities), etc. Specific recommendations are also to be made on the supply of ablution and storage facilities relating to trading</td>
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<td>facilities. Where formalised facilities is deemed to be appropriate this should be provided, based on the guidelines, by either the public and/or private sectors. A basic requirement in private sector retail developments must be the provision of appropriate space for informal traders integrated into the retail development.</td>
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<tr>
<td>IDENTIFY AND RESERVE AGRICULTURAL LAND IN ITB AREAS</td>
<td>Agricultural land in all Ingonyama Trust land is under pressure from development due to the potential income that can be generated from different forms of accommodation. In order to protect agricultural land all available high potential agricultural land</td>
<td>(1) Prepare project brief (2) Tender process and appointment of service provider (3) Assessment of agricultural land (4) Area specific engagements to demarcate land and obtain agreement on management (5) Monitor land development in rural areas</td>
<td>Demarcated areas for agricultural production on ITB land</td>
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<td>R5 million</td>
<td>DRDLR / Dept of Agriculture / COGTA</td>
<td>eThekwini Strategic Spatial Planning / Land Use Management</td>
<td>24 months</td>
<td>Obtain buy-in from key partners and secure funding for project from them</td>
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<td>Programme</td>
<td>Sub-Programme (include awareness, new projects, training)</td>
<td>Project Description</td>
<td>Envisaged Activities</td>
<td>Outcome</td>
<td>Location GPS Coordinates</td>
<td>Value/Funding</td>
<td>Source of Funding</td>
<td>Project Champion</td>
<td>Period</td>
<td>List Activities to Unlock the Project/Project Action Plan</td>
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<td>must be identified and reserved for this purpose (a process of identifying high potential agricultural land in ITB areas across KZN has been undertaken by DRDLR and should serve as a basic starting point for the initiative). Such a process will have to involve both Traditional Councils and local communities if to be successful. Creative processes, possibly including incentives, to ensure the reservation of land for agricultural purposes are to be developed. The next step in the process will have to be to find &quot;fair approach” to the allocation of land for production purposes to individuals and</td>
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**ETHEKWINI RURAL STRATEGY**
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<tr>
<td>Agriculture</td>
<td>AGRICULTURAL PRODUCTION SUPPORT HUBS</td>
<td>eThekwini, with private sector support has already developed a number of Agricultural Hubs. Through the process to date a number of lessons have been learnt. The programme will require the further roll-out of agricultural hubs aimed at providing farmer support in terms of technical advice, input supplies and product marketing. The hubs are to be established in ITB areas where current agricultural activities are most concentrated.</td>
<td>(1) Develop a business plan for Agricultural Hubs (2) Prioritise sites (3) Confirm funding availability / Source funding (4) Set up management structure (5) Develop Agricultural Hub production incubators (6) Ongoing management</td>
<td>Three established Agricultural Hubs</td>
<td></td>
<td>R15 million</td>
<td>Dept of Agriculture / Private Sector</td>
<td>EDIPU</td>
<td>24 months</td>
<td>Develop business plan and secure private sector interest</td>
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<td>BUSINESS PLANS FOR THE ESTABLISHMENT OF AGRICULTURAL HUBS ALREADY EXISTS AND SHOULD BE REVIEWED. WHERE POSSIBLE PRIVATE SECTOR DRIVEN AGRICULTURAL HUB INITIATIVES SHOULD BE ENCOURAGED.</td>
<td>GROUP MARKETING OF AGRICULTURAL PRODUCE</td>
<td>Business plans for the establishment of agricultural hubs already exists and should be reviewed. Where possible private sector driven agricultural hub initiatives should be encouraged.</td>
<td>Established group marketing initiatives in the south, west and north</td>
<td>R3 million</td>
<td>Dept of Agriculture, EDTEA</td>
<td>EDIPU / Business Support</td>
<td>12 months</td>
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<td>BUSINESS PLANS FOR THE ESTABLISHMENT OF AGRICULTURAL HUBS ALREADY EXISTS AND SHOULD BE REVIEWED. WHERE POSSIBLE PRIVATE SECTOR DRIVEN AGRICULTURAL HUB INITIATIVES SHOULD BE ENCOURAGED.</td>
<td>GROUP MARKETING OF AGRICULTURAL PRODUCE</td>
<td>The overall objective of the programme is to facilitate the linking of farmer’s groups with sustainable markets for agricultural products and to build local capacity for the on-going successful marketing of agricultural products. The project is focussed on facilitating collective agricultural product marketing in the rural areas of eThekwini. This will be done by engaging, (1) Prepare business plan for Group Marketing initiative (2) Tender process and appointment of service provider (3) Identification of focus areas (4) Workshopping phase (5) Implementation phase (6) Ongoing monitoring</td>
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<td>through a workshop and capacity building programme, with existing farmer groups and facilitating the linking of these groups with new or established markets. At least one group in each of the southern, western and northern rural areas are to be targeted in a first one-year pilot phase. The final deliverable for the pilot project will then be (1) three farmer's groups with clear product marketing objectives and related action plans (developed through a facilitated process) and (2) three farmers groups linked to markets for products. This project will link to the existing farmer support programmes.</td>
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<td>Tourism</td>
<td>DEVELOP KEY TOURISM SITES (ANCHORS)</td>
<td>Building on the strategy to develop key nodes a number of key tourism sites in ‘rural eThekwini’ must be further developed. These sites potentially include the dams and surrounding nature areas with existing Resource Management Plans (Shongweni, Inanda, Hazelmere and Nagle), the extension of the Inanda Tourism Route, the Shembi facility at Matabetule (linked to the Inanda Route), the uMngeni River Valley (i.e. Durban Green Corridor). In the development of the sites</td>
<td>(1) Prioritise rural tourism anchor sites for development (2) Consider and clarify various funding and management models for opportunities with stakeholders (3) Develop opportunity information sheets and engage with potential public / private sector partners (4) Initiate developments</td>
<td>A series of tourism anchor projects being implemented presenting opportunities for local entrepreneurs</td>
<td>Not applicable</td>
<td>Tourism Durban, KZN Tourism Authority, EDTEA, Department of Water Affairs</td>
<td>Tourism Durban</td>
<td>Ongoing</td>
<td>Acknowledgement of the tourism opportunities in rural eThekwini</td>
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<td>ESTABLISH TOURISM ENTREPRENEURS</td>
<td>A programme to identify and build the capacity of specifically tourism entrepreneurs must be engaged on. Specifically opportunities for tourism entrepreneurs to benefit from government funded initiatives must be identified.</td>
<td>(1) Develop programme to identify and build capacity of specifically tourism entrepreneurs</td>
<td>Established new tourism entrepreneurs</td>
<td>GPS coordinates</td>
<td>R500 000</td>
<td>Tourism Durban</td>
<td>Tourism Durban</td>
<td>Ongoing</td>
<td>Develop approach and secure funding</td>
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<tr>
<td>Informal Retail</td>
<td>PARTICIPATORY ECONOMIC ACTION PLANNING (PEAP) FOR RETAIL BUSINESSES</td>
<td>eThekwini Economic Development Unit (EDIPU) is currently implementing a second round of Participative Economic Action</td>
<td>(1) Secure budget for expansion of existing programme (2) Appointment service providers (3) Implement PEAP process (4) Monitor</td>
<td>Capacitated active individual and group owned business in rural areas</td>
<td></td>
<td>R1 million per year</td>
<td>EDIPU and other</td>
<td>EDIPU</td>
<td>Ongoing</td>
<td>Secure funding</td>
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Planning in denser settlement across eThekwini (some of these are within so-called rural areas). It is suggested that this programme should continue to be further developed and expanded with more communities to be reached through this approach. The approach is focussed on identifying already established entrepreneurs or groups of entrepreneurs and to, through participatory planning processes, develop action plans for various initiatives. eThekwini, through the appointed service providers, will then continue to monitor and support...
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<td>INFORMAL BUSINESS TRAINING AND SUPPORT INITIATIVE FOR RETAIL BUSINESSES</td>
<td>A broad based training and support initiative is proposed. The broad based programme is to consist of a &quot;Peer&quot; Support Programme and a Broad Based Training Initiative. Both the components are aimed at achieving maximum coverage in terms of business support with the limited resources available. The &quot;Peer&quot; Support programme will be targeted at already established businesses. The initiative will work on a similar basis as the Community Health Worker Programmes and others. A suitable candidate will be</td>
<td>[1) Develop approach to support programme (2) Allocate key officials to manage support programme (3) Implement programme</td>
<td>Capacitated informal economy entrepreneurs</td>
<td>Not applicable</td>
<td>Not applicable</td>
<td>eThekwini Business Support</td>
<td>Ongoing</td>
<td>Establish rural focused programme in Business Support Unit</td>
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<td>selected from a group of informal economy businesses to undergo training in key business related topics, viz. finance, record-keeping, marketing, product development etc. The trained person will then be required to support persons within the group - a stipend will be offered the person responsible for supporting the peer group. The Broad Based Training initiative will be targeting both survivalist and emerging businesses. The Initiative will be focussed on providing the specific business types with an understanding of entrepreneurship and opportunities available in terms of business development. It</td>
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<td>Formal Retail</td>
<td>DEVELOPMENT OF ECONOMIC NODES</td>
<td>The current spatial structure is not conducive to supporting economic development impacting positively on the lives of the majority of the people in rural eThekwini. Rather, the spatial structure impacts negatively on economic development requiring rural households spend excessive amounts of money and time on transport in order to access service centres and the majority of the population has limited or no access to sustainable</td>
<td>See spatial development programmes</td>
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<td>Economic opportunities such as formal employment, business opportunities, education / training and related support. A nodal development programme, guided by the Rural Spatial Development Framework is to be implemented. The focus in each node will be to offer access to at least retail services, social services and opportunities for production (as opposed to historic approaches focussing on providing access to services only). Nodes with larger catchments should be prioritised.</td>
<td>Through the establishment of formal nodes in the so-called rural areas new</td>
<td>economic opportunities such as formal employment, business opportunities, education / training and related support.</td>
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<td>DEVELOPTING GUIDELINES FOR INVESTMENT IN PREVIOUSLY DISADVANTAGED</td>
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<td>(1) Develop guidelines for investment in previously disadvantaged areas  (2) Monitor implementation of the guidelines</td>
<td>Investments responsive to needs in rural areas</td>
<td>R200 000</td>
<td>EDIPU</td>
<td>EDIPU</td>
<td>6 months</td>
<td>Secure budget</td>
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<tr>
<td>AREAS.</td>
<td>opportunities for establishing formal retail facilities will be opened up. These opportunities must be marketed with developers / retailers who will develop retail establishments following a set of guidelines agreed to between eThekwini and Traditional Councils. It is suggested that the allocation of development rights should require developers / retailers to provide: • Opportunities for local entrepreneurs; • Opportunities for accommodating the informal sector; • Systems to support small traders and informal</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PROGRAMME</td>
<td>SUB-PROGRAMME (include awareness, new projects, training)</td>
<td>PROJECT DESCRIPTION</td>
<td>ENVISAGED ACTIVITIES</td>
<td>OUTCOME</td>
<td>LOCATION GPS COORDINATES</td>
<td>VALUE /FUNDING</td>
<td>SOURCE OF FUNDING</td>
<td>PROJECT CHAMPION</td>
<td>PERIOD</td>
<td>LIST ACTIVITIES TO UNLOCK THE PROJECT /PROJECT ACTION PLAN</td>
</tr>
<tr>
<td>------------</td>
<td>-------------------------------------------------------------</td>
<td>---------------------</td>
<td>----------------------</td>
<td>---------</td>
<td>--------------------------</td>
<td>----------------</td>
<td>------------------</td>
<td>-----------------</td>
<td>--------</td>
<td>------------------------------------------------------------</td>
</tr>
<tr>
<td>INVESTMENT ATTRACTION</td>
<td>A key obstacle to attracting investment to rural areas is the unfamiliarity of developers with these areas. Through the preparation of the Rural Development Framework and other relevant planning frameworks this situation is being addressed. The Rural Development Framework is to be used as a tool for the marketing of rural investment opportunities. Based on information available in the Framework these opportunities can be further packaged.</td>
<td>(1) Engage with investors on Rural Development Plan / Framework</td>
<td>Retail / business investment in rural nodes</td>
<td>Not applicable</td>
<td></td>
<td></td>
<td>EDIPU</td>
<td>Ongoing</td>
<td>Finalise Rural Development Framework</td>
<td></td>
</tr>
</tbody>
</table>

Businesses; and • Systems to procure products locally.
<table>
<thead>
<tr>
<th>PROGRAMME</th>
<th>SUB-PROGRAMME (include awareness, new projects, training)</th>
<th>PROJECT DESCRIPTION</th>
<th>ENVISAGED ACTIVITIES</th>
<th>OUTCOME</th>
<th>LOCATION GPS COORDINATES</th>
<th>VALUE /FUNDING</th>
<th>SOURCE OF FUNDING</th>
<th>PROJECT CHAMPION</th>
<th>PERIOD</th>
<th>LIST ACTIVITIES TO UNLOCK THE PROJECT /PROJECT ACTION PLAN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production</td>
<td>PARTICIPATORY ECONOMIC ACTION PLANNING (PEAP) FOR PRODUCTION BUSINESSES</td>
<td>See informal retail</td>
<td>(1) Secure budget for expansion of existing programme (2) Appointment service providers (3) Implement PEAP process (4) Monitor</td>
<td>Capacitated active individual and group owned business in rural areas</td>
<td>R1 million per year</td>
<td>EDIPU and other</td>
<td>EDIPU</td>
<td></td>
<td>Ongoing</td>
<td>Secure funding</td>
</tr>
<tr>
<td>INFORMAL BUSINESS TRAINING AND SUPPORT INITIATIVE</td>
<td>See informal retail</td>
<td>(1) Develop approach to support programme (2) Allocate key officials to manage support programme (3) Implement programme</td>
<td>Capacitated informal economy entrepreneurs</td>
<td>Not applicable</td>
<td>Not applicable</td>
<td>eThekwini Business Support</td>
<td>Ongoing</td>
<td>Establish rural focused programme in Business Support Unit</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 21: key projects
10. PROPOSED LAND USE FRAMEWORK

10.1. Alignment with the SDF

Ethekwini SDF makes the following proposals:

<table>
<thead>
<tr>
<th>POLICY STATEMENTS</th>
<th>REQUIREMENTS TO ACHIEVE POLICY STATEMENTS</th>
<th>LAND USE MANAGEMENT GUIDELINE</th>
<th>ALIGNMENT WITH POLICIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Protect and enhance the city’s rural environment</td>
<td>• Conserve critical environmental assets&lt;br&gt;• Conserve good agricultural potential land for future food security and job creation&lt;br&gt;• Prevent unconventional urban development from intruding into the rural environment</td>
<td>• Defend rural landscape&lt;br&gt;• Support appropriate development and activities in rural areas</td>
<td>• eThekwini Municipality rural development framework&lt;br&gt;• eThekwini Energy Strategy&lt;br&gt;• National Development Plan (2011)</td>
</tr>
<tr>
<td>2. Promote integrated and appropriate development in the rural periphery</td>
<td>• Facilitate sustainable and integrated service delivery,&lt;br&gt;• Development of Human Settlements in line with National and Provincial Policies&lt;br&gt;• Development of rural service nodes and rural corridors</td>
<td>• Develop a clear hierarchy of rural service nodes and corridors&lt;br&gt;• Promote and support integrated housing development in rural areas</td>
<td></td>
</tr>
<tr>
<td>3. Establish appropriate land use planning and management guidelines for rural development</td>
<td>• Clear understanding of the nature and role of rural areas within the wider eThekwini Municipal area</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Promote the opportunities of generating renewable energy in rural areas.</td>
<td>• Investigate the potential of resources for renewable energy generation and appropriate technologies&lt;br&gt;• Facilitate investment into renewable energies in rural areas</td>
<td>• Include and manage generation of renewable energy as an additional land use.</td>
<td></td>
</tr>
</tbody>
</table>

Table 22: SDF policy statements in the context of rural areas
The following table proposes statements based on the Rural Spatial Development Plan.

<table>
<thead>
<tr>
<th>TYPE OF LAND USE</th>
<th>STATEMENT OF INTENT</th>
<th>THRESHOLD; LOCATION; LAND USE;</th>
<th>POSSIBLE ZONES</th>
</tr>
</thead>
</table>
| **RURAL INVESTMENT NODE:** | This node is to be promoted as a subregional centre and as such should accommodate a range of higher order services. It does not only serve the study area but also interconnects the study area with the adjoining communities. The presence of the magisterial court is a major influence to the present and the future of this node. Land uses in this node are to be restricted to public services. In this regard allocation of free standing residential units is to be discouraged. | It is proposed that the following land uses are considered here:  
⇒ Thuso centre  
⇒ Clinic (0.75ha)  
⇒ Shopping facility  
⇒ Fire-station or any appropriate EMRS  
⇒ Local shop  
Furthermore it was proposed that various compatible activities could be accommodated as part of the mixed used zone.  
It is necessary to provide proper pedestrian crossing and a taxi stop closer to the road four way intersection (within the planning norms of DOT). | Typical services that may be included here include:  
⇒ Thuso centre  
⇒ Mini Shopping centre  
⇒ Multi-Purpose Centre which incorporates -  
  o Sports facility  
  o Training facility  
  o Arts craft or market stall  
  o Administration  
  o telecentre  
⇒ Primary Health centre  
⇒ Main Library  
⇒ Police station  
⇒ Fire fighting service  
⇒ Post Office  
⇒ Taxi rank  
In terms of retail the size of land suggested is 1.5ha – 3.6ha  
⇒ petrol filling station  
⇒ Informal trade and markets (up to 50m²)\(^{15}\)  
⇒ Activities related to food, clothing, furniture, anchor store, take-aways, ATM facilities.  
  o Light industrial and manufacturing are also feasible in the primary node. |
| **NEIGHBOURHOOD NODES** | Neighbourhood nodes perform social and economic functions. In the context of the study area these nodes are already being developed. The following land uses were suggested  
⇒ taxi rank  
⇒ FET college / training centre | The typical facilities and services to be provided here should include:  
⇒ Supermarkets |

\(^{15}\) According to Planning Guidelines for Retail Facilities in KwaZulu-Natal, KwaZulu-Natal Planning and Development Commission
influenced by anchor land uses that already exist. As in the case of a Rural Investment (primary) node, low impact residential land use should be discouraged in favour of public services.

The node serves medium to high density surroundings.

<table>
<thead>
<tr>
<th>NEIGHBOURHOOD NODE</th>
<th>The intention is to introduce a local centre that accommodates a cluster of public services.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>⇒ Library</td>
</tr>
<tr>
<td></td>
<td>⇒ Clinic</td>
</tr>
<tr>
<td></td>
<td>⇒ Mixed use</td>
</tr>
<tr>
<td>In addition the following land uses exist:</td>
<td>⇒ Local shop</td>
</tr>
<tr>
<td></td>
<td>⇒ Service station</td>
</tr>
<tr>
<td></td>
<td>⇒ 2 schools</td>
</tr>
<tr>
<td></td>
<td>⇒ Pre school</td>
</tr>
<tr>
<td></td>
<td>⇒ 2 worship sites</td>
</tr>
<tr>
<td>The node falls within a density zone of 30du/h.</td>
<td></td>
</tr>
</tbody>
</table>

Recommended retail facilities

⇒ Informal trade and markets (up to 50m²) and convenience stores with a variety of products sold such as food, clothing, fruit and vegetables, music and DVDs and electronic equipment.

⇒ Light industrial and manufacturing are also feasible in the secondary node such as hardware stores and panel beating workshops.

⇒ An agricultural hub is also recommended for potential location within the secondary node if there is substantial reason to locate it here.

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

The services should include:

⇒ Agri market
services serving a medium to low density area.

**SPECIALISED NODES (TERTIARY)**

<table>
<thead>
<tr>
<th><strong>Tertiary nodes are convenience points generally serving passing traffic and immediate residential places</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Tertiary nodes are relatively small typically located in bus or taxi stops in area of intersection. These are meant to provide support services to commuters and local residents.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Recommended retail facilities</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>⇒ Periodic markets could be located at pension pay points and open for business only on pension pay days</td>
</tr>
<tr>
<td>⇒ Spaza shops smaller than 50m² according to the Planning Guidelines for Retail facilities in KwaZulu-Natal. Include convenience and grocery goods</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>They would typically provide:</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>⇒ Spaza / local shops</td>
</tr>
<tr>
<td>⇒ Market / hawker stalls</td>
</tr>
<tr>
<td>⇒ LED activities</td>
</tr>
</tbody>
</table>

Recommended retail facilities

<table>
<thead>
<tr>
<th><strong>Type:</strong> Small free standing centre</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Size of land recommended:</strong> 0.15ha – 1.5ha</td>
</tr>
</tbody>
</table>

Types of activities:

<table>
<thead>
<tr>
<th><strong>Informal trade and fresh produce markets (up to 50m²). Convenience stores for groceries</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>⇒ An agricultural hub can also be recommended for potential location within the tertiary node</td>
</tr>
</tbody>
</table>
With more development pressure in the study area it is intended that residential units area considered against the various densities proposed in the concept plan.

The following residential classification is proposed:

- Rural density residential
- Medium density residential
- High density residential

It is also strongly suggested that a process that seeks to combine traditional land allocation and municipal systems is considered as contemplated in section 3 of this report.

<table>
<thead>
<tr>
<th>RESIDENTIAL</th>
<th>RURAL DENSITY</th>
<th>MEDIUM DENSITY</th>
<th>BUFFER RESIDENTIAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>With more development pressure in the study area it is intended that residential units area considered against the various densities proposed in the concept plan.</td>
<td>- Sparse settlement of 4-7 du/ha</td>
<td>- Sparse settlement of 7-15 du/ha</td>
<td>- Areas here are generally a buffer between environmentally sensitive areas and settlements areas.</td>
</tr>
<tr>
<td>The following residential classification is proposed:</td>
<td>- Average site size 1500m²</td>
<td>- Average site size 1500m²</td>
<td>- Density @20du/h</td>
</tr>
<tr>
<td>⇒ Rural density residential</td>
<td>⇒ Mixed use</td>
<td>⇒ Environmental projects</td>
<td></td>
</tr>
<tr>
<td>⇒ Medium density residential</td>
<td>⇒ Agriculture</td>
<td></td>
<td></td>
</tr>
<tr>
<td>⇒ High density residential</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The following uses area permitted: 

- Residential
- Mixed use
- Agriculture
- Environmental projects

If there is substantial reason to locate it here such as it being in close proximity to a movement route.
### Average site size 500m²

#### HIGH DENSITY
- The concept proposes that these are above 15 du/ha.
- Average site size 350m²

The following uses area permitted:
- Residential dwellings that could accommodate a mix of community accepted high density typologies
- Mixed uses.

#### Environmentally sensitive areas
These areas are critical for environmental sustainability and should be preserved and protected. Various environmental programmes may be necessary in order to ensure their future survival as well as the survival of the study area. In many instances their associated with a wider ecosystem and any negative impact generally affects a much bigger catchment.

No Development permitted other than:
- Environmental projects
- Agriculture

#### Special Service Node
These are service nodes that have special characteristics to be considered in future planning.

#### Tourism Node
Nodes offering tourism and related opportunities of regional significance supporting the other tourism products on offer in eThekwini.

#### Agricultural Zone
Zones with significant agricultural potential to be retained for production or where densities should continue to be managed.

#### Existing Urban Node
These are existing urban nodes located within formal urban areas of eThekwini serving a substantial rural catchment. In future development of such nodes the rural service centre role to be fulfilled must be acknowledged and planned for.

#### Potential Urban Node
These are potential urban nodes located within formal urban areas of eThekwini potentially serving a substantial rural catchment.
<table>
<thead>
<tr>
<th>PROPOSED ZONE</th>
<th>FAR</th>
<th>COVERAGE</th>
<th>HEIGHT</th>
<th>BUILDING LINE</th>
<th>SIDE &amp; REAR SPACE</th>
<th>MINIMUM ERF SIZE</th>
<th>PARKING</th>
<th>PARKING OTHER REQUIRENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>RESIDENTIAL</td>
<td>Nil</td>
<td>60%</td>
<td>2 storeys</td>
<td>1 metre</td>
<td>Side&amp; rear agr 3 min.1</td>
<td>180m^2</td>
<td>1bay per dwelling</td>
<td>Special consent required for a building in excess of 2 storeys in height</td>
</tr>
<tr>
<td>COMMERCIAL</td>
<td>Nil</td>
<td>80%</td>
<td>3 storeys</td>
<td>Nil</td>
<td>3m</td>
<td>N/a</td>
<td>4bays per 100m^2 of gross floor area</td>
<td>Loading facilities to be provided to the satisfaction of Council</td>
</tr>
<tr>
<td>INDUSTRY</td>
<td>Nil</td>
<td>N/a</td>
<td>3 or 25 m which ever is the greater</td>
<td>5m from centre line of road</td>
<td>Nil</td>
<td>1800m^2</td>
<td>1bay/ 100m^2</td>
<td>Sites shall be adequately lit and landscaped to the satisfaction of Council</td>
</tr>
<tr>
<td>EDUCATION</td>
<td>To the satisfaction of Council</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CIVIC &amp; SOCIAL</td>
<td>Nil</td>
<td>80%</td>
<td>3</td>
<td>1m</td>
<td>1m</td>
<td>N/a</td>
<td>1 bay/ 10 people/or seats Or 100m^2 which ever is the greater for Place of Assembly or Worship</td>
<td>Sites shall be adequately lit and landscaped to the satisfaction of Council</td>
</tr>
<tr>
<td>PUBLIC OPEN SPACE</td>
<td>To the satisfaction of Council</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>WORSHIP</td>
<td>Nil</td>
<td>60%</td>
<td>2</td>
<td>7.5m</td>
<td>3m</td>
<td>N/a</td>
<td>1 bay/ 10 seats</td>
<td>Sites shall be adequately lit and landscaped to the satisfaction of Council</td>
</tr>
<tr>
<td>TRANSPORT &amp; UTILITIES</td>
<td>To the satisfaction of Council</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AGRICULTURE</td>
<td>N/a</td>
<td>15%</td>
<td>2</td>
<td>N/a</td>
<td>N/a</td>
<td>N/a</td>
<td>Parking &amp; loading to the satisfaction of Council</td>
<td></td>
</tr>
<tr>
<td>MIXED USE</td>
<td>N/a</td>
<td>80%</td>
<td>3</td>
<td>1m each</td>
<td>180m^2</td>
<td>1bay/ 25m^2</td>
<td>Sites shall be adequately lit and landscaped to the satisfaction of Council</td>
<td></td>
</tr>
<tr>
<td>ROAD RESERVE</td>
<td>To the satisfaction of Council</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Figure 40: General Land Use Parameters*
10.2. BROAD LAND USES SIZES AS CONSIDERED BY COGTA

Educational facilities

<table>
<thead>
<tr>
<th>USE</th>
<th>SUGGESTED SIZE</th>
<th>KEY LOCATIONAL CONSIDERATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-primary school</td>
<td>0.75 ha</td>
<td>Closer to residential areas and public transport</td>
</tr>
<tr>
<td>Primary School</td>
<td>2.80 ha</td>
<td>Closer to residential areas and public transport</td>
</tr>
<tr>
<td>Secondary School</td>
<td>4.80 ha</td>
<td>Closer to residential areas and public transport</td>
</tr>
<tr>
<td>Technical High School</td>
<td>6.00 ha</td>
<td>Centrally located in main centres</td>
</tr>
<tr>
<td>Technical College</td>
<td>12.00 ha</td>
<td>Centrally located in main centres</td>
</tr>
</tbody>
</table>

Table 23: Educational Facilities

Health Facilities

<table>
<thead>
<tr>
<th>USE</th>
<th>SUGGESTED SIZE</th>
<th>KEY LOCATIONAL CONSIDERATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neighbourhood Clinic</td>
<td>0.15 ha</td>
<td>Closer to residential areas and public transport</td>
</tr>
<tr>
<td>24 hour Clinic</td>
<td>0.75 ha</td>
<td>Closer to residential areas and public transport</td>
</tr>
<tr>
<td>Community Hospital</td>
<td>7.00 ha</td>
<td>Centrally located in main nodes and public transport terminals</td>
</tr>
<tr>
<td>Regional Hospital</td>
<td>16.00 ha</td>
<td>Centrally located in main nodes and public transport terminals</td>
</tr>
</tbody>
</table>

Table 24: Health Facilities

Law Facilities

<table>
<thead>
<tr>
<th>USE</th>
<th>SUGGESTED SIZE</th>
<th>KEY LOCATIONAL CONSIDERATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Police Station</td>
<td>0.50 ha</td>
<td>Centrally located in main nodes and public transport terminals</td>
</tr>
<tr>
<td>Court Building</td>
<td>0.50 ha</td>
<td>Centrally located in main nodes and public transport terminals</td>
</tr>
<tr>
<td>Prison</td>
<td>0.50 ha</td>
<td>Centrally located in main nodes and public transport terminals</td>
</tr>
</tbody>
</table>

Table 25: Law Facilities

Community / Civic Facilities

<table>
<thead>
<tr>
<th>USE</th>
<th>SUGGESTED SIZE</th>
<th>KEY LOCATIONAL CONSIDERATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community Hall</td>
<td>0.50 ha</td>
<td>Closer to residential areas and public transport</td>
</tr>
<tr>
<td>Traditional admin Centre</td>
<td>0.05 ha</td>
<td>Closer to residential areas and public transport</td>
</tr>
<tr>
<td>Library</td>
<td>0.20 ha</td>
<td>Closer to educational facilities and public transport</td>
</tr>
<tr>
<td>Municipal depot</td>
<td>1.00 ha</td>
<td></td>
</tr>
<tr>
<td>Fire station</td>
<td>0.50 ha</td>
<td>Next to public offices</td>
</tr>
</tbody>
</table>

Table 26: Community / Civic Facilities

Post and telecommunication Facilities

<table>
<thead>
<tr>
<th>USE</th>
<th>SUGGESTED SIZE</th>
<th>KEY LOCATIONAL CONSIDERATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Post Office</td>
<td>0.05 ha</td>
<td>Centrally located in main nodes and public transport terminals</td>
</tr>
<tr>
<td>Cluster Boxes</td>
<td>0.25 ha</td>
<td>Closer to residential areas and public transport</td>
</tr>
</tbody>
</table>

Table 27: Post & Telecommunication Facilities

Special Facilities
### Special Facilities

<table>
<thead>
<tr>
<th>USE</th>
<th>SUGGESTED SIZE</th>
<th>KEY LOCATIONAL CONSIDERATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crèche</td>
<td>0.30 ha</td>
<td>Closer to residential areas and public transport</td>
</tr>
<tr>
<td>Worship</td>
<td>0.15 ha</td>
<td>Closer to residential areas and public transport</td>
</tr>
<tr>
<td>Old age home</td>
<td>1.00 ha</td>
<td>Closer to other public facilities like hospitals</td>
</tr>
<tr>
<td>Reformatory</td>
<td>2.00 ha</td>
<td>Closer to institutional nodes</td>
</tr>
<tr>
<td>Orphanage</td>
<td>2.00 ha</td>
<td>Closer to institutional nodes</td>
</tr>
</tbody>
</table>

Table 28: Special Facilities

### Recreational Facilities

<table>
<thead>
<tr>
<th>USE</th>
<th>SUGGESTED SIZE</th>
<th>KEY LOCATIONAL CONSIDERATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Children’s playground</td>
<td>0.04 ha</td>
<td>Within walking distance to educational facilities and creches</td>
</tr>
<tr>
<td>Sportsfields</td>
<td>4.00 ha</td>
<td>Within walking distance to educational facilities and creches</td>
</tr>
<tr>
<td>Swimming pool</td>
<td>0.10 ha</td>
<td>Within walking distance to educational facilities and creches</td>
</tr>
<tr>
<td>Stadium</td>
<td>6.00 ha</td>
<td>Closer to institutional nodes</td>
</tr>
</tbody>
</table>

Table 29: Recreational Facilities

### Residential

<table>
<thead>
<tr>
<th>USE</th>
<th>SUGGESTED SIZE</th>
<th>KEY LOCATIONAL CONSIDERATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homestead in peri-urban setting</td>
<td>2 500 m²</td>
<td>Existing densities, other land uses</td>
</tr>
<tr>
<td>Homestead in rural setting</td>
<td>5 000 m²</td>
<td>Existing densities, other land uses</td>
</tr>
<tr>
<td>Residential – peri urban</td>
<td>Up to 1 500 m²</td>
<td>Closer to main routes and centres. Closer to services</td>
</tr>
<tr>
<td>Residential – rural</td>
<td>Up to 2 500 m²</td>
<td>Basic services and subsistence agriculture.</td>
</tr>
</tbody>
</table>

### Commercial and Industrial Facilities

<table>
<thead>
<tr>
<th>USE</th>
<th>SUGGESTED SIZE</th>
<th>KEY LOCATIONAL CONSIDERATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Businesses and shops</td>
<td>Up to 2 000 m²</td>
<td>Centrally located in main nodes and public transport terminals</td>
</tr>
<tr>
<td>Industrial</td>
<td>Up to 2 000 m²</td>
<td>Centrally located in main nodes and public transport terminals, generally away from residential areas</td>
</tr>
</tbody>
</table>

Table 30: Residential

Table 31: Commercial & Industrial Facilities

In addition the following building lines should be observed:

- 100m inland from high water mark
- 100m from river edges
- 30m from edge of national roads
- 15 m from edge of provincial road
- 8 m from edge of local roads
- 100 m from traditional authority boundary
10.3. SECTION 3: LAND USE APPROACH

10.3.1. CONTEXT

This section of the report makes attempts towards a framework that may be followed in the management of land uses in the rural areas. It will however only succeed with a coordinated effort between the traditional leaders, municipal councillors and the officials from both iNgonyama board and eThekwini municipality.

10.3.2. RESIDENTIAL USES

The following figure is a summary of key steps to be followed in the allocation of residential land. The steps are detailed further below:
A) SITE IDENTIFICATION BY APPLICANT

1. Applicant identifies piece of land and approaches induna for process and availability enquiries.
2. Induna clarifies khonza fee and provides an application form set out as below:

<table>
<thead>
<tr>
<th>INFORMATION</th>
<th>DETAILS</th>
</tr>
</thead>
<tbody>
<tr>
<td>AREA</td>
<td></td>
</tr>
<tr>
<td>LOCAL INDUNA</td>
<td></td>
</tr>
<tr>
<td>SITE LOCATION –</td>
<td></td>
</tr>
<tr>
<td>Description of</td>
<td></td>
</tr>
<tr>
<td>approximate location</td>
<td></td>
</tr>
<tr>
<td>using key features</td>
<td></td>
</tr>
<tr>
<td>and adjoining</td>
<td></td>
</tr>
<tr>
<td>household names.</td>
<td></td>
</tr>
<tr>
<td>FULL CONTACT DETAILS</td>
<td></td>
</tr>
<tr>
<td>OF THE APPLICANT</td>
<td></td>
</tr>
<tr>
<td>Current address</td>
<td></td>
</tr>
<tr>
<td>PREVIOUS ADDRESS</td>
<td></td>
</tr>
<tr>
<td>Reference letter</td>
<td></td>
</tr>
<tr>
<td>from area of origin</td>
<td></td>
</tr>
<tr>
<td>INTENDED USE FOR</td>
<td></td>
</tr>
<tr>
<td>THIS SITE</td>
<td></td>
</tr>
<tr>
<td>Is there community</td>
<td></td>
</tr>
<tr>
<td>member supporting</td>
<td></td>
</tr>
<tr>
<td>this application at</td>
<td></td>
</tr>
<tr>
<td>this stage e.g.</td>
<td></td>
</tr>
<tr>
<td>adjoining homeowner</td>
<td></td>
</tr>
<tr>
<td>CURRENT ZONING</td>
<td></td>
</tr>
</tbody>
</table>

Table 32. data form

3. Applicant fills the form, with correct information and forwards application to the South LUMS department of the municipality.
4. It should be noted that the municipality’s interest should largely be an evaluation of proposed land use.

B) MUNICIPAL PROCESS

5. The South LUMS department should be responsible for assessing this application and should do so within a period of 14 days.
6. The municipality occupies itself with checking the following issues
   6.1. Coordinates for the proposed site.
   6.2. Spatial Development Framework for use suggested for the site.
   6.3. Land Use Management System for proposed uses.
   6.4. SEA plan if available or any environmental tool specific to this site.
   6.5. IDP for any intended project that may affect the site.
   6.6. Natural features
   6.7. Physical constraints
      6.7.1. Roads
      6.7.2. Infrastructure
   6.8. Land legal
      6.8.1. Services
      6.8.2. Land claims
      6.8.3. Mineral rights
   6.9. Cooperative governance
      6.9.1. Any development interest from other government structures.
      6.9.2. Any legal trigger from various legislations

7. Within a specified time frame (not more than 14 days) municipality checks for compliance issues as outlined above and contact the applicant to collect municipality’s comments supporting or rejecting the proposed use on the site.
8. Once collected the applicant will forward this to the relevant Induna who will facilitate the process of neighbors consent.
9. It is important to distinguish between residential processes that generally require no lease agreements and commercial processes that should be more intricately considered and where a lease should be issued.

C) LOCAL NEIGHBOURS’ PROCESS
Induna issues proforma for approval, a copy of which will be forwarded to tribal secretary

Municipal official GPSs outer boundaries

Municipality returns application after 14 days

Induna informs neighbours & applicant of date of inspection and also confirms with Municipality

Neighbours engage and confirm boundaries

Municipal official updates the plan

Site inspection is done

Applicant notified

Figure 42: neighbor process flow
This component only clarifies the neighbours process which is generally relevant to residential sites but may be considered for business sites as well.

10. Once induna has received the comments from the municipality, s/he sets a date for neighbours to witness and confirm boundaries.

11. It is rather appropriate that this only follows municipal comments. As an example the targeted site may have environmental constraints and in this instance not supported by the municipality and it will therefore be pointless to involve neighbours.

12. It is highly recommended that izinduna are trained and equipped to use GPS so that they could pick up coordinates of boundaries. In the absence of such training the municipal official will also attend the neighbours’ inspection and pick up these boundary coordinates.

13. On the said date the neighbours will engage and if in agreement confirm the boundaries.

14. It is suggested that a proforma letter be issued in triplicate by induna to the tribal authority office and the municipality confirming the boundary.

<table>
<thead>
<tr>
<th>INFORMATION</th>
<th>DETAILS</th>
</tr>
</thead>
<tbody>
<tr>
<td>SITE LOCATION</td>
<td></td>
</tr>
<tr>
<td>• Description of approximate location using key features and adjoining household names.</td>
<td></td>
</tr>
<tr>
<td>• coordinates</td>
<td></td>
</tr>
<tr>
<td>FULL DETAILS OF THE APPLICANT</td>
<td></td>
</tr>
<tr>
<td>CONTACT DETAILS</td>
<td></td>
</tr>
</tbody>
</table>

Table 33: Required info
D) COMMERCIAL APPLICATIONS

15. For **Small Business Operations** where no lease is required the process should follow steps 1 to 14 as outlined above.
16. Where a **Lease** is required then Ingonyama Board process kicks in. This is outlined in annexure B which was obtained from Ingonyama board.
17. However it is important that such process is coordinated with the municipal steps 5 - 7.
18. In addition Ingonyama process allows for consent from the local traditional authority as outlined in annexure C.