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## ANNEXURE 1: MAPS
PART 1: SITUATION ANALYSIS

1.0 INTRODUCTION AND BACKGROUND

1.1 Study Brief

1.2 Study Aims

The functional area plan is to inform and coordinate the planning of Molweni, mainly the clustering of social and commercial facilities in the area.

The project aims to:

- Attract investment in the area by formulating a functional area plan within which a commercial node will be identified and the clustering of social facilities will be located in strategic areas within the functional area itself.
- Investigating on how the existing dispersed small scale commercial activities and social facilities by way of a central node will/can be consolidated.
- Conduct an infrastructural requirements assessment. This will include roads and waste water to support the functional area.
- Conduct an investigation on opportunities that will/could link the area to the surrounding areas and provide cost implications to achieve the linkages.

1.3 Project Objectives

The main objectives of this project are to:

- Provide a vision and framework for coordinating and informing both the public and private investment and development in Molweni;
- Facilitate the development of a well-integrated, dignified, vibrant, safe and attractive environment for local residents and visitors;
- Encourage sustainable private businesses and job creation in this economically depressed area;
- Assess the social facilities and services backlog in relation to eThekwini Social Facilities Standards;
- Identify and provide sustainable responses to existing bulk infrastructure and services constraints including roads and sewerage disposal.

1.4 Understanding Nodal Functional Area Concept

The notion of a Nodal Functional Area Plan is to provide a vision and framework to coordinate and inform both public and private investment. It also aims to direct the physical development and management of all initiatives to deliver a well-integrated, pedestrian-friendly, safe and attractive environment for residents and visitors.

Nodal Functional Area Plan determines the desired direction of growth for the node and advocates a variety of public realm projects to foster new relationships between the public and private realms. Thus, functional area plans focuses on areas where there is a concentration of activities (i.e. core area of node).

Nodal Functional Area Plan main objective would be to:

- Provide a clear spatial structure for the node, with strong image forming elements;
- Identify a system of quality public spaces and streetscape elements to create an environment that is conducive to economic investment and fosters healthy community interaction;
- Assign land uses or land use baskets to certain parcels of land in order to ensure the efficient use of land and the optimal integration of land uses with the movement patterns and public space system;
- Provide clear development and urban design guidelines to manage investment and development in the node; and
- Identify catalytic public sector led projects that are required to kick-start the development of the node.

1.5 Overview of the Study Area

1.5.1 Regional Context

The study area commonly known as Molweni, falls within the Outer West sub-area or functional district of EThekwini Metropolitan area. The Outer West is in extent of 78,438ha which makes up 34% of the municipal region which accommodates an estimated of 577,500 people which makes up 16.5% of the municipal population. (Ethekwini Municipality, 2010).

The study area is situated within ward 9 of the Metro, in the north eastern part of the Outer West functional district and is bounded by Kloof and Forest Hills to the south, Waterfall and KwaNgcolosi to the west, Inanda to the east and Umzinyathi to the north. It has an extent of approximately 2,268ha which is about 0.02% of the Outer West functional district.

In its present state, the study area functions as a dormitory area for people working in the surrounding more affluent suburbs and commercial centres such as Waterfall, Hillcrest, Kloof and Pinetown.

Figure 1: Study Area – Provincial Context
1.5.2 Movement and Linkages

Inanda Road is the main access road to the study area. It traverses the entire study area from north to south, and west to east. The Inanda Road provides a link from Hillcrest to Pinetown through Molweni. In the area of uMngeni a section of road branches off Inanda Road in a north-easterly direction towards Inanda Dam.

In this area, vehicular movement is primarily towards the surrounding centres of employment to the west and south. Internal movement is very poor and very limited, and the topography is also an impediment that disallows better flow and movement.

Pedestrian movement is also disorganised and is primarily along the road verges without any clearly demarcated pedestrian walkways or crossways. Residents have become accustomed to the use of tracks that run through and in between houses which is sometimes over people’s properties.

1.5.3 Demographics

In 2010, the population of Molweni was estimated to be just over 20,000 people. However, the population distribution per “izigodi” or sub-areas is not uniform. In the Lower Molweni it was recorded to have the highest population which was approximately 14,108 people, 4,018 people were estimated in the Upper Molweni whilst, in Langefontein and Tin Town there were 2,310 and 199 people respectively.

1.5.4 Economic Overview

Molweni is predominantly a low income area, which is identified as a neighbourhood node within the Spatial Development Framework (SDF). On average, 32% of households earn less than the minimum living level required to sustain a household with 4 people. This is situation is exacerbated by the fact that an estimated 40% of people in the employable bracket are employed. Only 17% of the 40% are employed within the functional area which suggests higher spending on travelling expenses and ultimately economic spillages.

1.5.5 Environmental Overview

Studies have found that the Molweni area occupies 74 000ha of both land and water that incorporates high biodiversity value total DMoss within the metro. The area has several natural assets which consist of biological assets, ecosystems, sub-soils, land and water areas. In terms of Ezemvelo KZN Wildlife C-Plan and MinSet data, Molweni has some areas of high irreplaceability and non-negotiable reserves however; land transformation in favour of settlement development has reduced these areas.

The Umgeni River which defines the study area north, east and south boundary forms the main physical barriers that separate the settlement to its surrounding settlements. The Umgeni River and its tributaries are also a major source and informant of the prevalent biodiversity. Added to this is location of the study area along the undulating landscape with hills and valleys of the Valley of a Thousand Hills.

The richness of the areas biodiversity has the potential to provide both social and economic benefits such as providing recreation areas and tourism areas respectively. Such potential becomes obvious during the annual Duzi Marathon.

Molweni has a vast amount of grasslands which are an essential life-support system, important rainfall collectors in catchments and defence system against soil erosion and desertification.

1.5.6 Built Environment

In terms of the SDF, the study area is situated in the urban development line within which urban development is permitted. However; this line also promotes a more convenient, efficient, equitable and sustainable settlement form. Therefore; all environmentally sensitive areas within the study area must be protected.

The built form of the study area is a difficult one to define, in that it takes different forms throughout the area. The upper Molweni area, predominantly areas north of Inanda Road could be said to be the better developed with appropriate housing structures and supporting infrastructure whilst. There are pockets within the study area where government housing projects have been delivered, and in these areas the conditions are also slightly better. However; there are still areas that are largely under developed, even though some are adjacent to better developed areas, such development has simply not been extended. An example of this is in Tin Town where there is evidence of some housing having been delivered but the overall conditions in terms of services, infrastructure and the general aesthetic appearance is way below acceptable standards.

In general the areas to the north and nearest to the Inanda Road are better developed and peri-urban in nature whilst, the areas to the south are predominantly rural and less developed. Even though the areas of a rural nature are less developed, these are still formal whilst in the northern peri-urban area there are a number of informal structures.
1.5.7 External Influences

The study area is also strategically located between three major economic hubs of the western entity of Hillcrest and Waterfall, eastern entity Inanda, Ntuzuma, and KwaMashu (INK) and the south western entity of Pinetown and New Germany. As a result, these are the main centres of employment for Molweni in particular Hillcrest-Waterfall and Pinetown-New Germany and these only yield limited economic benefits. In essence, the money available in Molweni comes from these centres but sadly it is also spent there meaning there is no money that is left to circulate in the Molweni area.

The more affluent suburbs surrounding Molweni do not yield any social benefits for Molweni because the facilities available in these areas are inaccessible to the people of Molweni. Even though facilities might be said to be open to the public however; the costs associated with their use is out of reach for poor communities.

1.6 Approach

1.6.1 A Strategic Focus

(i) From the outset, a strategic focus needs to be introduced into the process, to avoid peripheral or relatively unimportant analysis and discussions. We will be mindful from the outset that the final product needs to provide the Municipality with:

- an understanding of the study area;
- a vision and conceptual framework for the town centre; and
- a detailed implementation plan for the town.

The Molwen area needs to be understood within the context of the local economy and in relation to its surrounding areas, to ensure that conclusions will lead to appropriate responses and interventions.

1.6.2 Consultation and Participative Process

The success of a project of this nature and magnitude relies heavily on a well-balanced process involving technical analysis and evaluation, supported and informed by a focused participation and consultative process. These two processes need to constantly inform each other, thereby ensuring that the final product is technically feasible, financially sustainable and that it has the buy-in of all relevant role players/stakeholders.

The brief also highlights the critical need for a stakeholder engagement process that is highly focused outcomes based and strategic. Therefore it is also very important to make sure that no one is left out; everyone must have an opportunity to participate, we would strive to ensure that the process is transparent.

1.6.3 Concept of Community

The associated concepts are those of:
- Local community development and
- Community-driven development

Local community development focuses on the development of members of the community in domains of social, economic, cultural, knowledge, skill, institutional, technological, etc as well as infrastructure and natural environment. The outcome is a high quality of life and prosperity. Such transformation takes place at local level where individual, families and households live, obtain and use various livelihoods and socially interact. The opportunity to transform the lives of the poor is best located within the social, economic and institutional dynamics of communities. According to the Economic and Social Commission for Western Asia [UN. 2004] “community-driven development is a process whereby the local community improves its capacity to use social capital and, through collective action, enhances its level of participation in the development process.

It should be emphasised that a community is not a homogenous organic lot but is comprised of different groups with varying capacities, identities, power and networks. Collective and collaborative community development efforts are pursued through participatory system buttressed by formal and informal institutional frameworks.

Sustainable communities must possess high bridging and binding social capital and social cohesion that makes it possible for enduring collective and collaborative efforts of community members to transform and develop their communities. Such transformation and development should have a “staying power”, must not be reversible but should be continuously and be progressively upgraded.

1.6.4 Scope of Capacity Building

Capacity building should cover:
- Local actors
- Local institutions (community)
- Local government and its systems and processes
- Governance system and processes
- All primary stakeholders

1.6.5 Optimum Use of Existing Information

The Project Team understands and appreciates that public funds are limited and should be used optimally therefore; it is imperative to obtain and utilize all existing relevant literature and data to avoid any duplication which results in wasteful expenditure.

1.6.6 Holistic Perspective

A critical element of the approach is that we will strive to integrate in the deliberations the social, economic, financial, institutional, and natural and built environment aspects of the planning realm.

1.6.7 The Need for Alignment

The Nodal Functional Area Plan should:
- leverage on existing development effects in the area;
- enhance efforts on the ground;
- fill development gap where these exist;  
- eschew from developing new parallel structures to the ones that are already in existence; 
- optimise economies of scale, and
not reinvent the wheel of development efforts

### 1.6.8 Spatial Analysis

Extensive use will be made of GIS-based techniques in the spatial analysis, evaluation and proposal generation phases of the project. Maps and diagrams convey concepts much more effectively than extensive reports, and it is proposed that optimum use be made of these techniques.

### 1.7 Structure of this report

This report has been structured in the following manner;

**Introduction and Background:** This section of the report is intended to provide an overview of the project background, the intended objectives as well as an overview of the Study Area. Reference is made to the terms of reference and an approach is proposed for the project roll out and implementation.

**Literature Review:** This section of the report considers those planning documents which have been prepared for the municipal area which also include the study area. Emphasis is made to those elements that are relevant in the preparation of the Nodal Functional Area Plan. The plans considered include; the Integrated Development Plan 2009/10, the Draft Spatial Development Framework, Spatial Development Plan and other relevant documents.

**Legislation and Policy Overview:** This section of the report considers pieces of legislation and policy that are primarily of relevance to the Spatial Development Framework but emphasis is made on the policy implications that are considered in the context of Nodal Functional Area Plan.

**Situation Analysis:** This is the section of the report that pays emphasis on the Study Area starting by giving an exact definition of its boundaries and from there it makes use of Planning Analysis approaches to define the nature and character of the Study Area, and those factors which are critical consideration points in the preparation of an Nodal Functional Area Plan. The section is concluded by a SWOT Analysis that is conducted for the Study Area, relevant to the Nodal Functional Area Plan.

### 2.0 LITERATURE REVIEW

#### 2.1 EThekwini Integrated Development Plan

The eThekwini Metropolitan’s “Integrated Development Plan 2006/2007/2010/11 (IDP)” and beyond is the business plan that will guide development and growth of the eThekwini Municipal area over the next 5 years. It focuses on helping to realise the vision that “By 2020 eThekwini Municipality will be Africa’s most caring and liveable City.”

The eThekwini’s IDP promotes growth and development through achieving its 2020 vision of becoming Africa’s most caring and liveable city. Thus, once eThekwini citizens are able to enjoy these basic elements listed below the vision would have been achieved:

- Ease of movement in the Municipality.
- A safe environment in all parts of the municipal area.
- Access to economic opportunities.
- Resources to what the Municipality offers.
- A clean and green Municipality, capable
- Homely neighbourhoods.
- Access to services, in particular municipal, health and education services

EThekwini Municipality has made six certain key choices in achieving their long term visions/ goals. One of their goals is to Promote Densification and Strategic Management for New Growth Areas. One of the major objectives of this project would be to create integration, compaction and linkages; this endeavour is to ensure that people are brought closer to services and amenities and there’s more. The project will bring economic opportunities closer to the Molweni community.

The IDP strategy recognizes that the Municipality has to make hard choices, not in a vacuum, but within a spatial framework. This will be done by connecting actions, resources and expenditure across the metropolitan area to unlock sustainable growth, whilst ensuring that inequitable, inefficient and unsustainable consequences of past development patterns are addressed over a period of time.

EThekwini Metro promotes 3 factors which is equity, efficiency and sustainability:

**Equity** promotes an equitable city by: reducing infrastructure and service disparities; redressing imbalances in the location of employment opportunities; providing adequate, accessible and affordable housing opportunities; promoting integration by linking and reducing distances between people, places and activities; and making the city work better for the disadvantaged.

**Efficiency** promotes an efficiency city by: promoting more compact development by emphasis of high densities and reduce urban sprawl; create integration between places where people live and work; development in areas of greatest potential; effective use of infrastructure and facilities; promoting cost effective movement systems; promote accessibility though improving relationship between people, places and activities; and promoting a well-managed spatial form.

**Sustainability** promotes a sustainable city by: promoting optimal use of remaining land opportunities; promoting the inherent value of the natural and built environment and introducing environmentally
2.2 EThekwini Spatial Development Framework

The SDF is a strategic document and is prepared at a broad scale. It is meant to guide and inform land development and management. The SDF should:

- Give effect to principles contained in the Development Facilitation Act, Act No. 67 of 1995;
- Determine spatial priorities;
- Set out spatial form objectives;
- Detail strategies and policies for the above that indicate desired patterns of land use, address spatial reconstruction, and provide decision making processes relating to the nature and location of development;
- Provide basic guidelines for a Land Use Management System;
- Outline a Capital Investment Framework;
- Contain a Strategic Environmental Assessment;
- Identify programs and projects for development of land; and
- Align with neighboring SDF.

The benefits for a SDF are as follows:

- It provides a logical framework for assessing locational priorities.
- It recognizes that regions are dynamic social and economic systems, which responds to change, opportunities and limitations. They are always in a process of growth and transformation. The objective of every investment project is to maximize the impact of and the total accessibility to the type of facility in question.
- It allows for the new investments to be informed and roads to that which have gone before. Each investment modifies the rhythm of flows and patterns of accessibility. This in turn, ensures that at each stage facilities and services have the greatest chance of being viable.

In the SDF diagram the Molweni Area falls outside the urban edge but it falls within the Urban Development Line. The Urban Development Line (UDL) is a demarcation of where future urban development will take place in the long term. This line will promote convenient, efficient, equitable and sustainable settlement form. One of the main purposes of UDL is that it enforces density targets and physical development patterns within specific time horizons and until such time as growth and development pressures require its review. Within the Molweni area there is proposed Future Residential to meet the demand of the increasing population. The Inanda Dam is in close proximity to the Molweni area; which Inanda Dam is a tourist destination. Umzinyathi is a rural investment node which is just north of Molweni.

2.3 EThekwini Spatial Development Plan (Outerwest)

The extent of the Outer West jurisdiction is approximately 78,438ha, which is 34% of the municipal region with a population of 577,500 people (i.e. 16.5% of the total population of eThekwini Municipality). Predominantly the Outer West is covered by the traditional authorities. A major portion of metropolitan open space system (50%) which requires protection is found in this region; which contributes to the GDP stands at 6.6%.

In terms of achieving a sustainable development for the broader Metropolitan region as well as the local region the Outer West Spatial Development Plan (OWSDP) has an imperative role to play by following key factors listed below to achieve this:

- Priority Environmental Management Area
- Strategic Industrial Expansion
- Strategic Residential & Commercial expansion
- Key Metro International and Domestic Tourism Destination
- Social Upgrading

There are conceptual approaches in the OWSDP which will benefit, influence development and create job opportunities. These conceptual approaches include:

- Establishment of N3/M13 corridor as the main economic movement system linking the Outer West to other economic centres and supporting key strategic economic development;
- Protecting the natural environments; and
- Establishing the Urban Development Line which the Molweni area falls

Hierarchies of nodes have been established, consolidated and distributed throughout the Outer West area which include Urban Nodes, Rural Nodes, Tourism and Recreation Nodes and new opportunity areas. These nodes will play a pivotal role in serving as investment and access points which provide convenient and efficient access to a hierarchy of commercial, community and social facilities. The Molweni Node is classified as a Urban Neighborhood Hood. The other areas which fall within the Western Suburbs such as Waterfall (which is in close proximity to Molweni), Hillcrest and Kloof are classified as Urban Nodes. The main objective of the OWSDP is to create a movement system which improves linkages, circulation and access; but also to reinforce the social, economic and spatial importance of the movement network. The OWSDP needs take into consideration the increasing population and the increasing demand for housing. By observation of growth patterns and trends it’s estimated that Outer West has the potential to accommodate 247,019 dwelling units. (OWSDP & eThekwini IDP).

The largest concentration of people in the Outer West Area are in Mpmumalanga and Inanda Dam (28%), followed by Cato Ridge (15%), Western Suburbs – which Molweni falls within (12%) and Shongweni (11%) and Zwelitombu (6%). The Outer West is still extremely segregated in terms of income and developed areas provide little infill opportunity for mixed income groups. The middle-upper income housing demand in the Western Suburbs which had experienced unprecedented demand over the last few years has slowed down. The current trend is for more affordable residential units targeting the low-middle income group. Few remaining vacant pockets of land along Old Main Road and Inanda Road are now facing pressure for this type of development (OWSDP, 2009).

Metro Housing has a housing backlog in excess of 200,000 units comprising informal settlements, backyard shacks, overcrowding and homeless. The long term Metro Housing programme has identified the need for some 21,000 housing units for the Outer West that predominantly take the form of in-situ upgrading and small pockets of greenfields development. The bulk of these projects are located in Molweni, Mpmumalanga, and the settlements around Cato Ridge, Fredville, Salem, KwaXimba and a small extent in Zwelitombu. Some of the challenges facing the delivery of housing for the poor include, the complexity of implementing in-situ upgrades e.g. community dynamics, relocation logistics, need for greenfields sites to accommodate relocations prior to implementation and the community reluctance to
accept housing typologies which support densification strategies (e.g. walk-ups and high rise). There is also a shortage of affordable housing opportunities (OWSDP, 2009).

2.4 Molweni Phase 1 Housing Project EIA

EThekwini Metro has established three formalised housing townships in close proximity to each other in the Upper Molweni area. These housing projects are the Madameni, Lower Langefontein 5 and Molweni Phase 1 housing project. The main purpose of the projects is in-situ upgrading, with relocating of people from environmentally sensitive areas and the construction of new houses from those people who will be relocated.

There will be no bulk road or upgrading of existing bulk roads will be required. In terms of water supply and reticulation, the existing bulk water supply has sufficient capacity to the developments. But there is no bulk sewer infrastructure available to serve the development, therefore septic tank systems will be established within each unit. In terms of eThekwini electricity, the bulk existing electrical infrastructure is adequate to serve the development. The stormwater will be directed along road surfaces to either discharge through energy dissipaters directly into watercourses or collected by side inlets at strategic points and directed into sub surface spigot and socket pipes systems. These pipe systems will then discharge via headwall outlets with erosion protection into natural watercourses.

The Molweni area in terms of its climate is vulnerable to infrequent intense storms and strong winds. The wetland delineation of the Molweni site identified the presence of seven wetland systems located within the incised valleys and valley head areas extending into the site from the south east. In terms of the type of soil the Molweni area is underlain by Natal Group Sandstone and the soils derived there from. Hence, in terms of engineering characteristics three geotechnical zones were identified across the site.

3.0 LEGISLATION AND POLICY OVERVIEW

3.1 National and Provincial Legislation and Policies

The Nodal Functional Area Plan is guided by Legislation and Policy similar to that of Spatial Development Framework is at a National, Provincial, and Local level. Legislation and Policy relevant to Urban Renewal includes:

- South African Constitution and Principles of Sustainable Development
- The Municipal System Act (MSA)
- The Planning and Development Act (PDA)
- Environmental Conservation Act (ECA)
- The National Environment Management Act (NEMA)
- The KwaZulu-Natal Heritage Act (1997)
- Social Housing Policy
- Breaking New Ground (BNG) Strategy
- The National Spatial Development Perspective (NSDP)
- The Provincial Growth and Development Strategy (PGDS)
- Provincial Spatial Economic Development Strategy (PSEDS)
- Comprehensive Rural Development Programme
- Nodal Functional Area Plan

3.1.1 South African Constitution and Principles of Sustainable Development

The Vision, Mission and Principles articulated below are underpinned and guided by South Africa's new Constitution which provides within its Bill of Rights that everyone has the right:

a. to an environment that is not harmful to their health or well-being and
b. to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that:

i. prevent pollution and ecological degradation;
ii. promote conservation; and
iii. Secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.

The Fair and Equitable Distribution of Benefits. Benefits arising from the use and development of South Africa’s biological resources will be fairly and equitably shared. The rights to use biological resources will be equitably allocated, and will recognise

a. that it may be necessary to limit access in order to ensure conservation and sustainable use;
b. that within the constraints of sustainable use, the socioeconomic upliftment of disadvantaged communities is an important criterion upon which decisions will be based;
c. that where peoples’ historical rights of access to natural resources have been removed or constrained this should be reviewed and redressed in line with the other guiding principles; and
d. The Constitutional rights of owners of biological resources.

The South African Government has three overriding priorities:

- the eradication of poverty;
• the sustainable development of its economy; and
• the social development of its people.

These priorities, together with the national environmental policy presently being formulated, provide the context within which consideration will be given to achieving the three objectives of the Convention on Biological Diversity:

• the conservation of biological diversity;
• the sustainable use of biological resources; and
• the fair and equitable sharing of benefits arising from the use of genetic resources.

Chapter 7 of the Constitution deals with local government and section 152 deals with the objectives of local government. It indicates that these objectives are:

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

3.1.2 Municipal Systems Act

Section 23 (1) of the act indicates that a municipality must undertake developmentally-orientated planning and Section 24 (1) indicates that planning undertaken by the municipality must be aligned with and compliment plans of other municipalities and organs of state.

Section 26 of the Act indicates that a core component of an IDP is a SDF which must include the provision of basic guidelines for a land use management system for the municipality.

Section 35 of the Act also indicates that a SDF contained in an IDP prevails over a plan as identified in Section 1 of the Physical Planning Act (No. 125 of 1991).

Regulation promulgated in terms of the act outline the following requirements for a SDF:

*A spatial development framework reflected in a municipality’s integrated development plan must:

a) give effect to the principles contained in Chapter 1 of the Development Facilitation Act, 1995 (Act 67 of 1995);
b) set out objectives that reflect the desired spatial form of the municipality;
c) contain strategies and policies regarding the manner in which to achieve the objectives referred to in paragraph (b), which strategies and policies must:

i) indicate desired patterns of land use within the municipality;
ii) address the spatial reconstruction of the municipality; and
iii) provide strategic guidance in respect of the location and nature of development within the municipality.

d) Set out basic guidelines for a land use management system in the municipality;
e) Set out a capital investment framework for the municipality’s development programmes;
f) Contain a strategic assessment of the environmental impact of the spatial development framework;
g) Identify programmes and projects for the development of land within the municipality;
h) Be aligned with the spatial development frameworks reflected in the integrated development plans of neighbouring municipalities; and
i) provide a visual representation of the desired spatial form of the municipality, which representation—

i) must indicate where public and private land development and investment should take place;
ii) must indicate desired or undesired utilisation of space in a particular area;
iii) may delineate the urban edge;
iv) must identify areas where strategic intervention is required; and
v) Must indicate areas where priority spending is require.

These legislative requirements provide a clear framework for the development of the SDF and provide a legislative checklist for its contents.

3.1.3 The Planning and Development Act Principles (6 of 2008)

The Law must:

Promote a uniform planning and development system that treats all citizens of the Province equitably;

a) Provide a fair and equitable standard of planning and development to everyone in the Province, while accommodating diversity such as urban and rural needs;

b) Incorporate and build on good practices and approaches to planning and development which have evolved outside of the formal planning and development system;

c) Promote a planning and development system that redresses the historic injustices perpetuated by a fragmented planning and development system;

d) Favour lawful development;

e) Be clear, including the relationship between different laws;

f) Be practical;

g) Promote certainty;
h) require timely action by decision makers; guide decision makers;

i) Require decision makers to obtain expert advice before making a decision; and

j) be enforceable; and

WHEREAS planning and development decisions must be taken by local government, with appeals being resolved by an independent tribunal of experts appointed by the responsible Member of the Executive Council in consultation with the Executive Council of the Province.

Principles of Planning Development Act

The KwaZulu-Natal Planning and Development Act (PDA) 2008(Act No.6 of 2008) the PDA directs and regulates planning and development in the Province. The PDA applies to the whole Province including the Ingonyama Trust Land.

A municipality planning scheme is used to manage development, is formally approved and consists of a map and regulations to manage land use and development. All developments need to be in accordance with the scheme, which can be obtained from the local or metropolitan municipality.

- To promote spatial restructuring and development;
- To promote sustainable development;
- Relating to development in general;
- Relating to land use management systems;
- To enhance inter-governmental planning and development;
- On participation and human resource development; and
- On administrative fairness, decision making and dispute resolution

IMPLICATIONS FOR NODAL FUNCTIONAL AREA PLAN

There is a need to:
- provide LUMS that Provides for flexibility and other alternatives and opportunities for more open-ended outcomes on rural areas;
- give credence to indigenous systems of land use management in the traditional areas;
- Provide LUMS that would address the unique challenges experienced in rural and to allow for planning of urban rural.
- Consultative process must be followed to ensure that structure plans reflect the developmental needs like parks, nature areas, housing and sports fields of the communities they serve, all local authorities should be busy with this process to ensure that service delivery is implemented in the most efficient manner.

3.1.4 Environmental Conservation Act

The Environmental Conservation Act (No. 73 of 1989) is intended to provide for the effective protection and controlled utilisation of the environment. Part five of the Act refers to the control of activities that may have a detrimental effect on the environment. Section 21 of the Act refers to the Minister being permitted to identify those activities, which in his opinion have substantially detrimental effects on the environment, whether in general or in respect of certain areas. Any change in land use from agriculture, or undetermined use, to any other land use, and any use for nature conservation or zoned open space to any other land use, is subject to a mandatory EIA (Environmental Impact Assessment).

Act No 73, 1989, Part VIII, Section 31, makes provision that:

If in the opinion of the Minister (of Environmental Affairs and Tourism) the competent authority, local authority or the government institution concerned, any person performs an activity, or fails to perform any activity as a result of which the environment is, or may be, seriously damaged, endangered or detrimentally affected, the minister, competent authority, local authority or government institution, as the case may be, may be in writing direct such person to cease such activity; or to take steps that the Minister, competent authority, local authority or the government institution may deem fit within a period specified in the directive, with the view to eliminating, reducing or preventing damage, danger or detrimental effect.

3.1.5 National Environmental Management Act

The National Environmental Management Act (No. 27 of 1998) was drawn up to provide for co-operative, environmental governance by establishing principles for decision-making on matters affecting the environment, institutions that will promote co-operative governance and procedures for co-ordinating environmental functions exercised by organs of state; and to provide for matters connected therewith.

Section 28 of the Act that falls within Chapter 7 – Compliance, Enforcement and Protection can be related to future developments. Part 1 of the Chapter focuses on environmental hazards and Section 28 relates to the duty care and redemption of environmental damage. Section 28 provides that every person who causes, has caused, or may cause, significant pollution or degradation of the environment, must take reasonable measures to prevent such pollution or degradation from occurring, continuing or reoccurring or, insofar as such harm to the environment is authorised by law or cannot reasonably be avoided or stopped, to minimise and rectify such pollution or degradation of the environment.

IMPLICATIONS FOR THE NODAL FUNCTIONAL AREA PLAN

- The protection of ecological processes, natural systems and the natural beauty as well as the preservation of biodiversity in the natural environment as an important component in our natural environment;
- The promotion of sustainable utilization of species and ecosystems and the effective application and re-use of natural resources; the protection of the environment against disturbance, deterioration, defacement, poisoning, pollution or destruction as a result of man-made structures, installations, processes or products or human activities, to protect our rural land and ensure that development takes place in the most sustainable manner.
- The establishment and maintenance of acceptable human living environments in accordance with the environmental values and environmental needs of communities.

IMPLICATIONS FOR NODAL FUNCTIONAL AREA PLAN

- The act explains that everyone has the right to an environment that is not harmful to his or her health or wellbeing;
- the State must respect, protect, promote and fulfil the social, economic and environmental rights of everyone and strive to meet the basic needs of previously disadvantaged communities;
- inequality in the distribution of wealth and resources, and the resultant poverty, are among the important causes as well as the results of environmentally harmful practices;
- sustainable development requires the integration of social, economic and environmental factors in the planning, implementation and evaluation of decisions to ensure that development serves present and future generations;
- everyone has the right to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that prevent pollution and ecological degradation;
- Urban renewal must be able to meet the needs of society by ensuring that it complies with the environmental standards that have been put in place according to NEMA.
3.1.6 Social Housing Act

The Social Housing Act of 2008 was drawn up to establish and promote a sustainable social housing environment; to define the functions of national, provincial and local governments in respect of social housing; to provide for the establishment of the Social Housing Regulatory Authority in order to regulate sustainable, socially and economically integrated communities, situated in 9 of the constitution, and interested parties who wish to enter the social housing market; to provide for the establishment, development and maintenance of socially and economically viable communities to ensure the elimination and prevention of slums and slums conditions; to social, physical and economic integration of housing development into existing urban or town areas through the creation of quality living environments; to medium to higher density in respect of social housing development to ensure the economical utilisation of land and services; to the provision of social, community and recreational facilities close to social housing development; to the expression of cultural identity and diversity in social housing development; and the suitable location of social housing stock in respect of employment opportunities.

The General principles applicable to social housing include:

In giving priority to the needs of low and medium income households in respect of social housing development, the national, provincial and local spheres of government and social housing institutions must:

a) Ensure their respective housing programmes are responsive to local housing demands, and special priority must be given to the needs of woman, children, child-headed households, person with disabilities and the elderly;

b) Support the economic development of low to medium income communities by providing housing close to jobs, markets and transport and by stimulating job opportunities to emerging entrepreneurs in the housing services and construction industries;

c) Afford residents the necessary dignity and privacy by providing the residents with a clean, safety and healthy environment;

d) Not discriminate against residents on any of the grounds set out in section 9 of the constitution, including individuals affected by HIV and AIDS;

e) Consult with interested individuals, communities and financial institutions in all phases of social housing development;

f) Ensure the sustainable and viable growth of affordable social housing as an objective of housing policy;

g) Facilitate the involvement of residents and key stakeholders through consultation, information sharing, education, training and skills transfer, thereby empowering residents;

h) Ensure secure tenure for residents in social housing institutions, on the basis of the general provisions governing the relationship between tenants and landlords as set out in the rental housing act, 1999 (Act No. 50 of 1999), and between primary housing co-operatives and its members as set out in the co-operatives Act, 2005 (Act No.14 of 2005);

i) Promote:

i. an environment which is conducive to the realisation of the roles, responsibilities and obligations by all role-players entering the social housing market;

ii. training opportunities for stakeholders and interested parties who wish to enter the social housing market;

iii. the establishment, development and maintenance of socially and economically viable communities to ensure the elimination and prevention of slums and slums conditions;

iv. social, physical and economic integration of housing development into existing urban or town areas through the creation of quality living environments;

v. medium to higher density in respect of social housing development to ensure the economical utilisation of land and services;

vi. the provision of social, community and recreational facilities close to social housing development;

vii. the expression of cultural identity and diversity in social housing development;

viii. the suitable location of social housing stock in respect of employment opportunities;

ix. the conversion of upgrading of suitable residential and non-residential buildings for social housing use;

x. incentives to social housing institutions and other delivery agents to enter the social housing market;

xi. an understanding and awareness of social housing processes;

xii. transparency, accountability and efficiency in the administration and management of social housing stock;

xiii. best practices and minimum norms and standards in relation to the delivery and management of social housing stock;

xiv. the provision of institutional capacity to support social housing initiatives;

xv. the creation of sustainable, viable and independent housing institutions responsible for providing, developing, holding or managing social housing stock and;

xvi. The use of public funds in a manner that stimulates or facilitates private sector investment and participation in the social housing sector.

3.1.7 Social Housing Policy

The primary objectives of the Social Housing Programme include:

- Contributing to the national priority of restructuring South African society in order to address structural, economical, social and spatial dysfunctionalities and imbalances to achieve Government’s vision of an economically empowered, non-racial, and integrated society living in sustainable human settlements.

- Improving and contributing to the overall functioning of the housing sector and in particular the rental sub-component, as far as social housing is able to contribute to widening the range of housing options available to the poor.

The most important elements of urban restructuring include:

(i) Spatial Restructuring

Spatial restructuring is necessary to address the needs of the urban poor (most black), who are located far away or completely excluded from the economic opportunities. The majority of these people also have limited or inadequate access to housing. Therefore, it is necessary to restructure the town by means of identifying appropriately located land for the provision of social housing, where places work, live, and play can be created.

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<th>IMPlications FOR THE NODAL FUNCTIONAL AREA PLAN</th>
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<td>- Any Housing encompasses more than just a house. It is a basic need; a productive asset with important macroeconomic linkages; a stake in the urban system; it is shelter in the basic sense as protection from the elements; it is security; collateral for access to credit; and an investment for future accumulation of value to be realised in an eventual resale or through intergenerational transfer.</td>
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Government strives for the establishment of sustainable, socially and economically integrated communities, situated in areas allowing convenient access to economic opportunities as well as health, educational and social amenities, within which all South Africa’s people will have access on a progressive basis, to:

- a permanent residential structure with secure tenure, ensuring privacy and providing adequate protection against the elements; and
- portable water, adequate sanitary facilities including waste disposal and domestic electricity supply.

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The Guiding Principles for Social Housing include:

- Promoting urban restructuring through the social, physical, and economic integration of housing development into existing areas.
- Promoting establishment of well-managed, quality rental housing options for the poor.
- Responding to local housing demand.
- Delivering housing for a range of income groups, in such a way as to allow social integration and financial cross subsidisation.
- Supporting the economic development of low income communities in a number of ways.
- Fostering the creation of quality living environments for low-income persons.
- Promoting a safe, harmonious, and socially responsible environment both internal to the project and in the immediate urban environs.
- Promoting the creation of sustainable and viable projects.
- Encouraging the involvement of private sector where possible.
- Facilitating the involvement of residents in the project and/or key stakeholders in the broader environment.
- Ensuring secure tenure for the residents of projects, on the basis of the general provisions for the relationship between residents and landlords as defined in the Housing Act, 1997 and the Rental Act, 50 of 1999.
- Supporting mutual acceptance of roles and responsibilities of tenants and social landlords, on the basis of the general provisions for the relationship between residents and landlords as defined in the Rental Act, 50 of 1999, the Co-operatives Act, 91 of 1981c, as well as the Social Housing Act, 16 of 2008.
- Facilitation, support and driven by all spheres of government.
- Ensuring transparency, accountability and efficiency in the administration and management of social housing stock.
- Promoting the use of public funds in such a manner that stimulates and/or facilitates private sector investment and participation in the social housing sector.
- Operating within the provisions of the Constitution, 1996, the Public Finance Management Act, 1 of 1999, the Preferential Procurement Policy Framework Act, 5 of 2000, and other statutory procurement prescripts.

**IMPLICATIONS FOR NODAL FUNCTIONAL AREA PLAN**

- Urban renewal programs need to identify appropriately located land for social housing developments close to employment opportunities.
- The development plan must be consultative to ensure that its proposals address the real needs of communities.
- Identify slum areas that need to be upgraded and eradicated.
- This development needs to ensure that the spatial, economical, and social integration is achieved.
- It needs to identify and promote areas of high density to reduce costs of providing services.

**Social Restructuring**

Social housing can be used as a tool to create stable social environments that integrate with town with the rest of the LM. This also means the creation of a “sense of place” where residents have a sense of belonging and feel secure.

Social housing can also be used to achieve social integration amongst people of different racial groups and backgrounds.

At its inception, the Housing Policy and Strategy (1994) focused on stabilizing the environment to transform the extremely fragmented, complex and racially-based financial and institutional framework inherited from the previous government, whilst simultaneously establishing new systems to ensure delivery to address the housing backlog. The significant achievements of this programme have been recognized both nationally and internationally. Significant socio-economic, demographic and policy shifts have also occurred over the past 10 years.

**Plans in Place for Breaking New Grounds Strategy**

The new human settlements plan reinforces the vision of the Department of Housing, to promote the achievement of a non-racial, integrated society through the development of sustainable human settlements and quality housing. Within this broader vision, the Department is committed to meeting the following specific objectives:

- Accelerating the delivery of housing as a key strategy for poverty alleviation
- Utilising provision of housing as a major job creation strategy
- Ensuring property can be accessed by all as an asset for wealth creation and empowerment
- Leveraging growth in the economy
- Combating crime, promoting social cohesion and improving quality of life for the poor
- Supporting the functioning of the entire single residential property market to reduce duality within the sector by breaking the barriers between the first economy residential property boom and the second economy slump.
- Utilizing housing as an instrument for the development of sustainable human settlements, in support of spatial restructuring.

**IMPLICATIONS FOR THE NODAL FUNCTIONAL AREA PLAN**

- Encouraging Social (Medium-Density) Housing – Social Housing is generally medium-density and this housing intervention may make a strong contribution to urban renewal and integration. Social housing interventions may also be used to facilitate the acquisition, rehabilitation and conversion of vacant office blocks and other vacant/disposed buildings as part of a broader urban renewal strategy.

- Enhancing housing design - Within the rural context, there is a need to make housing interventions more effective, to enhance the traditional technologies and indigenous knowledge which are being used to construct housing in rural areas and to improve shelter, services and tenure where these are priorities for the people living there.11 Within the urban context, there is a need to focus on “changing the face” of the stereotypical “RDP” houses and settlements through promotion of alternative technology and design.

- Addressing housing quality - an audit will be taken to develop a programme to address the poor quality of houses.
3.1.9 Provincial Growth and Development Strategy (PGDS)

This document was adopted in 2004 and has been taken further through the Provincial Spatial Economic Development Strategy which will be highlighted below. This section gives a broad overview of the objectives of this plan.

Government is mandated to restructure the process of service delivery and development in the Province and this is achieved through the alignment of the actions of the three spheres of government, the different government sectors, and the various strategic frameworks. The PGDS is a tool whereby national spheres of government can direct and articulate their strategies, and where local government is able to reflect its human, fiscal and financial support needed to achieve the desired outcomes.

The PGDS facilitates proper coordination between the different spheres of government and it ensures that provincial departments align their activities with those of local government. In essence, it facilitates inter-governmental alignment and guides the activities of various agencies and role players.

Key elements of the strategy include:

- 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; and
- Implementation, Monitoring and Evaluation: it is necessary to implement well designed and effective implementation plans which are linked to targets, milestones and timeframes.

Like the SDF, but at a more macro level, the PGDS provides a framework for public and private sector investment by highlighting areas of development opportunity. It also addresses key issues of implementation blockages whilst providing strategic direction.

3.1.10 Provincial Spatial Economic Development Strategy

The Provincial Growth and Development Strategy - alignment with the MDGs

The provincial Government has developed its own Growth and Development Strategy (PGDS), which is closely aligned to both the Millennium Development Goals (MDG) and national development goals. The PGDS is essentially a tool through which the provincial government can address the legacies of the apartheid space economy, promote sustainable development and ensure poverty eradication and employment creation.

The key challenge government faces is to effectively align and harmonise the MDGs and PGDS; and to harness and align the fiscal, financial and human resources at its disposal towards eradicating poverty, creating employment and laying the foundations for accelerated economic growth.

The PSEDS focuses fixed infrastructure investments in areas of economic development potential (whether realised or dormant), and prioritises areas of greatest need based on poverty densities.

The PSEDS takes the implications of the importance of the service sector in most districts into account. Many of the smaller rural centers and towns represent important centers of service, and particularly government activity.

The PSEDS builds on the concept of developing a comprehensive network of centers throughout the province which would support the delivery of services. Services delivered would be determined by various nodes according to a hierarchy of places.

The KZN provincial government prepared a provincial as well as District profiles as a basis for understanding the province. Issues considered included:

- An analysis of the levels of social service provision in each district;
- Population dynamics;
- The Gross Value Added (GVA) per district and local municipality; and
- Levels of water and sanitation provision.

The PSEDS is a response to these profiles and it sets out to:

- Focus where government directs its investment and development initiatives;
- Capitalising on complementarities and facilitating consistent and focussed decision making; and
- Bringing about strategic coordination, interaction and spatial alignment.

The PSEDS identifies priority sectors in the KZN economy which include:

- The agricultural sector (including agri-processing) and land reform;
- The industrial sector;
- The tourism sector; and
- The service sector (including government services).
The strategy is aimed at transforming the structure of the economy and narrowing and eventually eliminating the gap between the first and second economies. The pillars on which this strategy rests are as follows:

- Increasing investment in the province
- Skills and capacity building
- Broadening participation in the economy
- Increasing competitiveness
- Narrow and eventually eliminate the gap between the first and second economies;
- Address the issues of income poverty, past racial discrimination and spatial disparities in the provision of public goods, services and infrastructure; and
- Create employment, fight poverty and support black economic empowerment

It is imperative however that corridors and nodes are supported by an adequate and appropriate network of services including transport, electricity, water, housing, health, education and community safety, amongst others. Further planning is required in order to detail projects required to ensure the successful implementation of the PSEDS.

### 3.1.11 Comprehensive Rural Development Programme

The Comprehensive Rural Development Programme (CRDP) is aimed at being an effective response against poverty and food insecurity by maximizing the use and management of natural resources to create vibrant, equitable and sustainable rural communities. A CRDP must improve the standards of living and welfare but also rectify past injustices through rights-based interventions and address skewed patterns of distribution and ownership of wealth and assets. The strategic objective of the CRDP is therefore to facilitate integrated development and social cohesion through participatory approaches in partnership with all sectors of society.

The strategic objective of the CRDP is to achieve social cohesion and development among rural areas. Comprehensive Rural Development is one of the key priorities of government, aimed at creating sustainable rural communities throughout the country. The programme will seek to achieve poverty alleviation through job creation, poverty alleviation through job creation, promoting local economic development, leading to a more efficient and sustainable land reform process. There is also a focus on integrated and broad-based agrarian transformation to improve land reform programmes. Strategic investments in economic and social infrastructure are also key pillars of the programme.

**Functional Area**

**Purpose**

The purpose of this section is to provide a social and economic (socio-economic) input into the development of the Nodal Functional Area Plan. The purpose of the functional area plan is to establish a detailed and focused framework for the planning and co-ordinating the sustainable development of the Molweni Functional area. This section will review the study area’s social and economic trends and patterns in order to draw a future perspective of the socio-economic condition of Molweni functional area. The purpose of the trends analysis is to enable a deeper understanding of Molweni’s development patterns in terms of existing socio-economic opportunities, buying power and investment prospects. The ultimate goal of this section is to formulate a socio-economic guiding vision and framework for the development of the area both in terms of the space economy and people.

**Statement**

The first leg of the strategy was to develop a coherent and integrated broad-based agrarian transformation an improved land reform programme, strategic investments in economic and social infrastructure in rural areas.

- Poverty alleviation through job creation
- Promotion of local economic development (LED)
- Integrates principles of environmental sustainability through requiring this in transport provision and provision of waste management systems.
- The first leg of the strategy was to ensure that there was economic and social infrastructure development in South Africa’s rural communities. This would be done through a proactive strategy of upgrading infrastructure, some of which would also serve as a tool of social transformation, by providing roads, electricity, water and telecommunications to support sustainable economic development.
- As part of the rural development strategy, government will also support initiatives that promote other forms of economic potential of rural areas including tourism, light manufacturing and cultural work. Various cultural activities such as traditional music, arts and crafts, traditional sports can be useful income generating activities in our rural areas and should be harnessed.

**Problem Statement**

The study area is an area that is not too far from economic opportunities and is in close proximity to tourist attractions (i.e. Inanda Dam) however, this area is facing many challenges which hinder on its developmental progress. A few of the problems are highlighted below:

- The study area has limited development and economic diversity as there are no industries within the area or an identified or defined commercial node.
- Insufficient service levels to meet the community’s current and future demands.
- Lack of integration of facilities
- Community members travel a long distance to get to their place of work, shopping and social needs.
- Disintegrated settlement area
- There is no local economic strategy for the area to drive or direct economic development
- There are poor linkages or access which makes it hard and costly for the community to reach surrounding commercial and economic opportunities including travelling to places of work.
- There are more people than social facilities and supporting infrastructure.

These are a few issues that are problematic within the study area however; the problems are much more than the ones identified and these problems will be identified further through a SWOT analysis.

**Study Area**

An earlier section of this report has already given an overview of the study area. The intention is not to repeat what has already been mentioned but there is critical need to build on it, in order to provide more detail on Key Status Quo elements.

**Economic Analysis (Urban-Econ, 2011)**

**Purpose**

The purpose of this section is to provide a social and economic (socio-economic) input into the development of the Nodal Functional Area Plan. The purpose of the functional area plan is to establish a detailed and focussed framework for the planning and co-ordinating the sustainable development of the Molweni Functional area. This section will review the study area’s social and economic trends and patterns in order to draw a future perspective of the socio-economic condition of Molweni functional area. The purpose of the trends analysis is to enable a deeper understanding of Molweni’s development patterns in terms of existing socio-economic opportunities, buying power and investment prospects. The ultimate goal of this section is to formulate a socio-economic guiding vision and framework for the development of the area both in terms of the space economy and people.
4.3.2 Project Background

EThekwini municipality has three main development tools, which guide development in the Molweni area. These are: The Integrated Development Plan (IDP); Spatial Development Framework (SDF); and South Spatial Development Plan (SSDP). The Molweni area has been identified using these tools as an area that needs priority detailed planning interventions that should inter alia set the following directives for the local area:

1. Land Use and Development Management.
2. Structure and Co-ordinate Economic Development
3. Curb problems associated with urban sprawl and low density settlement.
4. Unlock strategic land parcels to promote development associated with land allocation and economic development.
5. Encourage private public sectors investment in identified node and functional area

4.3.3 Methodology

In order to deliver the socio-economic input and contribution, a demand based approach was adopted as an overall project approach. However, each phase of the report followed its own specific sub-approach. The following are the specific approaches and research methods for each phase of our assignment:

SECTION TWO: Situational Analysis: A Desktop research was undertaken in parallel with stakeholders’ consultation processes. The desktop study comprised of the following sources of data:

Desktop:
- Quentec Regional Dataset
- eThekwini Transport Authority (ETA) 2010 Demographic Forecasts study
- Municipal Strategic documents such as IDP, SDF, SSDP

Consultation processes:
- Meetings and workshops with municipal stakeholders, such as: Economic Development Unit (EDU), Planning, Tourism, and the general Public, and Local Councils and Amakhosi

The approach for this section consisted of the following models:
- Growth trend model
- Contribution analysis & Distribution analysis
- Tress Technique
- Location Quotient

SECTION THREE: Vision and Strategy Formulation: Following the same methodology of the desktop study, with the following approach:
- GIS based income Expenditure & Buying power analysis

4.3.4 Situational Analysis

This section of the report is about the existing social and economic dimensions of the project area. This section extensively examines the demographical situation of Molweni; it reviews the area’s soft and hard socio-economic aspects.

4.3.5 Boundary Delineation

Molweni functional area is functionally classified into the following sub-areas for appropriate and manageable information packaging (See Figure 2 below):

1. Langerfontein sub-area;
2. Upper Molweni sub-area;
3. Tin Town sub-area; and
4. Lower Molweni sub-area.
4.3.6 Contextual Location of Molweni

The area of Molweni is located in the north eastern part of the outer west planning entity of eThekwini Metropolitan Municipality. The area is situated in ward 9 which is bounded by Kloof and Forest Hills to the South, Waterfall and KwaNgcolosi to the West, Inanda to the East and uMzinyathi to the North. The study area measures 2,268Ha of the outer west 78,438Ha.

The main road that gives access to Molweni is Inanda road. The road connects the settlement to the Pinetown-New Germany node. In terms of the Outer West spatial functional district, Molweni sits on the Inanda Dam Local Area Plan. The functional area is also strategically located between two major economic hubs of the northern entity (Inanda Ntuzuma KwaMashu) and western entity (Pinetown-New Germany). However, due to a challenging topography of the settlement, Molweni is remote and inaccessible. The Umgeni River forms one of the main physical barriers that separate the settlement to its northern entity.

Figure 3 above depicts the microeconomic context of Molweni. As indicated, Molweni is juxtaposed between the municipal environmental feature of (Inanda Dam) and (Pinetown-Kloof) commercial nodes.

The socio-economic Implications of Molweni’s location are that:

→ The settlement is currently locked and isolated from its immediate surroundings because of the restrictive topography and limited movement networks, i.e.: the area is located just under 7km from the Pinetown industrial hub, but because of the challenging topography and poor movement network, the area is directly inaccessible to the Pinetown areas.

→ Economic opportunities and employment prospect are thus undermined.

→ Spatial interaction and economic spill over and again is limited and narrow.

→ Socio-economic livelihoods are poor and undeveloped in comparison to the immediate surroundings.

Sources: Google Map and Urban-Econ (2011)
4.3.7 Demographics & Economic Assessment

Demographic studies are considered a useful information sources for understanding population dynamics. Through demographic profiling, government is better guided at resources allocation and the type of resources various communities need.

4.3.8 Population Profile and Forecast

In 2010, Molweni Functional Area total population was estimated to be just over 20,000 people however; population distribution was not uniform across each per sub-area. Lower Molweni area recorded the highest population. It had approximately 14,108 people, followed by Upper Molweni with 4,018 people and Langerfontein and Tin Town had 2,310 and 199 respectively. The 2007-2010 trend analysis indicated an average population growth of 0.1% per annual.

The graph below displays population figures adapted from the ETA 2010 Demographical study.

Figure 4: Population – ETA; 2010

The graph below illustrates the sub-areas percentage of population proportion based on the ETA 2010 demographical study. As indicated Lower Molweni contributes the highest population within the project area, it accounts for 68% of the area’s population.

Figure 5: Population per sub-area

The ETA demographic study further forecasted the 2015-2020 population growth rates. The following graph displays the findings of the projections.

Figure 6: 2015-2020 ETA Population Forecast

On average, the settlement’s population growth rates from 2010-2020 are expected to increase at 3% per annum for all the sub-areas. Based on this trend, it can be clearly deduced that the settlement’s population structure will not drastically change within the near future. The most populated areas will continue to rise in numbers, whilst the least populated areas will remain on that steady growth rate. Lower Molweni is forecasted to still lead in population growth rates while in actual fact, the area’s population will not increase per say, but in fact it will decrease and level off in the 2015-2020. Overall, this population trend is probably tied to the medium term housing developments plans within the functional area.
4.3.9 Age and Gender Profile

The 2007 ward profile age distribution indicated that 43% of the population belongs to the economically inactive population- the 0-20 years age group plus the 65 years and above category, while 57% belongs to the to the economically active group- the 21-64 years category. This highlights two factors: 1. the area has a youthful population that is within the working age group and 2. Dependency ratio is low is low within the settlement, unless if distorted by high levels of unemployment, which will be addressed in the later sections of the report. The graph below shows the 2007 age distribution.

Figure 7: 2007 Age Distribution

Sources: Municipal Ward Profile (2007) and Urban-Econ (2011)

The 2007 gender breakdown sat at 48% females and 52% males, thus pointing a proportional gender distribution.

Table 1: Gender Breakdown

<table>
<thead>
<tr>
<th>GENDER BREAKDOWN</th>
<th>Female</th>
<th>Male</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>48%</td>
<td>52%</td>
</tr>
</tbody>
</table>

The ward racial profile shows black race dominance; 62% of the ward are black people, white people make up 37% and Indians constitute 1%. However this picture may be drastically distorted due to the numeration of the entire ward 9, which includes the high income suburban areas of Crestview and Crestholm. It is estimated that Molweni functional area has a higher black race than currently depicted by the ward profile picture, it is estimated that the area has 98% of its population belonging to the black race, the remaining 2% might be distributed between coloured’s and Indian people.

Figure 8: Ward Racial Structure

4.3.10 Household Income and Employment Levels

Income levels are closely associated with poverty, as poverty is a function and symptom of lack of economic opportunities, especially employment opportunities.

Current households’ income levels distribution in the catchment area are predominantly even, approximately 33% of all households falls between the three household income levels:

Table 2: Household Income Distribution

<table>
<thead>
<tr>
<th>Income Category</th>
<th>Categories</th>
</tr>
</thead>
<tbody>
<tr>
<td>R0 - R1 600</td>
<td>Low Income</td>
</tr>
<tr>
<td>R1 601 - R5 000</td>
<td>Middle Income</td>
</tr>
<tr>
<td>R5 001 and above</td>
<td>High Income</td>
</tr>
</tbody>
</table>

Sources: ETA and Urban-Econ (2011)

The table below breaks down the sub-areas household monthly income levels and the percentage of the population that falls within these income brackets.

Table 3: Household Monthly Income Profile

<table>
<thead>
<tr>
<th>HOUSEHOLD MONTHLY INCOME PROFILE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Income Levels</td>
</tr>
<tr>
<td>Sub-Area</td>
</tr>
<tr>
<td>Langerfontein</td>
</tr>
<tr>
<td>Upper Molweni</td>
</tr>
<tr>
<td>Lower Molweni</td>
</tr>
<tr>
<td>Tin Town</td>
</tr>
</tbody>
</table>

Approximately 24% of Langerfontein and Tin Town households earn between the low income household monthly income level and 33% earn between the middle income category, and 44% earn high income levels. Lower Molweni and Upper Molweni households have a similar income structure, these sub-areas households monthly income earnings are broken down into; 40% low income, 30% middle income and 30% high income.

Upper Molweni and Lower Molweni indicated an identical income profile. Almost 40% of the population earned between the low income and approximately 30% earned between middle incomes, while the 30% remainder belonged to the high income.

It is estimated that 2,891 people are employed in Molweni, of which 4,336 are unemployed. An estimated 506 of the 2,891 working people in Molweni are employed within the local area and 2,385 are employed outside the local area. Hence Molweni has a high rate of commuters travelling to places of employment.
Table 4: Employment Status

<table>
<thead>
<tr>
<th>ESTIMATED EMPLOYMENT-UNEMPLOYMENT LEVELS</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Employed Persons in Molweni</td>
<td>2 891</td>
</tr>
<tr>
<td>Unemployed Persons in Molweni</td>
<td>4 336</td>
</tr>
<tr>
<td>ETA Average Localised Employments in Molweni</td>
<td>508</td>
</tr>
<tr>
<td>Urban-Econ’s Worker-Force commuting estimates</td>
<td>2 385</td>
</tr>
</tbody>
</table>

A summary of employment and Income Levels:

- The settlement of Molweni has high levels of poverty and underdevelopment
- A large majority of the settlement’s population are unemployed - approximately 4,336 people who are actively searching for employment are unemployed.
- Almost 40% of Molweni’s residents fall below the 2009 minim living level (MLL) of R2,279\(^1\) for an average household size of 4 people per household.
- Commuting patterns for work purposes are high within the area, thus indicating local economy. It is estimated that approximately 2,385 people commute outside of Molweni for work reasons.

4.3.11 Molweni Functional Area Densities and Typologies

The overall densities of the settlement are indicative of the peri-urban location of the area. A large majority of the area is sparsely populated and contained by a DMoss area. The areas along Inanda road are generally denser than those further away. The settlement almost has a linear sort of development, arranging the parcels along Inanda Road to be more compact and concentrated in terms of densities. The pictures below shows a snapshot of the area’s densities and some of the housing typologies therein.

Picture 1: Langefontein Densities and Housing Typologies

These pictures above not only depict the functional area’s typical settlement typology but they show the existing poor socio-economic conditions. The decay and quality of the second picture, tells you volumes about the income of the area.

Picture 2: Typical Lower Molweni Peri-Urban Settlements

4.3.12 Molweni Employment Sectors

The figure below suggests that all employment sectors perform equally in all the sub-areas. The most important trend that has to be really taken from this is that construction and building is the largest employment sector. This is a common trend in poor communities where government funded housing projects become the main employment pools. This is positive because it is in line with one of the objectives of the government’s Breaking New Ground (BNG) strategy. However; this is not sustainable in the long term as housing projects will eventually come to an end. The only other positive outcome would be the transfer of skills.
4.3.13 Socio-Economic Synopsis

The preceding section on socio-economic issues can be summarized as follows:

1. In 2010 population values for the whole functional area were estimated to be just over 20,000 people. Lower Molweni was the most populated sub-area, it had 14,108 people.
2. The 2010-2020 population forecast indicated an average annual growth rate of 3%.
3. The functional area income profile indicated an equal split between the low income (R0 - R1 600), middle income (R1 600 - R5 000) and high income (R5 000+) distribution. Approximately 23% of the population belonged to the low income bracket and 33% to the middle income and 44% to the high income.
4. The future income divide (2020) is expected to drastically transform from the current equal divide. A large number of households will belong to the low income bracket and the high income bracket will depreciated as a result.
5. The functional area employment levels are fairly low. An estimate of 1,893 (7%) of the total population (of 27,289 people) is employed.
6. The general socio-economic conditions of Molweni Functional Area are poor and undeveloped. Shopping Leaks high within the settlement.

7. A large majority of the settlements population works outside of the study area, resulting in higher commuting costs and higher economic leakages. This also means lesser household income, ultimately lower living levels.

4.4 Environmental Overview

4.4.1 Introduction

Studies have found that the Outer West entity of which Molweni area part of, is one of the areas with high biodiversity value, this is further identified in the Durban Metropolitan Open Space System (DMOSS) which states that the area occupies 74 000ha of both land and water that incorporates high biodiversity value total DMOSS within the metro. The value of D’MOSS comes from the ecosystem goods and services that are provided by the biodiversity contained in the different habitat types included in the system. “Open space systems has been re conceptualised as an important asset that has social, economic and ecological value and which requires active protection of sustainable open space system would ensure that the natural resources base of the city would continue to supply environmental goods and services (e.g. waste treatment and provision of water) in long term.”

Natural resources2 of Molweni show evidence of having a large economic and ecological benefit. There are many types of benefits provided by environmental resources:

- Individuals derive benefits from using natural resources as areas to relax or recreate, for example to swim, hike, fish, bike games, or bird watching.
- Individuals also derive benefits from natural resources that are not related to the direct use of the resource. For example, many people value the survival of endangered species such as birds, spotted owls, and eagles even though they never expect to see one.

The natural resources need to be protected and used sustainably to ensure that the community of Molweni are able to reap the benefits of having such rich resources. The balancing of social, economic, and environmental needs of the area must result in the efficient use of all resources to ensure all developments occur within the carrying capacity of the natural resources and in a sustainable manner. The ecosystem provides goods and services to the people of Molweni. It should be noted that environmental management need not be limited to protection or preservation but also areas may be identified for opportunities that a particular environment may provide such as the rehabilitation of wetlands, eco-tourism opportunities etc.

4.4.2 Natural resource Asset Base

Natural assets are assets of the natural environment. These consist of biological assets, land and water areas with their ecosystems, subsoil assets and air. Existing natural asset in Molweni include:

- River system;
- Forests;
- Wetland; and
- Grasslands

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2 Natural Resources: Materials or substances such as minerals, forests, water, and fertile land that occur in nature and can be used for economic gain.
The existing natural resource asset needs to be conserved so that this asset continues to provide eco-services and benefits to an expanding population of Molweni. This will entail the restriction of development within important natural areas as well as the management of adjacent and upstream land uses and activities which impact on the ecosystems contained within these natural areas. Nodal development must avoid all DMOST areas. A map is provided which indicates all DMOST areas and has symbolized those using Geographical Information System (GIS).

4.4.3 Natural Resource Management

The locals have to be involved in natural resource management, including being passive recipients of benefits from protected areas or other instances where communities are not actually empowered to do much ‘management’ themselves. In order for communities to actively manage and conserve natural resources, based on their own social and economic interests in the sustainable use of those resources, requires that local people have a reasonable degree of control over the land and resources. They must be able to make decisions about resource use, access, and allocation. There has to be a public participation process that takes place to ensure that people within the community are involved with development happening in their area to ensure that they are also beneficiaries of biodiversity resources. Community involvement in natural resource management is where communities participate through co-management agreements or other forms of involvement.

The main goals for natural resource management include:
- The need to identify key habitats needed by protected species,
- The need to protect and enhance habitats, and
- The need to maintain a healthy ecosystem that benefits all species that will ensure the survival of identified rare and threatened species, and species of special concern.

Once habitats that are sensitive or critical to species protection have been identified, programs must be developed to protect those habitats, particularly during periods (e.g., breeding) that are critical to species survival. Activities or projects that could affect those habitats must be evaluated (e.g., pollutant discharge, construction activities). Appropriate actions to eliminate or minimize negative impacts must be incorporated into specific project plans. "Protection and Identification of habitat are necessary to ensure healthy populations of plants and animals. In general, habitat identification should be focused in such a way that the entire ecosystem is protected and conserved. However, certain species of plants and animals have been identified as rare, threatened, endangered, or of special concern. These species and their habitats need to be identified within the boundaries and managed in such a way that their continued existence will be assured." (Brookhaven Science Associates, 2006)

Environmental restoration efforts to remove sources that could pollute or have polluted habitats (i.e., landscape solids removal reduced presence of caesium) must ensure that:
- Access to critical habitats is restricted;
- Locations of endangered species breeding populations are kept confidential;
- Routine activities (e.g., road maintenance) that are not expected to affect habitats are allowed to proceed;
- In some cases, habitats must be enhanced to improve survival or increase populations of desirable species whose populations have dwindled due to development or habitat destruction, even if they are not otherwise officially listed as threatened or endangered.

Unmanaged fire burning methods are also an issue of concern that threatens habitats. A Fire Management Plan is necessary to ensure that communities are provided with training and equipment to prevent and control veld fires.

4.4.4 Environmental Assessment

Minset is a function or tool within C-Plan (Conservation Planning Software) that is used to identify a ‘minimum set’ of sites (planning units) that would fulfill the aim firstly of achieving the conservation targets within a number of constraints that can be set by the user e.g. avoid highly productive agricultural land, or land adjacent to major highways. It presents the most efficient solution to achieving conservation targets and other land use constraints. Irreplaceability can be defined in two ways (Pressey et al 1994):

(i) The potential contribution of any site to a conservation goal or the likelihood of that site being required to achieve the goal;
(ii) The extent to which the options for achieving a system of conservation areas that is representative (achieves all the conservation targets) are reduced if that site is lost or made unavailable.

A map of irreplaceability values is, therefore, a map of options: in areas of high irreplaceability, all (most) extant habitat is required to achieve targets; in areas of low irreplaceability, there is greater flexibility in the array of available sites required to meet a regional conservation goal (Pressey 1999b).

The Minset output map (figure 10) shows areas that are already protected, ‘Mandatory Reserves’ and ‘Negotiable Reserves’. A mandatory reserve is an area that appears as totally irreplaceable on the irreplaceability map, since there are no other alternatives for achieving the conservation targets. Areas identified as negotiable reserves are the areas that the Minset function returns as the most efficient for achieving targets and constraints. However there are alternatives to achieving the targets and constraints but with less efficiency, and hence the designation of this area is still negotiable. Molweni is dominated by mandatory reserves according to the minset analysis, which is a totally irreplaceable area in the far eastern region.

According to the Minset map, Mandatory Reserves are identified in Langerfontein, Upper and Lower Molweni and Inanda areas.
The C Plan (see figure 11) is a systematic conservation planning package that runs with GIS software ArcGIS, which analyses biodiversity features and land units. C Plan is used to identify a national reserve system that will satisfy specified conservation targets for biodiversity features (Lombard et al. 2003). Biodiversity features can be land classes or species; targets are set in area units either for land classes, or as numbers of occurrence of species for species locality data set (Lombard et al. 2003). These units or measurements are used as surrogates for an unsampled data. The C Plan is an effective conservation tool when determining priority areas at a regional level and is being used in South Africa to identify areas of high conservation value. Most of Molweni falls under irreplaceability value -1 meaning that the conservation of the features within them is critical to meet conservation measures, the area is of high biodiversity sensitivity (see figure 11).

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4.4.5 Areas of High Biodiversity Value

These areas are identified in the mapping (see figure 11) as areas of high irreplaceability, and in the misnet data set they are designated as non-negotiable reserves. These areas are somewhat limited by land transformation in the municipality and include only small portions of the northern areas and southern areas of the study area.

The following management guideline considerations must be borne in mind for areas of high biodiversity value:

- This zone represents areas of natural vegetation and therefore any transformation of this area greater than 3Ha should be subject to impact assessment. Further any development greater than 1Ha would be subject to Full Environmental Impact Assessment.
- The local authority should negotiate with the property developers to incorporate land not to be used for development into Conservation Reserves. This can be achieved as part of authorization for development on submission of the plans.
- The Environmental Impact Assessment required for priority 1 zones should include a biodiversity assessment of the site and its biological value.
- The layout of the development should take biodiversity impacts and mitigation into account and as such should avoid areas of high biodiversity value.
- When building plans are submitted to the local authority for approval, they shall indicate whether the development constitutes a listed activity and if so include a copy of the Record of Decision (ROD) issued by DAEARD and an Environmental Management Plan (EMP) where required by the ROD.
- No construction of a listed activity under the NEMA EIA regulations may begin without authorization from DAEARD, the Municipality in its development control capacity should not, under any circumstances, authorize any listed activity until such time as DAEARD has given authorization for the activity to go ahead.
- Any unauthorized development should be reported immediately to the DAEARD.
- The width of survey paths shall be kept to the absolute maximum of 1 meter.
- Where areas have been set aside for conservation in the layout, such areas will have to be demarcated. This should be done before building starts, sites must be staked and should be fenced or cordoned off with Chevron Tape. This is with a view to preventing damage to conservation areas during construction and operation. The fencing used should be appropriate and should allow for the movement of small animals, which may be found in this area.
- In the conserved areas, only nature-related recreation and education shall be permitted, such as bird watching, walking and canoeing. These areas should be left as undisturbed as possible.
- Exotics should be avoided in landscaping of developments.
- Invasive aliens should be eradicated as part of landscaping and management plan for the development.
- As far as possible, medium density housing development in this zone should be clustered in order to minimize visual impact and the amount of land needed. This reduces development costs and also makes land available for conservation or open space purposes. Further advantages are wind protection and better controlled access to the development area.
- Landowners shall be made aware of the priority status of their land before purchase. Estate agents in the area could assist in this regard. The clearance certificate issued to each purchaser shall make note of the priority status, for the purchaser’s information, should the estate agent not have raised the issue.
- Landowners should be made aware of their responsibility to maintain and manage the vegetation on their land. The local council may need to provide assistance in the form of advice to landowners in high biodiversity value areas.
- Earthmoving equipment must be prohibited from the site until the environmental assessment has been approved and the vegetation to be conserved has been demarcated.
- The Local Council should not plant exotic trees or shrubs in areas of this category.
- Sub-divisional applications should be assessed in the light of proposed usage and the effect it would have on areas of high biodiversity value.

4.4.6 Durban Metropolitan Open Space System (DMOSS)

DMOSS (Figure 12) is a system of open spaces, of land and water that incorporates areas of high biodiversity value linked together in a viable network of open spaces. According to eThekwini Municipality, D’MOSS provides a range of ecosystem goods and services to all residents of Durban, including the formation of soil, erosion control, water supply and regulation, climate regulation, cultural and recreational opportunities, raw materials for craft and building, food production, pollination, nutrient cycling and waste treatment. Molweni has areas where it is environmentally sensitive for development and have been designated as DMOSS areas.

Goods and services provided by natural ecosystems are not understood or recognised by most people; as a result they are not valued. In most instances people who benefit from the natural resource base do so without having to pay for the goods and services that they use. “When we start to think about open space as ‘green infrastructure’ containing ecosystems that deliver a service much like a municipal water supply system, road or community health care facility, it becomes possible to value the open space system as a city asset. In 2003, the replacement cost of Durban’s environmental goods and services provided by the open space system (DMOSS) was conservatively valued at R3.1 billion per annum, excluding its contribution to the tourism sector.” (State of Biodiversity Report, 2009/2010)
4.4.7 Environmental Goods and Services

The following environmental goods and services are provided by DMOSS areas:

- Gas Regulation – Control of chemical composition of the atmosphere e.g. Carbon sequestration, oxygen and ozone production;
- Climate Regulation- Control of temperatures e.g. Urban heat amelioration and wind reduction;
- Disturbance Regulation – Control of large environmental fluctuations, e.g. Flood control, drought recovery and refuges from severe environmental events;
- Water regulations- control of water flow, e.g. capture and release of water by vegetated landscape for urban use;
- Water supply- storage of water, e.g. supply & storage of water by rivers, watershed & reservoirs for agricultural, industrial and household use;
- Erosion control – Storage of soil within an ecosystem, e.g. prevention of soil loss by vegetation covers and by capturing soil in wetlands;
- Soil formation – formation of soil, e.g. weathering of rock by water and accumulation of organic material in woodlands and wetlands;
- Waste treatment- Removal & breakdown of excess nutrients, e.g. break down of effluent in wetlands & detoxification of air pollution by vegetation;
- Pollination- Movement of pollen, e.g. pollination of flowers by bees to enable plant reproduction;
- Biological material- control of animal & plant population, e.g. predator control of prey species, rodent control & insect control;
- Food production – primary production of food fuel, craft work materials & house building materials.

4.4.8 Land Classes

The land classes (See Figure 13) of Molweni consists of various land class features that have been transformed due to human activity such as housing development.

(i) Settlements

The area has settlements that are of a peri-urban and rural nature. There are also settlements, particularly rural settlements to the north that have emerged on the land that is under DMOSS. The development of these settlements has transformed the land and effectively has reduced the biodiversity value of these areas. Settlement activity is not a once off activity, but also needs to be viewed in light of day to day practices by those who reside in those settlements.

(ii) Wetlands

Wetlands are places where the land is covered by shallow water: marshes, ponds, the edges of large lakes and rivers, and low-lying areas that flood regularly. Wetlands are great places to see a wide variety of bird life. Birds that feed and breed in freshwater wetlands include ducks and geese, wading birds like sandpipers and plovers, gulls and terns, herons, cranes, fish eagles, and a huge number of smaller birds like kingfishers, weavers, warblers and inches." (wwf.panda.org)

Any wetlands, including those which are identified over and above this map should be subject to the following guidelines:

- Infilling, drainage and hardened surfaces (including buildings and asphalt) should not be located in any of the wetland zones (i.e. permanent, seasonal and temporary) such activities generally result in significant impacts on a wetland’s hydrology, hydraulics and biota and on the goods and services wetlands provide.
- Hardened surfaces and erven should be located at least 15m outside of the outer boundary of the seasonal/permanent zone.
- Where the wetland has a particularly high biodiversity value, further buffering may be required, the width of which would depend on the specific requirements of the biota. This...
should be determined in consultation with Ezemvelo KZN Wildlife. The value of a wetland for biodiversity derives not only from features of the wetland but also from the quality of natural, non-wetland areas adjacent to the wetland, as many wetland dependent species such as the giant bullfrog (Pyxicephalus adspersus) require both wetland and non-wetland habitat.

(iii) Woodlands

Woodlands can be seen as vegetation formations dominated by trees but not to the extent that the canopies are continuous or overlapping. The National Forests Act defines woodlands as “a group of trees which are not a natural forest, but whose crowns cover more than five per cent of the area bounded by trees forming the perimeter of the group”. There are two types of woodlands in Molweni, these are open and close canopy forests.

The closed-canopy forests play an insignificant role in terms of wood production, but are a critical component of the environment and provide significant recreational areas (Owen and van der Zel, 2000). The forests also provide non-timber products for the surrounding communities, and for the market, on an informal basis. These products include gathered foods, medicinal plants, handcrafts and household items, fuel and construction wood which have not been quantified. In addition, local communities derive other non-consumptive goods and services such as spiritual and cultural benefits.

4.4.9 Vegetation

In the area of the valley of a thousand hills, the natural vegetation including that of the riparian zone has been depleted as a result of over utilisation of resources by the large local population. The area also
suffers severe invasion by alien plants. The result is increased erosion and sedimentation of the river, and bank instability both of which reduce health river health. Aquatic weeds are found throughout this resource unit, water lettuce, kariba weed and parrots feather.

The Eastern Valley Bushveld Vegetation type consists of semi-deciduous savannah woodland/thicket that has a prominent succulent component dominated by Euphorbia and Aloe species. These woodlands and thicket areas are characteristic of river valleys that run in a northwest to southeast direction where the plants of the steep north-facing slopes, especially, are typically xerophilous (adapted to a dry, hot environment) owing to high levels of insolation and low levels of precipitation. The Eastern Valley Bushveld vegetation type once approximately 10% of the EMA and is found mostly in river valleys associated with uMgeni and uMlass river catchments. Approximately 34% has been transformed, mostly by peri-urban settlements. (Durban Biodiversity Report; 2007)

The KwaZulu-Natal Sandstone Sourveld has elements of both grasslands and Savanna biomes and is typically dominated by short, species-rich grasslands with scattered shrubs. These grasslands occur on flat to rolling plateau tops and on steep valley sides in well drained, nutrient-poor, sandy soils. These areas often experience misty conditions that are important in providing additional moisture. This type of vegetation can be found in the EMA, especially in the western suburbs around Kloof and Hillcrest. (Durban Biodiversity Report; 2007)

Molweni has vast amount of grassland spreading from the entry point till the bottom with great mountain escarpments with a vast amount of biodiversity. Grasslands are one of the most essential life-support systems. Not only do they support a rich diversity of grasses, wild flowers and birds, but they also absorb and direct rainfall into the soil, collecting rainfall in catchment areas and reducing runoff. “Grasslands also bind the topsoil and in many cases are the only defence against soil erosion and desertification. The removal of grasslands will increase sedimentation in rivers and since many of the country’s major rivers have their catchments in grasslands, this could have a serious impact on water supply for human development.” (www.agriculture.kzn.gov.za). The destruction of grasslands will also impact negatively on the ability of the land to support agriculture, and this will ultimately affect the livelihood and food supply for a large proportion of the population of Molweni, as most people depend highly on agricultural production.

The table below provides a list of vegetation species that threatened, as well as their conservation status.

### Table 5: Molweni Threatened Vegetation Species

<table>
<thead>
<tr>
<th>NAME</th>
<th>Condition</th>
<th>BioConservation</th>
<th>Status</th>
<th>Area (Ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eastern Valley Bushveld</td>
<td>degraded</td>
<td></td>
<td>Near threatened</td>
<td>10.5158627156406</td>
</tr>
<tr>
<td>KwaZulu Natal Sandstone Sourveld</td>
<td>degraded</td>
<td></td>
<td>Critically Endangered</td>
<td>66.705949142552</td>
</tr>
<tr>
<td>North Coast Bushland</td>
<td>degraded</td>
<td></td>
<td>Critically Endangered</td>
<td>522.1679359512</td>
</tr>
<tr>
<td>North Coast Grassland</td>
<td>degraded</td>
<td></td>
<td>Critically Endangered</td>
<td>209.83720447824</td>
</tr>
<tr>
<td>Eastern Valley Bushveld</td>
<td>good</td>
<td></td>
<td>Near threatened</td>
<td>61.8224901455</td>
</tr>
<tr>
<td>KwaZulu Natal Sandstone Sourveld</td>
<td>good</td>
<td></td>
<td>Critically Endangered</td>
<td>77.20622994544</td>
</tr>
<tr>
<td>North Coast Bushland</td>
<td>good</td>
<td></td>
<td>Critically Endangered</td>
<td>57.379345876263</td>
</tr>
<tr>
<td>North Coast Grassland</td>
<td>good</td>
<td></td>
<td>Critically Endangered</td>
<td>41.195575652536</td>
</tr>
<tr>
<td>KwaZulu Natal Sandstone Sourveld</td>
<td>intermediate</td>
<td></td>
<td>Critically Endangered</td>
<td>39.925164134839</td>
</tr>
<tr>
<td>North Coast Bushland</td>
<td>intermediate</td>
<td></td>
<td>Critically Endangered</td>
<td>99.903501107985</td>
</tr>
<tr>
<td>North Coast Grassland</td>
<td>intermediate</td>
<td></td>
<td>Critically Endangered</td>
<td>10.0493861757</td>
</tr>
</tbody>
</table>

---

3 Biodiversity: The variety of life in the world or in a particular habitat or ecosystem
The table below provides a list of vegetation and plant species found within the Molweni area.

<table>
<thead>
<tr>
<th>TAXON</th>
<th>HABITAT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acalypha peduncularis</td>
<td>Gridia kraussiana</td>
</tr>
<tr>
<td>Aloe linschmitii</td>
<td>Grassland (KZN-SS) Helichrysum tubiflorum</td>
</tr>
<tr>
<td>Aloe parviflora</td>
<td>Grassland (KZN-SS) Helichrysum palagonioides</td>
</tr>
<tr>
<td>Ansellia africana</td>
<td>Dry forest, EVB</td>
</tr>
<tr>
<td>Anthericum coopert</td>
<td>Helichrysum pilosum</td>
</tr>
<tr>
<td>Aspidogyne oxaloida</td>
<td>Helichrysum pilosum</td>
</tr>
<tr>
<td>Aster kalanchoe</td>
<td>Helichrysum pilosum</td>
</tr>
<tr>
<td>Atalaya natalensis</td>
<td>Scarp Forest Hydrostachys polymorpha</td>
</tr>
<tr>
<td>Barleria netra</td>
<td>Hypoxis arachnoidea</td>
</tr>
<tr>
<td>Begonia homonyma</td>
<td>Scarp Forest/dry forest Hypoxis filiformis</td>
</tr>
<tr>
<td>Berhaya phapontica</td>
<td>Hypoxis rivae Scarp Forest</td>
</tr>
<tr>
<td>Brachylaena grandiflora</td>
<td>Grassland (KZN-SS) Hypoxis rigidula</td>
</tr>
<tr>
<td>Brunfelsia sp nov 2</td>
<td>Scarp forest, closed woodland Indigoboa hilaris</td>
</tr>
<tr>
<td>Callisperis laetevia</td>
<td>Lannea edulis var edulis</td>
</tr>
<tr>
<td>Callispellothrylos</td>
<td>Lecythis alata lata Scarp Forest ectomes</td>
</tr>
<tr>
<td>Ceropogia hygrophil</td>
<td>EVB Maytenus sp A (filiformis) Scarp Forest</td>
</tr>
<tr>
<td>Ceropogia mayet</td>
<td>Various Mammee synchonachium Scarp Forest</td>
</tr>
<tr>
<td>Ceropogia pachystema</td>
<td>EVB Melanopsis sturtana Scarp Forest</td>
</tr>
<tr>
<td>Clea gardosi</td>
<td>Forest Poliarpium mutans EVB</td>
</tr>
<tr>
<td>Crassula flavata</td>
<td>Cliff Peucedanum natans</td>
</tr>
<tr>
<td>Crassula multiflora fornhuda</td>
<td>Forest, dry forest Pyrularia glaucophyllis</td>
</tr>
<tr>
<td>Cryptocarya myrthifolia</td>
<td>Scarp Forest Phyllostachys paniculata</td>
</tr>
<tr>
<td>Cryptocarya wyley</td>
<td>Phyllostachys paraspinosa Scarp Forest</td>
</tr>
<tr>
<td>Cryptopogia elongophila</td>
<td>Polyalthia falkeform</td>
</tr>
<tr>
<td>Daphne dregel</td>
<td>Watercourses Polites wakefieldi Orasland (KZN-SS &amp; NV)</td>
</tr>
<tr>
<td>Dalbergia chrysophylla</td>
<td>Scarp Forest Raphanoperis hirsutu</td>
</tr>
<tr>
<td>Dikosmis hyacinth</td>
<td>Raphanoperis procumbens</td>
</tr>
<tr>
<td>Drimia fagleari</td>
<td>Cliffs Senecio erubescens</td>
</tr>
<tr>
<td>Eriophora catharinum</td>
<td>Senecio medley-wood Cliffs</td>
</tr>
<tr>
<td>Eugenia simi</td>
<td>Raphanoperis procumbens</td>
</tr>
<tr>
<td>Eugenia sp nov 2</td>
<td>Raphanoperis procrustes</td>
</tr>
<tr>
<td>Eugenia sp nov 10</td>
<td>Raphanoperis procrustes</td>
</tr>
<tr>
<td>Euphorbus karinii</td>
<td>Scarp Forest Dicranandra fruticosa</td>
</tr>
<tr>
<td>Geesnera crassifolia</td>
<td>Scarp Forest Dicranandra fruticosa</td>
</tr>
<tr>
<td>Gerbera viridifolia</td>
<td>Scarp Forest Dicranandra fruticosa</td>
</tr>
<tr>
<td>Gasteria croucheri pendulifolia</td>
<td>Scarp Forest Dicranandra fruticosa</td>
</tr>
<tr>
<td>Gerbera viridifolia</td>
<td>Scarp Forest Dicranandra fruticosa</td>
</tr>
<tr>
<td>Gophera crassifolia</td>
<td>Scarp Forest Dicranandra fruticosa</td>
</tr>
<tr>
<td>Gridia caffra</td>
<td>Scarp forest</td>
</tr>
</tbody>
</table>

The area’s richness in natural resources provides an environment that is attractive to a variety of bird species. The table below provides a list of bird species found in the Molweni area.

<table>
<thead>
<tr>
<th>TAXON</th>
<th>HABITAT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Columba palumbus</td>
<td>Scarp forest</td>
</tr>
<tr>
<td>Falco peregrinus</td>
<td>high cliffs, over forests, woodland</td>
</tr>
<tr>
<td>Geronticus calvus</td>
<td>grasslands, open woodland, cultivated fields, quarries</td>
</tr>
<tr>
<td>Gossachus leucotis</td>
<td>slow-flowing open water with suitable overhanging vegetation</td>
</tr>
<tr>
<td>Haliaeetus vocifer</td>
<td>large open water bodies, estuaries</td>
</tr>
<tr>
<td>Lophostethus capensis</td>
<td>forest, valley bushland</td>
</tr>
<tr>
<td>Metopidius alfredi</td>
<td>forest, meadows, near rocky areas, often forested</td>
</tr>
<tr>
<td>Pometarius albicollis</td>
<td>open expansive woodland</td>
</tr>
<tr>
<td>Smithsonia capensis</td>
<td>forest and closed woodlands</td>
</tr>
<tr>
<td>Stephanorhina macroura</td>
<td>forest, closed woodland</td>
</tr>
<tr>
<td>Stephanaeus caffra</td>
<td>forest</td>
</tr>
</tbody>
</table>

Molweni has spectacular birds, lush forests, marshes, freshwater lagoons, grasslands, tidal estuaries and acacia woodland support an excellent array of birds. Birds are able to rest upon the natural vegetation and ecosystem with the good and services the ecosystem provides. The area of Molweni has to be preserved and any development that takes place proper environmental measures have to be put in place to ensure that sustainable development is in the core of planners and developers plans.

4.4.10 Biophysical Analysis

The vast majority of Molweni is semi-rural with development occurring only in the residential areas where the natural resources are utilised for daily survival. In many areas rivers and streams are the only water source available to the communities which has resulted in pollution of rivers and streams. The terrain of Molweni is mountainous and dominated by the rural valley of a Thousand Hills, a vigorously undulating landscape with hills and valleys.

4.4.11 Vegetation Classifications & Agricultural Potential – Bio-resource Groups (BRG)

The Bio Resource Groups (BRGs) are identified through a number of characteristics such as climate and soil type which then have an effect on both the natural vegetation that is or would have been found on site. These are determined at a provincial scale therefore: they do not take landscape micro-climate into account. They do however; give a broad overview of the conditions, limits and opportunities in the study area.

4.4.12 Moist Coastal Forest (BRG 1)

Molweni is surrounded by coastal forest (figure 4) that occurs in a narrow band along the coast in areas that have not been disturbed by development. The trees are mainly short (up to 10m high), but are extremely dense and tangled, particularly nearer the coast. “A few forest grasses are present (e.g. Setaria megaphylla (the broadleafed setaria) and Oplismenus hirtellus), but generally the coastal forest provides very little grazing, and therefore does not contribute significantly to commercial animal production. Common forest trees include; Millettia grandis (mzimbeet), Protorhus longifolia (red beech), Ficus natalensis (common wild fig), Cells africana (white stinkwood), Trichilia emelica (Natal mahogany), Harpephyllum caffrum (wild plum), Erythrina calcaria (coast coral tree), Brachylycaena discolor (wild silver oak), Streblitzia Nicolai (Natal streblitzia), Croton sylvaticus (forest croton), Alizia adianthifolia (flatcrown), Mimusops caffra (coast red milkwood), and Sideroxylon inerme (white milkwood).”

Moist coastal forests (figure 4) help in controlling soil erosion, absorb carbon dioxide, provide oxygen and detoxify the air by removing pollutants that are very harmful to us humans, we have to preserve the forest in Molweni and ensure that any development is implemented in a sustainable manner. “There are a number of consequences to removal of forest such as flooding, which can cause major damage to houses and infrastructure such as roads and bridges, as well as soil erosion and the siltation of dams and estuaries, which will ultimately affect the water supply for human, industrial and agricultural use.”

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4 Bio Resource Group: A BRG is an area with a reasonably uniform pattern of vegetation type, climate and soil pattern within its boundary.
important to preserve our environment and ensure that development happens in a sustainable manner ensuring that we consider the environment and its surroundings.

Figure 15: Agricultural Potential

Figure 16: Bio-Resource Groups
4.4.13 Soil Type

The terrain of the area is dominated by deeply incised river valleys, ridges and steep lands. Molweni provides an aesthetic quality with its contrasting mountainous terrain and the grasslands. Overgrazing and incorrect cultivation methodologies have been a result of poor land management which has consequently resulted in the erosion and degradation of field quality across the area but quality of the environment is good. The type of soil found in Molweni is Natal Group Sandstone.

Picture 3: Natal Group Sandstone

(Source: www.geozone.co.za)

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These exposures consist of maroon-coloured arenaceous and argillaceous sediments attaining a maximum thickness of ~46 m, with a mean of 15 m, which are correlated with the Eshowe Member of the Natal Group.
4.4.14 Hydrology

Important river systems in Molweni include the Umgeni River, Msunduzi tributary that continues in an easterly direction towards Inanda dam, increasing air temperatures and more unpredictable rainfall results. These rivers are important features within Molweni as they contribute scenic beauty and provide a vital resource for survival. These rivers are utilised for a multitude of purposes (such as washing clothes, animal feed, human consumption) and as such water pollution has occurred and is a common problem.

The existing undeveloped area generally slopes towards the Inanda Rd and has water courses and dams which are of great significance to the ecosystem of the area. The catchment area appears to be relatively small and stream flow requirements are probably minimal. The catchment management area and its borders are environmentally sensitive and provide additional natural scenic beauty to the area. The terrain of Molweni is mountainous and dominated by the rural valley of a Thousand Hills, a vigorously undulating landscape with hills and valleys.

4.4.15 Threats to Biodiversity

Pollution - Pollutants interfere with the lives of living beings and destroy all kinds of habitats. There has been a rise in the number of endangered species due to pollution and defilement of rivers, streams and other water bodies. Biodiversity and ecosystems are tremendously affected by this.

Sand mining - Excessive instream sand-and-gravel mining causes the degradation of rivers. Instream mining lowers the stream bottom, which may lead to bank erosion. Depletion of sand in the streambed and along coastal areas causes the deepening of rivers and estuaries, and the enlargement of river mouths and coastal inlets. Sand mining activities will have an impact upon the river’s water quality. Impacts include increased short-term turbidity at the mining site due to resuspension of sediment, sedimentation due to stockpiling and dumping of excess mining materials and organic particulate matter, or leakage from excavation machinery and transportation vehicles.

Alien invasive plants - Invasive alien species are plants, animals, pathogens and other organisms that are not indigenous to an ecosystem that may cause economic or environmental harm to human health. In particular, they impact adversely upon biodiversity, including causing the decline or elimination of indigenous species through competition, predation, or transmission of pathogens, and the disruption of local ecosystems.

Soil erosion – Soil particles are loosened, washed down the slope of the land and either end up in the valley or washed away out to sea by streams and rivers.

Illegal hunting – A variety of mammals, birds, reptiles, marine species and plants are sold in traditional medicine markets and shops across the region. Many species sold at these markets only occur in protected areas but nevertheless are openly sold. The illegal use of marine life and include charges of fishing without permits, catching undersize fish or crayfish, exceeding permit quotas and fishing for specific species in the closed season.

Invasive Species - many of the lower reaches of rivers are congested with invasive aquatic weeds. Rivers choked this way have major impacts on natural biodiversity, local water quality and have a reduced amenity value. Chemical control can have negative side effects as rotting plant material lead to oxygen depletion and fish death. Terrestrial land species would include dogs, cats etc that make part of the terrestrial species that could bring harm to biodiversity.

4.5 Infrastructure and Services Overview

This section of the report is intended to provide an overview of the existing situation in terms of available infrastructure and services with the study area.

4.5.1 Road Network

The Inanda Road (M55) is the main road providing access to the study area and linking it to other neighboring settlements to the west, north and south of the area. The road is a surfaced all weather access road which is covered with tar for most sections and concrete for the very steep areas such as the stretch of road between “izigodi” of Ingqungqulu and Umgababa. Inanda Road is a high mobility route with limited access. As a Metropolitan Road, there are several concerns about Inanda Road as it traverses the area and these include:

- A significantly reduced road width at the end of the Waterfall suburb towards Molweni and throughout the area. The road width varies between 6.5m and 8m which is far below a road width for a Metropolitan Road;
- Several houses have direct access to the road which is a road safety hazard;
- The lack of appropriate traffic management measures;
- Poorly defined pedestrian walkways and crossways causing conflict between vehicles and pedestrians;
- Several livestock roaming the streets;
- Infringement on the road reserve by some households; and
- Poorly maintained road verges

The condition of internal access roads varies throughout the area. There are areas with black top surface, some well-maintained gravel roads and others are poorly maintained gravel roads. There are several households in rural “izigodi” of Umgababa and Umgeni that do not have direct road access. There are also internal access roads that are shown on the areas layout but were never developed and as a result there are houses built over the roadway or on the road reserve.

The picture below is evidence of poorly maintained pedestrian walkways and road verges.
4.5.2 Traffic and Transportation (KaMawewe Consulting Engineers)

Traffic analysis will be focused along the proposed developmental corridor which is Inanda Road. Attention is also paid to the Taxi ranks and in particular its location and all other aspects such as users of the taxi rank which includes motorized and non-motorized traffic, commuters, pedestrians, and road traffic operators.

The concept “road traffic quality” encompasses traffic safety, traffic discipline, the protection of the road infrastructure and the environment. Inanda Road which bisects the Molweni Area needs to be considered in the context of increased safety concerns at its current design speed of 80km/hr. At this speed the other concerns especially for non-motorized transport will require the implementation of an effective road traffic initiative that may eliminate the possible black spots that may be created, as a result of increased non-motorized traffic from the nearby schools and other residential area sitting on either side of Inanda Road. The other dimension is the animal traffic which may be more hazardous than the pedestrian which may be confined to the pedestrian crossings and the concreted sidewalks, while this type of traffic may most be controlled by the improved signage to the vehicle traffic and the effective speed reduction along the corridor, which talks to the improving road user skills and attitude as a traffic management function. Land availability is also critical in capacitating the proposed infrastructure. The other safety parameters concerning this node relates to the “stopping sight distances”, which at 80km/hr is 115m on either side along Inanda Road, and this may be achievable although it may increase at a worst case scenario, as entry point in the vicinity of the taxi rank is at a sag curve, with the entry grade along Inanda Road of about -5.56% and exit grade at +0.5%. Another challenge established was that the intersection was also at the horizontal curve which may with increased taxi traffic add to the vehicle traffic. This will require a longer stopping sight distance that may need day-lighting, and possible relocation of some obstructions like houses and trees, however this will be looked at in detail. The vehicle design speed along the Inanda road within the vicinity of the nodes will need to be reduced to achieve necessary minimum requirements and lighting at night to improve safety requirements, possibly to about 40km/hr.

The transport needs for the majority of the residents of Molweni depends greatly at the available form of transport as there is limitation in the available choice of transport in the area especially public transport. Upon realization of the choices available, commuters make choices between motorized or non-motorized modes of transport and the associated cost is also considered.

The provision of the pedestrian sidewalks only along the proposed bus/ taxi routes will provide the residents with the desirable choice that will ensure that there is no provision of excess capacity in any part of the network which would result in wasting limited resources, whilst ensuring that there is no undersupply of the capacity which would cause congestion especially between motorized and non-motorized modes of transport. Supply must meet the demand, and off course this will vary with time, so the network will have to be infinitely flexible.

The bus routes should be planned to follow the reasonably fast and direct route passing as possible to the centroid of the residential, business and shopping areas served by the route. The grades along the proposed bus routes ranged between 0.5% and 11.11%. The maximum tolerable gradient for bus route of 1 in 10 at the most should be achieved, and this has been achieved for the greater part of the existing bus route along within Molweni. It must however be noted that 10% grades are not the most desirable for the bus route, and 1 in 14 (7%) is however desirable for this purpose. The main goal however was to ensure that for the important developments i.e. housing residential, clinics, schools, shopping centres and other areas of intense pedestrian activity be located to ensure that the walking distance to the nearest bus stop is not more than 400m away.

There is a concern that there could be a challenge in ensuring a 7.4m road width at the majority of the proposed low cost housing development where the adjustments on the road reserve could be necessary to. It is however understood that this may lead to a reduction in a number of available sites to build the houses.

A number of direct access points into Inanda Road will have to be eliminated and the typical service roads can be constructed as one of the options to accommodate and reduce the number of illegal direct accesses to the Inanda Road, however an in-depth investigation will need to be conducted in this regard.

The picture below highlights some of the issues raised above, these are shown as follows:

- The transparent blue fill shows the varying road width, keeping in mind that the intersection where road width would be wider.
- The red triangles show houses with direct access to the road.
- The dotted orange line shows an access road that should have been built according to the layout, and as result the red oval shows houses built over that roadway.
4.5.3 Water

Potable water for domestic and other uses is available from Umgeni Water and is reticulated by eThekwini municipality. The entire Molweni area is provided with water on a semi-pressure individual connection system. Communal stand pipes are also provided.

The scarcity of water is a major concern for the Municipality and the region as a whole. The extension of housing projects will rely greatly on availability of water. This will also mean that the approval of any new developments will be assessed in the context of available water capacity.

4.5.4 Sanitation

The Molweni area is not serviced with a waterborne sewerage system. A number of households are serviced on site through septic tanks with soak aways where geotechnical conditions are suitable; otherwise the Urinary Diversion Latrines (UDL) system is used. The UDL system basically separates urine and faeces making the decomposition process possible. A number of households within the rural component still make use of pit latrines.

4.5.5 Storm water Management

The storm water management system does not appear to be the best available. However; storm water is piped at critical low points and it is appropriately attenuated. Existing drainage pipes are filled with litter and waste which causes blockages, as a result standing water prevails which is prone to waterborne diseases.

4.5.6 Electricity

Electricity is available throughout the study area, and households have individual prepaid meters. Electricity recharge vouchers are not always available within the area.

There is a concern regarding the reliability of the electricity provision, as well as concerns of illegal connections. Illegal connections also put strain on the electricity network thereby causing blackouts every now and again, as this is unbudgeted usage.

4.5.7 Waste Removal

The municipality provides a weekly waste removal service to households particularly those in the peri-urban area. Households in the rural component particularly those that are inaccessible, still make use of onsite disposal method. Even though there is weekly removal, there is still a concern of littering and illegal dumping of waste. This is also done at the lower lying areas in close proximity to Umgeni River, which compromises the water quality.

4.6 Social Facilities

The section of the report focuses on the availability of social facilities in Molweni. Available facilities are then compared to the Metro’s social facilities planning standards.

Even though there are facilities available within the area however; these are not sufficient considering their number against population size and their capacity considering the resources available. In general, there is a lack of social / community facilities within Molweni area.

4.6.1 Educational Facilities

The types of schools available within the area range from primary, secondary and combined schools. The increase in population has meant that more pressure has been exerted on available facilities.

4.6.2 Primary Schools

There are 4 primary schools within the study area, with conditions that could be described as poor to satisfactory.

The figure below shows the location of existing schools and provides a 1km buffer. This indicates that almost the entire Molweni is area is adequately provided with Primary Schools except for the area of Madimeni. There would also be a need in future to cater for the proposed housing extension south of Inanda Road.
4.6.3 Secondary Schools

There are two secondary schools in the area in the form of one pure secondary and the other is combined school. The figure below shows the location of existing schools and provides a 2km buffer. This indicates that the area is almost adequately provided with secondary schools except for the area of Madimeni. However, even if a secondary were to be planned for Madimeni, it is not certain that it would meet the required threshold.

4.6.4 Crèches

During the study area walk about, a total of six crèches were identified. According the facility provision standards, a population of approximately 20,635 requires at least nine crèches.
4.6.5 Health Facilities

The available health facilities are not adequate to support the entire population within the study area. There is one health post/service centre within the area. A health post is a facility below a clinic level but slightly higher than a mobile clinic, and is permanent facility. According to the figure below which shows the location of the health post and a 2km buffer, the area is almost adequately covered. However, in reality this is not the case because travelling distances are higher for communities further south within the study area. The size of the population and available resources is another consideration to be made.

Currently there are three mobile clinics which are not able to support the population of Molweni. Hence, the social facility standards show that mobile clinics for such a population are not adequate. These mobile clinics cater for a population of less than 5000 people.

Figure 20: 2km Clinic Buffer

4.6.6 Community Hall

The area has two community halls; one is in Upper Molweni and the other in Lower Molweni in the Umgababa area. According to the Metro’s standards, are adequately provided.

4.6.7 Sizakala Centre

The Metro’s Sizakala Centre is located in the Upper Molweni area. The centre provides essential municipal services and also accommodates the Ward Councillor’s offices.

4.6.8 Cemetery

There are two cemeteries in the Molweni area namely; Langerfontein cemetery and Molweni cemetery which sits just outside the study area boundary in the Lower Molweni area. The demand for burial sites suggests that in future, there will be a need to extend existing cemeteries.

4.6.9 Shops and Tuck shops

During the site walkabout, a total of 24 shops and tuck shops were identified. According to the figure below which shows location and 500m buffer, the number and spatial distribution of shops and tuck shops is adequate. The only concern is the availability of essentials.
Sportsfields are the main sport facilities available in the area. During the site walkabout, a total of six sportsfields were identified. According to the Metro’s standards, this is sufficient however; of concern is the quality of the facilities.

The area has only one park, which is poorly maintained. The area has potential for more parks to be provided along the Umgeni River, which could also be used as picnic spots.

The table below provides a summary of available facilities.

**Table 7: Summary of Available Facilities**

<table>
<thead>
<tr>
<th>Facility Type</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Educational Facilities</strong></td>
<td></td>
</tr>
<tr>
<td>1.1 Primary School</td>
<td>4</td>
</tr>
<tr>
<td>1.2 High School</td>
<td>1</td>
</tr>
<tr>
<td>1.3 Combined School</td>
<td>1</td>
</tr>
<tr>
<td>1.4 Creches</td>
<td>6</td>
</tr>
<tr>
<td><strong>Health Facilities</strong></td>
<td></td>
</tr>
<tr>
<td>2.1 Health Post</td>
<td>1</td>
</tr>
<tr>
<td>2.2 Mobile Clinic</td>
<td>3</td>
</tr>
<tr>
<td><strong>Community</strong></td>
<td></td>
</tr>
<tr>
<td>3.1 Community Hall</td>
<td>1</td>
</tr>
<tr>
<td>3.2 Churches</td>
<td>7</td>
</tr>
<tr>
<td>3.3 Sizakala Centre</td>
<td>1</td>
</tr>
<tr>
<td>3.4 Police Station</td>
<td>4</td>
</tr>
<tr>
<td>3.5 Cemetery</td>
<td>2</td>
</tr>
<tr>
<td><strong>Sports &amp; Recreation</strong></td>
<td></td>
</tr>
<tr>
<td>4.1 Sportsfield</td>
<td>6</td>
</tr>
<tr>
<td>4.2 Parks/ Playgrounds</td>
<td>1</td>
</tr>
<tr>
<td><strong>Other</strong></td>
<td></td>
</tr>
<tr>
<td>Taxi Rank</td>
<td>1</td>
</tr>
<tr>
<td>Tuck Shops/ Stores</td>
<td>24</td>
</tr>
</tbody>
</table>

**4.7 Human Settlement**

As indicated earlier, the development of Molweni emerged as a dormitory centre for people working in the nearby economic centres of Pinetown, Kloof, Hillcrest and Waterfall areas. The nature of the settlement was purely to provide housing but lacked the provision of necessary support services and
facilities. The nature of the settlement ranges from peri-urban setting to rural setting. The areas to the north are primarily peri-urban with a sparse rural settlement in the vicinity of Langerfontein/Madimeni and primarily rural east and south of the study area. Both peri-urban settlements and rural settlements to the east and south are densely populated. There is a lot informality observed within the peri-urban setting, such as the setting up of tuck/spaza shops within the road reserve, backyard shacks etc.

Picture 6: Spaza Shop on Road Reserve

Over the years, the area has received some attention with some upgrading being done to infrastructure and the provision of essential community facilities. The area has also seen some extensions to housing, with new housing projects being introduced and in-situ housing upgrading projects being initiated. The following is a list of medium-long term municipal housing projects. The list differentiates the type of planned housing projects according to Insitu-Upgrade and Greenfield development. As it can be seen the largest housing projects are forecasted to come from Crestholme and Langerfontein within the Greenfield medium term. In terms of the Insitu-Upgrade medium time frame, the largest developments are planned in Lower Molweni area, together with Upper Molweni and Crestholme. Long term Greenfields and Insitu-Upgrade housing plans are on a fairly small scale and amounts to no significant economic impact.

Table 8: Proposed Housing Projects

<table>
<thead>
<tr>
<th>Sub-Areas</th>
<th>Project Type: Greenfield</th>
<th>Project Type: Insitu Upgrade</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Medium Term (within the next 5yrs)</td>
<td>Long Term (within the next 10-20 yrs &amp; above)</td>
</tr>
<tr>
<td>Langerfontein</td>
<td>1 416</td>
<td>Nil</td>
</tr>
<tr>
<td>Crestholme</td>
<td>2 524</td>
<td>Nil</td>
</tr>
<tr>
<td>Upper Molweni</td>
<td>2</td>
<td>Nil</td>
</tr>
<tr>
<td>Lower Molweni</td>
<td>5</td>
<td>Nil</td>
</tr>
<tr>
<td>Tin Town</td>
<td>122</td>
<td>Nil</td>
</tr>
</tbody>
</table>

(Sources: ETA and Urban-Econ (2011))

Some of the proposed housing layouts are not in line with the existing road network, in the sense that they encroach on existing roads. It is recommended that affected housing units be accommodated in future phased housing projects.

The scarcity of water remains the major impediment to housing provision. The provision of shelter and adequate clean water are both basic human rights enshrined in the Constitution. This is probably one major challenge that is currently facing the municipality.

Figure 22: Molweni Housing Projects
4.8 Spatial Analysis

The spatial analysis will be undertaken through the Lynch Analysis, which devises a perceptual image of the area presented spatially on a mapping system. The mapping framework for this system identifies the following features:

(i) **Pathways**: These are movement routes within the community that accommodate pedestrians, bicycles and motor vehicles. These movement routes also function as linkages between destinations.

(ii) **Edges**: These are real or perceived boundaries within the community. These could be real objects such as walls, buildings, railway tracks and/or changes in topography. These could also be perceived boundaries such as commercial and institutional districts or neighbourhood borders. Edges may hinder movement in the community or separate areas.

(iii) **Landmarks**: These are highly identifiable and sometimes unique features in the community. These could include; monuments, historic buildings, structures, and community facilities. Landmarks are important features for orientation and navigation.

(iv) **Districts**: These are sub-areas of the community that have an inherent uniqueness or quality. These may be unique areas of architecture, environmental or contextual quality, or a concentration of uses.

(v) **Nodes**: These are major destinations or areas of activity or locations. These may be located at intersections of pathways or may be locations of special community activities or uses.

(vi) **Gateways**: These are the main arrival points to a particular destination. These points

4.8.1 Pathways

The main pathway to the study area is the Inanda Road (M55), which functions as a Metropolitan distributor and collector road. There are two major intersections along Inanda Road namely with Alfred Drowning Ter Road (taxi rank intersection) and Ikwezi Road (community hall intersection). It is imperative that important pathways are well maintained and where needs be these should be upgraded particularly gravel internal access roads.

4.8.2 Edges

Molweni has relatively steep slopes therefore; the mountains and valleys create natural edges and boundary lines for development. The clearly defined edges are also in line with the Urban Line identified in OWSDP.

4.8.3 Landmarks

There are a few landmarks identified in the area; this includes:

- the taxi rank;
- the lower Langefontien cemetery;
- the Sizakala centre;
- Zimele health centre;
- clinic;
- reservoir;
- schools.

4.8.4 Districts

An institutional district was identified; this includes:

- a school;
- community hall;
- sportsfield;
- Sizakala centre;

The institutional district needs to be upgraded into an institutional node with clearly defined boundaries.

4.8.5 Nodes

Along the Inanda Road there is a concentration of commercial activities such as taverns, shops, butchery, cosmetic store and public phones. This area has emerged as a potential Node and needs to be considered for upgrading. The availability of land in this vicinity also makes it possible to develop this area into a fully fledged commercial node and an area that could be marketed to potential investors.

4.8.6 Gateway

The main gateway to the area identified is along Inanda Road; northeast entrance at the taxi rank intersection. At this point there is a need to put up a unique feature that serves as a point of access to Molweni and could also become a useful landmark.
In addition to the Lynch Analysis, the spatial analysis will also consider the performance of the study area by considering the following natural and built environment elements:

(i) Accessiblity: This is the level of accessibility to social, economic, and institutional facilities and/or services that users of a specific area have. Accessibility also refers to levels of connectivity and linkages of an area. Walking, cycling, and use of motor vehicles are some of the forms of gaining access to an area.

(ii) Diversity and Choice: This refers to the range of services, facilities, and activities that communities have in an area, and includes; residential, employment, commercial, retail, education, health and recreation.

(iii) Safety and Security: This refers to the levels of safety and security that are prevalent in an area, as well as the need to reduce risks and dangers.

(iv) Imageability: This refers to an areas unique elements and how easily it is identifiable.

(v) Viability of Local Economy: This refers to locally available economic activities and employment opportunities.

(vi) Public Transport: This refers to the nature, accessibility, reliability, efficiency, safety, and affordability of public transport.

(vii) Services and facilities: This refers to the nature and level of available infrastructure and services, and the demand thereof.

(viii) Natural Environment: This refers to the state of the natural environment and how it is impacted upon by natural and human activities. This also refers to biodiversity levels of specific areas.

(ix) Settlement Form: This refers to the nature and form of the built environment and how an area has been settled.

4.8.7 Accessibility

Accessibility to the study area is gained via the Inanda Road (M55) which is identified as the main pathway. There are several other minor pathways within the study area itself that serve as internal access roads. The means of access are walking and the use of motor vehicles in this case public transport.

The present condition of the Inanda Road is a point of concern in the following ways:

- even though the road is tarred, its condition is unsatisfactory;
- the lack of proper road and traffic management mechanism such as traffic lights or traffic circle or different road texture at major intersections is a proving problematic;
- the lack of designated pedestrian crossing and walkways is a major cause of conflict between motor vehicles and pedestrian;
- exiting speed humps needs to be painted for visibility and there must be additional calming measures for vehicle, especially in school zone areas;
- there is a need for a guard rails along the road especially in the steep area and sharp bends along Inanda Road.

4.8.8 Diversity and Choice

The study area serves as a Neighborhood Node which is predominantly a residential area. The study area provides very few social and economic services facilities.

This perception of standard, quality and lack of choice of facilities and services still pushes many with access to the use of private vehicles and public to travel to Waterfall/ Hillcrest to access certain facilities.
and services. The proposed commercial plaza would be welcomed as an addition to the lacking commercial facilities.

Sportsfields are the only form of recreational facility available in the study area. There is a glaring lack of children play parks and parks in general.

4.8.9 Safety and Security

Within the Molweni Area several vacant structures and sites with overgrown grass making for perfect hideout spots for criminals, abandoned containers and lack of street lighting. These are all factors conducive for an environment of mugging and robberies.

4.8.10 Imageability

The physical condition and aesthetic nature of the study area creates a negative perception of the area. The levels of littering are also not helping to improve its image. It is therefore; accepted that the overall image is a negative one, that of decay, decline and unpleasantness. Having said this Molweni has a beautiful nature at the escarpments, valleys and the rock forms. There is a huge potential for eco-tourism in the area, which can bring about economic benefits for the people of Molweni.

The visual environment is as much an important part of the fabric of our communities as clean water and animal habitat’s. When we use the term visual pollution we are suggesting that the portion of the built and natural environment we are viewing has been downgraded and, it has been made less attractive to us. (Youngken).

A healthy visual environment promotes the values of those who live, work and play in that community; it promotes civic pride and economic health. Individuals and communities who care about their physical environment can make a difference in how growth impacts what we see. A community’s appearance should express uniqueness while reflecting its history, present vitality and future potential. (Youngken).

4.8.11 Viability of Local Economy

In general, there is a lack or very poor economic activity in the study area. In the area there are a few stores taverns and informal trading on the streets.

The lack of economic activity results in fewer employment opportunities which are further exacerbated by the high illiteracy levels which make people unable to compete in the formal job market and limits their entrepreneurial abilities. It is therefore prudent that efforts be focussed on skills development and enhancement of the informal sectors.

4.8.12 Public Transport

The only modes of transport available in the study area are minibus taxis. The affordability, reliability, efficiency of these minibus taxis is questionable. The taxi rank is located on the western periphery of the study area, approximately 2.5km from the central point of the study area. This has effectively resulted in the occurrence of informal taxi holding areas along Inanda Road.

4.8.13 Natural Environment

The study area is predominantly covered by grassland and forestry. There are environmentally sensitive areas, which are part D’MOSS areas.

The study area lacks good public open spaces and generally urban greening is inexistent. There are several vacant properties which would be suitable to accommodate urban greening including the streets and road verges.

Having said this Molweni is surrounded by beautiful nature, with the mountains, rock forms, valleys, river, and also the animal species such as birds, butterflies, etc. This area has great potential to be used for tourism and perhaps educational purposes about the nature and environment.

4.8.14 Settlement Form

The built form of the study area is a difficult one to define, in that it takes different forms throughout the area. The upper Molweni area, predominantly areas north of Inanda Road could be said to be the better developed with appropriate housing structures and supporting infrastructure whilst. There are pockets within the study area where government housing projects have been delivered, and in these areas the conditions are also slightly better. However; there are still areas that are largely under developed, even though some are adjacent to better developed areas, such development has simply not been extended. An example of this is in Tin Town where there is evidence of some housing having been delivered but the overall conditions in terms of services, infrastructure and the general aesthetic appearance is way below acceptable standards.

In general the areas to the north and nearest to the Inanda Road are better developed and peri-urban in nature whilst, the areas to the south are predominantly rural and less developed. Even though the areas of a rural nature are less developed, these are still formal whilst in the northern peri-urban area there are a number of informal structures.

In addition to the study area performance analysis a Network Analysis was undertaken.

4.8.15 Blue Networks

The blue networks that were identified within and around the study area, includes was the 100 year floodline, Inanda River, Inanda Dam and several streams. It's pivotal that these blue networks are taken into account because they are sensitive areas and needs to be conserved and protected. No development is to be permitted within the blue network areas.

4.8.16 Green Networks

The green networks identified Durban Metropolitan Open Space System (DMOSS) areas, grassland/ bushes, vacant land and sportsfields. Again there are green networks which need to be protected because of their sensitivity. The Molweni area lacks recreational green networks such us parks, playgrounds, gardens and the existing sportsfields needs to be upgraded.

4.8.17 Infrastructure Networks

There are some infrastructural services that are available within the study area, but there is an urgent need to upgrade and improve the existing infrastructure. It was observed that there is electricity and
water, but the water is obtained from a tap on the yard and others obtain water on the road side where there are public taps. The pit latrines toilet needs to be upgraded and also the drainage systems on the roads, especially access roads.

4.8.18 Built Network

Molweni has densely populated built network because of the unfavourable conditions of the gradient. There are predominantly residential buildings, with a few schools, health centre, places of worship and a community hall. There are several areas that still require a lot of upgrading especially the densely populated rural areas.

Figure 24: Spatial Representation of the Network Analysis

Figure 25: Land Use Map
4.9 Land Ownership

The land making up the study boundary is comprised of 6 types of land ownership, namely
(iv) Privately Owned Land
(v) State Owned Land
(vi) Tribal Authority land
(vii) Conservation Land
(viii) Community Land/Church Land
(ix) Unknown Land

4.9.1 Privately Owned Land

There are portions of within the study area which are privately owned land especially in the Upper Molweni area. These are predominantly freestands. Private ownership of land provides for a stable local government, as it puts the onus on the owner to maintain and upgrade his/her property, as well as to ensure that his/her obligations to the city are honoured. Private ownership also provides a basis upon which loan finance can be mobilized to support local economic development. Privately owned land will be relatively easier to transfer from one owner to the next particularly for those sites that are identified as having potential for development through private investment.

4.9.2 State Owned Land

Predominantly the state owned land is in the Upper Molweni area. These sites are occupied and some are unoccupied and vacant. The state owned land should also be looked at in the light of community needs (i.e. social infrastructure and housing). State owned land will make it possible to provide communities with essential services.

4.9.3 Tribal Authority Land

Vast majority of the land in the study area belongs to the tribal authority, which is predominantly rural. In regard to traditional affairs, the Department of Cooperative Governance and Traditional Affairs (COGTA) provides support to Ingonyama Trust which is the custodian and regulates the tenure of tribal land in KwaZulu-Natal. Any land that is identified as having potential for development through private investment will require the specific investor to engage Ingonyama Trust to secure land lease rights.

4.9.4 Conservation Land

A small portion of land is conserved within the study area it's situated on the western side of the boundary. This land will not be made available for development because of its conservation status.

4.9.5 Community Land/Church Land

Within the study area there is a site which is legally owned by a church. In most cases church owned properties are reserved for religious purposes. There are also instances where church land is donated to the community for its social benefit.

4.9.6 Unknown Land

There are a few portions of land which their ownership is unknown perhaps this be due to the process of sorting legal documents of the rightful owners of the land. Certainty of land ownership will be required before any land can be marketed to investors for development.

Figure 26: Land Ownership
4.10 SWOT Analysis

Reference must be made to the SWOT Analysis conducted during the participation process. A SWOT (Strengths, Weaknesses, Opportunities and Threats) analysis was undertaken for the Molweni Town. This analysis is based on key observations from site inspections and on consideration of the key issues identified by the eThekwini Municipality IDP (2009/10/11).

- Electricity reliability
- Crime & Drug Abuse
- Employment Opportunities
- Upgrading of Roads (Pedestrians)
- Lack of skills – Skills Training Centre
- Youth Centre
- Swimming Pool
- Playgrounds, Parks & Sportsfields (additional)
- Resource centre (noise level)
- No library in the area
- Shopping Centre
- Multipurpose Centre
- Police Station (compound)
- Shebeens/ taverns near schools
- Orphanage and old age homes
- Religious Facilities
- Clinic (under resourced)
- Community Radio
- Gymnasium
- Road Safety
- Community Garden
- Bridge Across Valley
- Municipal meters and houses on the road reserve
- Encroachment
- Cemetery
- Streetlights on roads
- High crime levels
- Lack of employment opportunities
- Public transport issues – need for buses
- No flushing toilets and no toilets at all for others
- Lack of farming (farming according to sub-areas)
- Poor conditions of access roads

4.10.1 Strengths

The strengths identified included:
- Availability of potential land for development
- Stable climate
- Political stability
- Great nature surroundings

4.10.2 Weaknesses

The weaknesses identified included:
- High illiteracy levels and skills shortage
- High unemployment
- Lack of appropriate planning mechanisms
- Lack of planning for informal trading
- Littering and pollution
- Poor traffic management
- Poor and inadequate infrastructure
- Steep slopes prohibiting development
- Lack of recreational facilities
- Land encroachment
- Lack of incentives to attract investment
- Absence of industries
- Limited natural resources for production

410.3 Opportunities

The opportunities identified included:
- Tourism and tourist attractions - rich cultural diversity
- Job creation through increased tourism
- Upgrading of informal trading
- Recreational facilities
- New road infrastructure development
- Availability of potential developable land
- Development of commercial centre

4.10.4 Threats

The threats identified included:
- Littering and pollution
- Criminal activity
- Scarcity of water
4.11 Community Based Planning Survey

4.11.1 Sampling

A structured household interview survey was undertaken amongst a geographically stratified sample. A Random Sampling was undertaken. 50 households were surveyed according their settlement areas. The sample frame used a ward 9 base map. The findings of this survey were statically representative results indicative of the issues under consideration.

4.11.2 Methods

The primary research in this study was undertaken using both qualitative and quantitative methods. Initial exploratory research was conducted through interviews with key informants in order to get an idea of stakeholder interest and to obtain technical information concerning the ward 4 development.

Quantitative methods were used to capture social and economic data on 50 households, using open- and closed-end questions. The interviewers conducted were face-face interviews with the targeted households.

4.11.3 Overview of Molweni Ward 9 (Research Findings)

4.11.3.1 Housing and Land Module

Predominantly the settlement type within our study area is Urban (formal) and Rural (sparse). The Langefontein, Madimeni, Upper Molweni and the settlement areas such as Dark City, Roman 1, Congo, Ematendeni, Kwamega are mostly urban formal areas. The Lower Molweni, with settlement areas such as Mgababa, Mgeni are mostly rural areas.

During the survey it was observed that the main buildings walls of household were concrete blocks and cement. Other households use mud/cement mixture and bricks and cement. Predominantly the households that were surveyed their main houses were standard township houses and suburban houses both with a percentage of 26%. This shows that some houses structures in the study area are not of bad condition. Molweni is mostly tribally owned therefore people have Permission to Occupy (PTO) land in within the study area. 52% of the household surveyed had PTOS and 30% had formal freehold title deed. Informal ownership and formal deed of grant were 12% and 6% respectively.

4.11.3.2 Demographic Module

In terms of the respondents their highest level of education was primary level that is 30%. Other respondents highest level of education is were in high school (i.e. grade 10, 11 and 12). None of the respondent has been to tertiary.

Figure 28: Material on Main Building Walls

Figure 29: Highest Educational Level of Respondent
4.11.3.3 Employment Modules

In terms of employment status most respondents are economically inactive – not seeking work. 16 of the respondents are economically inactive. However there are about 10 of the respondents whom are employed formally. There are 6 people which do casual labour. Predominantly people are employed in construction and domestic labour.

The number of respondents is mostly employed in Molweni (i.e. 13 of the respondents). Five (5) of the respondents are employed at Westmead. Others are employed within the surrounding areas such as Hillcrest and Pinetown. There are those who are employed in Durban, Pietermaritzburg and other areas within eThekwini Metro.

Predominantly the respondents are employed in the domestic and construction sector. There are also others in manufacturing, agriculture, water, entertainment, transport, medical services and sales persons. These ‘other services’ are those who are unemployed, retired, students/pupils and housewives. They are not in any particular service, but others do help in terms of community projects.

The majority of respondents receive income through wages and salaries from them or family members. Others receive income through pensions from the elders, which they look after their families and they are bread winners. Welfare and compensation payment is another source of income which people receive within the Molweni area.
4.11.3.4 Services and Utilities Module

Within the Molweni area predominantly households that were surveyed receive water from the yard. However there are a few those have to go to the streets to get water from the public taps which are for free. This is very inconvenient for the people that have to fetch water from the streets.

Within the study area electricity – grid is used mostly in all areas within the study area, it used for cooking, lighting, heating the home and water. However there a few households which don’t have electricity and uses candles, gas, wood and paraffin for cooking, lighting and heating.

![Figure 34: Source of Water](image)

It was observed and the survey shows that Vent Improved Pit Latrines (VIP) primarily is used in the study area, i.e. 32%, 22% still use the bucket toilet system which there is a huge question on hygiene. However, 20% of the people use flushing toilets which are located outside not inside the house. Most households (i.e. 94%) use their cellphones as a way of communicating with other people. This poses a challenge to Telkom to re-invest in re-installing landline phones. In terms of disposal of waste 74% of the people’s waste is collected by the municipality and 26% is disposed in a hole at the yard. Hence, this might pose a threat because waste is hazardous. 54% of the households receive their post or mail from the post office. Others receive their mail or post from the shops, of which 20% mentioned that. Other households don’t receive any mail or post and others either use Molweni address box unit or someone else’s address.

![Figure 35: Type of Toilet in Households](image)

![Figure 36: Main Energy Source for Cooking in Household](image)
Towards and within the study area the Main Road (M55) is too narrow which does cause congestion with the vehicles and pedestrians. 46% of the people feel the main road is in good condition and 24% feel the main road is poor. In terms of the access roads 40% of the respondents feel their condition is poor. Which is true, most access roads are gravel, the tarred ones are too small with no speed humps and they are not safe.

### Figure 37: Main Energy Source for Lighting Households

- **Good:** 46%
- **Fair:** 30%
- **Poor:** 24%

### Figure 38: Condition of Main Road & Access Roads

- **Main Road**
  - **Poor:** 24%
  - **Fair:** 30%
  - **Good:** 46%

- **Access Roads**
  - **Poor:** 40%
  - **Fair:** 24%
  - **Good:** 28%

### 4.11.3.5 Household Attitudes Module

38% of the Molweni respondents feel the crime level is petty crime i.e. not bad. Hence, 22% of the people feel safe in the community of Molweni. However, another 22% felt there are all types of crime which happens weekly, which is bad. Another 18% feels that the crime in Molweni is bad. Having said this it also seems that the police services is poor in the area as 46% of the respondents in the area feel that way. Only 20% of the respondents feel the police service in the area is good.

### Figure 39: Policing

- **Excellent:** 4%
- **Good:** 25%
- **Fair:** 26%
- **Poor:** 46%
- **Very Poor:** 0%

### Figure 40: Safety & Security

- **Relatively Crime Free (Good):** 22%
- **Petty Crime (Not Bad):** 22%
- **Petty Crime mainly but serious crime sometimes occur (Bad):** 38%
- **All types of crime happen weekly (Very Bad):** 18%

In terms of HIV/AIDS impact in the area 62% of the respondents believe that the impact is high. Hence, 74% of the respondents know someone who has died of AIDS. Only 52% of the people have received pamphlet teaching about HIV/AIDS.
38% of the respondents feel that the quality of education in Molweni is good and 30% feel that it is fair. However, 22% feel the education quality is poor and very few feel the education in Molweni is excellent. In terms of public transport (which taxis are only available) 40% see the public transport to be good and 24% and 12% see public transport poor and very poor respectively.

The quality of health facilities in Molweni is of poor quality and service. 40% of the respondents support this statement. 28% of the people feel the services and quality of the health facilities in area is fair and 16% feel it’s good and very poor respectively.

Forty percent of the respondent feels that the public transport within the Molweni area is good. However, 24% and 20% feels that the quality of transport is poor and fair, respectively; and 12% had said it is very poor.

The clinic clearly is fairly accessible to the community of Molweni; however whether it's sufficient and efficient to the community is questionable. 60% of the respondent walk 0-2 km to the clinic and 20% walk 2 – 5 km to the clinic. Another 20% walks 5 – 10km or more to the clinic. These statistics are similar to the primary schools in Molweni.
50% of pupils walk 0–2km to the high school and 24% walk more than 10km to school, which shouldn’t be the case. 8% of the pupils walk 2–5km to their high school and others walk 5–10km to school.

In terms of IDP awareness 54% of the respondents are aware and 46% are not aware. This poses a challenge to the municipality in making people more informed of such meetings/discussions. People where then questioned if they were aware of any development projects taking place within the area which benefit the community in terms of service delivery. Only 52% were aware of such projects and 48% were not aware of such projects.
4.12 Conclusion

The foregoing sections have provided an overview of those issue and elements that are responsible for the current state of affairs of the Molweni Area.

It is clear from the Situational Analysis that Molweni Area is in need of an appropriate level of planning and upgrading. Unless this is done it will be impossible to attract investment into the area which would bode well for economic growth and creation of job opportunities. Such planning should look at how the area would be made attractive, more infrastructure upgrade and how the creation of sustainable human settlements would be achieved. These are places where areas of work, live and play are created. These are places that provide adequate services and facilities to residents, and where these are easily accessible, reliable and affordable. Economic growth also refers to the need to look at the enhancement of the informal sector and appropriate formalisation where an opportunity presents itself. This means that skills development need to happen in order to also increase levels of entrepreneurship.

The following phase will take into consideration the findings that are made in the Situational Analysis in order to formulate Development Concepts for appropriate Nodal Functional Area Plan of the area. However; before this can happen engagement of relevant stakeholders needs to happen to ensure that those critical issues that need to be considered in the formulation of designs are in fact responding to the real needs of those who make use of the central area for a variety of reasons such live, access economic opportunities or access social services and facilities.
PART 2: CONCEPTUAL FRAMEWORK & DEVELOPMENT SCENARIOS

1.0 VISION FORMULATION

1.1 Introduction

The preparation and conclusion of the Situation Analysis provides a basis or foundation upon which a Conceptual Framework for the Molweni Node will be developed. During the Situation Analysis phase, key stakeholders were engaged, these included; civic organizations, community based organizations, religious leaders and business representatives. During the engagement process, stakeholders identified key issues and priority areas of intervention. The Situation Analysis concludes by giving a synopsis of key development informants in the form of an overview of Strengths, Weaknesses, Opportunities, and Threats (SWOT).

The formulation of the Conceptual Framework is intended to provide Nodal Development Options. The objective of these options will be to address key issues through strategic interventions in priority areas or sectors. A sound Conceptual Framework requires a sound Vision for the development area, but such Vision needs to be in keeping with Council’s Vision as prepared during the Integrated Development Plan (IDP) process.

1.2 Vision

1.2.1 EThekwini 2020 Vision

During the preparation of the IDP process, Council adopted the following Vision for eThekwini Municipality:

“By 2020 eThekwini Municipality will be Africa’s most caring and liveable City”

It is clear from this Vision that eThekwini Council intends to address four critical areas of “well-being” that of; political, physical, social and economic well-being. Therefore; the vision for Molweni needs to have these elements.

1.2.2 Molweni 2021 Vision

During the stakeholder meeting of 10 July 2011, members were requested to share their ideas of a desired development vision for Molweni; and the following ideas were expressed:

- Molweni that is attractive and appealing to tourists because of its natural attractions and/or a well-developed tourism infrastructure such as the development of a cable car across the valleys.
- Molweni that is agriculturally productive.
- A caring and loving area with well-developed economic activities, good infrastructure development, efficient transport system and basic social services.
- A well linked Molweni through the extension of Inanda Road to Clermont/KwaDabeka, Newlands and KwaMashu.

Having given consideration to the ideas expressed above, the following 10 year Vision is suggested for Molweni:

“By 2021, Molweni will be an area that is well serviced with adequate and reliable social infrastructure and services, and there will be economic vibrancy achieved through sustainable use of available resources to ensure a better tomorrow”
2.0 KEY DEVELOPMENT PRINCIPLES

2.1 Urban Design Guidelines

Urban design guidelines are an essential element of informing how the growth of an area should take place and how it should be shaped. The guidelines seek to discourage non-preferred and promote preferred patterns of development, they enhance the area’s policies for development, and encourage the conservation of natural resources and man-made features.

The guidelines are not exhaustive, and are developed with the idea that they may have to be revised in future to deal with changing circumstances, to incorporate new ideas and experiences.

The following spatial and non-spatial development principles will be useful for the Molweni Nodal Functional Area Plan:

<table>
<thead>
<tr>
<th>PRINCIPLES</th>
<th>CHARACTERISTICS</th>
</tr>
</thead>
</table>
| Urban densification   | - Urban Densification refers to a process of carefully and meaningfully increasing densities in developed areas to ensure the most effective and efficient use of scarce resources.  
                        | - The process of densification needs to be carefully managed and applied in appropriate areas, as it cannot simply be applied across the area.  
                        | - Urban densification can be regarded as a broader strategy of improving the urban environment whereby an area of work, live, and play is created. |
| Compaction            | - Compaction refers to the process of managing urban sprawl by limiting expansion of urban developments.  
                        | - The objectives of managing sprawl include: the need to protect agricultural, natural, and recreational areas from destructive urban developments.  
                        | - Compaction promotes Urban Densification, and seeks to efficiently use resources whilst reducing the costs of providing services. |
| Sustainability        | - Sustainability refers to the fair and efficient use of resources to meet basic human needs whilst ensuring long term continuity, diversity, and adaptability.  
                        | - Sustainability promotes Compaction in order to protect natural resources. |
| Urban Integration     | - The ideas of Urban Integration are similar to Urban Densification in that they promote the creation of an urban environment that integrates areas of work, live, and play.  
                        | - Urban Integration also refers to the linking of poorly connected areas by improving the existing road network and public transport system.  
                        | - The objectives of Urban Integration include; ensuring that social and economic opportunities are equally accessible to all people of the city, and ensuring that there is a mixture of compatible land uses. |
| Redressing Imbalance  | - Redressing Imbalances refers to the process of “leveling the playing fields”, with particular focus on previously disadvantaged areas. This means that future planning should seek to direct a large portion of public sector investments into areas that were previously marginalized. |
| Quality Urban Environment | Planning and development work should seek to create quality urban environments which provide opportunities and pre-conditions for positive personal, social, and economic development. |

2.2 Urban Design Goals

Sustainable development of Molweni Nodal Functional Area needs to be guided by clear urban design goals, thus ensuring certainty of what needs to be achieved. Urban design goals need to be monitored and the performance of the urban space needs to be measured. Therefore; urban design goals need to be presented in a matrix of goals, objectives and performance criteria as presented below.

The Illovo Local Area Plan (LAP of 2009) made use of a similar presentation of urban design goals, and these have been borrowed for use in the Molweni Nodal Functional Area Plan as they are in line with the Vision developed. The urban design goals include:

(i) Goal 1: Promote and enhance accessibility
(ii) Goal 2: Promote Diversity and Choice
(iii) Goal 3: Safe and Secure Environment
(iv) Goal 4: Imageability
(v) Goal 5: Building a viable local economy
(vi) Goal 6: Promote and improve public transport
(vii) Goal 7: Sustainable services and facilities
(viii) Goal 8: Access to local services facilities
(ix) Goal 9: Access and protection of natural environment

The full matrix of goals, objectives and performance criteria is presented below:

<table>
<thead>
<tr>
<th>GOALS</th>
<th>OBJECTIVE</th>
<th>PERFORMANCE CRITERIA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Goal 1: Promote and enhance accessibility.</td>
<td>KW: Access to Local Opportunities; Residents should have access to urban social facilities.</td>
<td>Adequate provision of services and facilities within the study area.</td>
</tr>
</tbody>
</table>
Goal 2: Promote Diversity and Choice.
- Residents should have access to a range of services, facilities, and activities such as residential, employment, commercial, retail, education, health and recreation.
- Creation of multi-use nodes to allow for diversity of activities to allow for a variety of choices and opportunities.

Goal 3: Safe and Secure Environment.
- Reduce levels of risks due to natural disasters.
- Provision of visible policing services.
- Provision of security measures at public places.
- Provision of safe pedestrian walkways and crossings.

Goal 4: Imageability
- **KW: Sense of identity:** Creation of unique elements or spaces.
- **KW: Heritage:** Protection of heritage elements.

Goal 5: Building a viable local economy.
- Resident need to have access to a wide range of economic activities.
- Establishment of local markets and the promotion of locally produced goods.
- Availing employment opportunities locally.

Goal 6: Promote and improve public transport
- **KW: Accessibility:** Residents should have access to public transport within 10 minutes walking distance.
- **KW: Safe:** Residents should have access to safe public transport and transport nodes must be equally safe.
- **KW: Reliable:** Residents should have access to reliable public transport.

Goal 7: Sustainable services and facilities.
- Promotion of high densities to ensure maximum of available resources and infrastructure.
- High densities will also ensure adequate use of available space thus limiting encroachment of environmentally sensitive spaces.
- Upgrading of infrastructure to meet current and future demand.

Goal 8: Access and protection of natural environment.

Goal 9: Appropriate settlement form.
- **KW: Structural Logic:** Establish an appropriate system of corridors and nodes, in order to guide location of high order services and facilities.

(Source: Illovo LAP, 2009)

**NOTE:** **KW** – Key Word
3.0 SPATIAL RESPONSES

The following spatial and non-spatial responses are intended to address the key issues identified, as well as to ensure alignment with Urban Design Guidelines and Urban Design Goals.

3.1 Spatial Distribution and Densities

The spatial distribution of land uses is important in making sure that existing or proposed uses complement each other and do not cause any conflict. The notion of density or compaction is sustainable and it's cost effective and assists in the delivery of services. Such notion needs to be practiced to ensure that integration is achieved. The best option for achieving increased densities is going up as opposed to going wide. Density can be described as the compactness of the built form.

Density is characterised by compaction and integration; which by emphasising on densities and different typologies opens up new opportunities for creating new urban spaces. Hence, the concentration of social facilities and other services is imperative to ensure that they are accessible to the Molweni community. Accessibility is important therefore; services should be within the threshold of the community.

Appropriate level of spatial distribution and densities addresses three Urban Design Goals namely:

(i) Goal 1: Promote and enhance accessibility
(ii) Goal 7: Sustainable services and facilities
(iii) Goal 9: Appropriate settlement form

There are proposed housing projects for Molweni that have been approved. The current approvals are on a one lot-one house basis which is not in line with the advancement of the “Breaking New Ground” (BNG) Strategy for housing delivery. The BNG Strategy identifies the following strategies that will contribute to spatial restructuring:

- Progressively eradicating informal settlements;
- Promoting densification and integration;
- Enhancing spatial planning and the location of new projects;
- Supporting urban renewal and inner city regeneration; and
- Developing social and economic infrastructure.

All approved and future housing projects should be proceeded with on the basis of the BNG Strategy.

3.2 Built Form and Urban Design Responses

Typology and the built form can be utilised to a maximum through increasing storeys of buildings. Perhaps there should be more emphasis on mixed use buildings (i.e. horizontal and vertical mixed used buildings), for example having stores on the ground floor and residential on the first floor. Proposed built form can be integrated with existing development to obtain agglomeration of economies.

There are different types of typology that can be introduced such as single detached, semi-detached, row housing, duplex and simplex and flats. An example of a high density housing development is provided in figure 1.

Appropriate built form addresses two critical Urban Design Goals namely;

(i) Goal 1: Promote and enhance accessibility
(ii) Goal 9: Appropriate settlement form

Figure 46: Hlanganani Social Housing

3.3 Movement Network

Movement networks are an essential component of a settlement system. Functional movement networks provide convenient, efficient, affordable and safe movement of people, goods and services. (CSIR, 2000). Performing movement networks have the following characteristics:

- Give priority to non-motorised modes of transport and the needs of public transport;
- Maintains convenience, safety and multiple use patterns; and
- Accommodates a range of movement demands and socio-economic functions.

The area's movement network is characterised by conflict between motor vehicles and pedestrians, conflict between different modes of transport (i.e. motor vehicles, bicycles and animal drawn carts), encroachment on the road reserve and pedestrian walkways, inconsistent road width, inconsistent level of development (i.e. black top and gravel), lack of safety measures and lack of clearly defined walkways.

Movement within the area is important to ensure there is a safe flow of movement that is free of congestion. Improvement of the movement network should be undertaken to also accommodate...
different modes of transport. The improvement of the movement network enables certain activity spines and points to be strongly reinforced, which is positive for attracting and creating opportunities for the clustering of activities.

The improvement of the movement network entails amongst other:
- the upgrading of the Inanda Road to a proper high mobility route with a 30m width;
- the limitation of direct access points on Inanda Road to reduce potential hazards caused by black spots;
- the relocation of developments encroaching on the road reserve;
- introduction of road safety measures where needed to include clearly marking pedestrian crossings;
- extension of pedestrian walkways;
- extension of black top roads, in particular to cover areas in the rural setting that are relatively difficult to access;
- provision of street lighting and well maintained street vegetation which includes clearing up of road verges.

An effective movement network addresses three critical Urban Design Goals, namely;
(i) Goal 1: Promote and enhance accessibility
(ii) Goal 3: Safe and Secure Environment
(iii) Goal 6: Promote and improve public transport

The figure below depicts an improved movement network where the needs of pedestrians are prioritised (walkways and pedestrian crossing), with street vegetation, street lighting and street furniture.

Figure 47: Improved Movement Network

3.4 Hard Open Spaces

Hard Open Spaces refers to built-up urban spaces, it is about place making. There is a strong relationship between movement networks and hard open spaces because movement networks exist within hard open spaces and are central to their functionality.

There are two levels of hard open spaces, which includes; passive and active open spaces. Both levels have social functions, economic functions, political and symbolic functions. There are several generic forms of hard open spaces, these include:
- mixed mode streets;
- pedestrian-oriented streets;
- squares;
- markets;
- parking areas; and
- public transport stops and stations.

The development of functional hard open spaces will address the two critical Urban Design Goals namely;
(i) Goal 4: Imageability
(ii) Goal 5: Building a viable local economy

Even though Molweni has land available for development, it still lacks an appropriate level of hard open spaces. The most prominent open spaces are the community hall and the area’s taxi rank however; its location in relation to where the majority of people it serves are settled, is a point of concern.

Once the node boundaries have been clearly delineated, complementary hard open spaces must be proposed in particular around the social and economic facilities which are most essential for Molweni.
Molweni has an abundance of high biodiversity areas particularly along the Umgeni River. These are pristine areas that need to be preserved however; in so doing, the community should still have access to these areas. There are several generic forms of soft open spaces suitable for Molweni, these include:
- Parkways,
- Parks,
- Sportsfields,
- Play Parks, and
- Urban agriculture.

Molweni generally lacks soft open spaces; those which exist in their natural form are not clearly demarcated or protected nor maintained. There are patches of vacant areas available in close proximity to social facilities that have the potential to be used for soft open spaces. These will require an appropriate level of landscape designing that ensures that soft open spaces are aesthetically pleasant.

“Landscape in the environmental context refers to the laying out and planting of trees, shrubs, grass etc., together with the provision of related features in open spaces from the smallest courtyard to large parks and even extensive tracks of countryside.” (Reekie, 1972).

The creation of soft open spaces will address Urban Design Goal 8: Access and protection of natural environment.

The Small Towns Regeneration Initiative of Ladysmith Municipality produced a useful example of a well-designed park and play park. This example is shown on figure 3 below.

**Figure 48: Ladysmith Park**

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### 3.6 Public Facilities

Public facilities in their very nature and given their term are intended for the use by the general public to satisfy specific individual needs for safety and security, communication, sport and recreation, education, health, public administration, religious, cultural and social needs. (CSIR, 2000).

There is a hierarchy of four different types of public facilities ranging from:
- **High-order public facilities**: intended for public use at a regional or metropolitan level and not provided for in the layout process for single residential settlements;
- **Middle-order public facilities**: these serve a number of diverse and different communities and are essential to individual residential settlements;
- **Lower-order public facilities**: these are facilities utilised by a limited number of residential communities and generally provided for in the design and layout; and
- **Mobile public facilities**: these are facilities which move from one location to another and are intended to serve a large number of communities.

In general, Molweni is provided with public facilities even though the quality and quantity is still an area of concern. Poor maintenance and the lack of resources at public facilities is another primary area of concern.

Molweni needs to have a well-defined public facility node or what is popularly known as clustering of functional facilities, which has the following advantages:
- convenience, as all services are located in one centre;
- cost reduction through sharing of high cost elements;
- exposure and accessibility to public facilities encourages use;
- integration of different communities;
- reduction in inequalities in the provision of facilities;
- the offsetting of transport costs;
- reduction of space requirements;
- promotion of full use of buildings;
- relatively lower building costs;
- relatively lower running costs;
- relatively maintenance costs; and
- relatively larger community threshold.

Appropriate clustering of functional facilities will address four critical Urban Design Goals, namely:

(i) Goal 1: Promote and enhance accessibility
(ii) Goal 2: Promote Diversity and Choice
(iii) Goal 7: Sustainable services and facilities

### 3.7 Economic Opportunities

Economic Opportunities refers to the ability of community members to economically interact with other members within their community or members of external communities through trade, industry and
An economic opportunity area within a settlement area enhances the concept of creating areas of work, live and play. This suggests that people should have access to employment opportunities closer to their places of residence and recreation, which is one of the elements of sustainable human settlement. Currently the Molweni’s working population is employed in neighbouring economic centres resulting in high commuting costs and economic leakages.

The existence of several economic opportunity points suggests that there is wider and diverse choice of economic offerings. A strong movement network also ensures greater accessibility and exposure to economic opportunities.

Except for some form of informal trading and small convenience shops, Molweni does not have any significant economic opportunities. There are no areas within Molweni that are clearly demarcated and set aside for economic activities despite the availability of land and nature based opportunities. The creation of economic opportunities will boost employment and essentially the standard of living therefore; areas for commercial and light industrial opportunities must be identified within Molweni.

The creation of economic opportunity areas will address two critical Urban Design Goals namely;

(i) Goal 2: Promote Diversity and Choice
(ii) Goal 5: Building a viable local economy

4. NODAL FUNCTIONAL AREA PLAN PROPOSED CONCEPT

4.1 Nodal Functional Area Plan Concept

4.1.1 Spatial Distribution and Densities

The proposed Concept recognises the existence of an ununiformed pattern of settlement development throughout the area. A large portion of the formally settled area has been identified for in-situ upgrade; this is to ensure that an appropriate level of servicing is achieved, as well as ensuring that these can be used optimally through densification where appropriate. Rural settlements are sparsely settled and are in need of an appropriate level of services upgrading.

Portions of the proposed future housing project areas have been identified for social housing development to ensure that higher densities are achieved in order to progressively eradicate informal settlements and achieve integration. Social housing is also a useful tool to addressing the housing GAP needs.

It is recommended that Municipal authorities consider revisiting approved housing projects which have already been laid out but not yet built, to look at the practicality of moving away from the unsustainable one-lot one-unit system. These projects are in Madimeni, Lower Langelonkele and Lower Molweni.

It is generally understood and accepted that all future developments within the Metro will be subject to the availability of water.

4.1.2 Built Form and Urban Design Responses

As indicated above the most recommended built form for developments in Molweni, is that of high density and vertical mixed uses. This will contain urban sprawl, protect sensitive environmental areas, and reduce cost for the provision of services.

Settlement design must prioritise pedestrians as the main users of urban spaces.

4.1.3 Movement Network

Molweni has a hierarchy of three road types namely;
- High Mobility metropolitan road (Inanda Road),
- Collector Roads (secondary order); and
- Access roads (tertiary order).

The proposed Concepts recommend the appropriate upgrading of these roads to ensure improved flow of movement, efficiency and safety. It is imperative that the roads in their respective hierarchies function efficiently and are utilised optimally.

Inanda Road is proposed to become a high mobility metropolitan road. This means that the width of the road will be widened to 30m. This will not be without implications as there are 8 properties that fall within the road reserve and another 76 properties have one more structures encroaching on the building line. The concepts further recommend that several roads with direct access to Inanda Road be closed to reduce potential hazards. There is also a need to introduce traffic management measures at major intersections along Inanda Road.
Several collector roads are useful public transport routes, in particular for minibus taxis. It is recommended that the collector roads north and south of Inanda Road should function as Activity Spines that link, support and give access to all three nodes considering the limited access that will be provided through the main road.

Access roads also perform a similar role but are recommended to become more pedestrian friendly than any other order of road.

4.1.4 Hard Open Spaces

The proposed Concept promotes sustainable development of hard open spaces along secondary order roads to accommodate public transport requirements and promotes tertiary order roads to be pedestrian oriented. Appropriate landscaping and introduction of street furniture is proposed at appropriate locations.

Even though the taxi rank’s current location is not favoured, a compromise needs to be made considering the substantial investment already made and the costs associated with the development of a new taxi rank further along Inanda Road. The taxi rank can be complemented with clearly demarcated public transport pick up spots and taxi holding area.

4.1.5 Soft Open Spaces

The Concept identifies several soft open spaces throughout Molweni. The main objective in this concept is to rejuvenate the open spaces, use them more optimally, introduce more activities and points of interest, and maintain passive open spaces for conservation purposes. The concept identifies areas where new sportsfields, parks and play parks are proposed. Essentially the objective is to create a quality urban environment.

An Eco-Tourism zone is proposed along Umgeni River from the north, east to southern border of the study area. There are several spots of interest within this zone to include: fishing spot, and mountain biking to the north, camping and fishing spot to the east and a picnic spot to the south. All DMOSS areas are to be left untransformed, which will be in line with eThekwini’s Green Corridor Project. There is a need for Municipal authorities to revisit several housing layout proposals that are in conflict with the DM OSS layer.

4.1.6 Public Facilities

The provision and more importantly the upgrading of public facilities is a major priority for the area. A clustering of functional facilities or social facility node is proposed in the vicinity of the health centre, police station and school. There is an idea to either relocate the existing clinic to be accommodated within the social facility node to improve its accessibility and size, or keep the existing one and build a new one on the proposed site.

A park and play park is also proposed within this node. The creation of this node will achieve all the advantages of clustering of functional facilities as mentioned in the earlier sections of this report, as well as to redress glaring imbalances that exist between this community and the neighbouring communities such as Waterfall.

4.1.7 Economic Opportunities

4.1.7a Scenario 1:

There are two nodes identified for the creation of economic opportunities these include the Light Industrial Node in the vicinity of the taxi rank and the Commercial Node in the vicinity of the clinic. Both nodes are traversed by Inanda Road which makes them highly accessible.

The light industrial node is intended for the use of local manufacturers, light industrial workers such as motor mechanics, panel beaters and scrap yards. This location is also ideal for the establishment of incubators. Investors would also be encouraged to consider area’s potential.

The commercial node is intended to accommodate a neighbourhood shopping centre, market stalls, petrol filling station, commercial offices, and a public square.

The establishment of both nodes will ultimately increase the number of locally available employment opportunities.

4.1.7b Scenario 2:

In Scenario 2, there are two nodes identified for the creation of economic opportunities these include the Mixed Use Node in the vicinity of the taxi rank and the Community Multi-Use node in the vicinity of the clinic. Both nodes are traversed by Inanda Road which makes them easily accessible.

The Mixed Use Node is intended to accommodate a neighbourhood shopping centre of between 5,000m² to 12,000m², market stalls, petrol filling station, commercial offices, and a public square. This node will also accommodate local manufacturers and/or light industrial workers who may be part of incubator programs. It is proposed that the Mixed Use Node becomes the main node in the area and that it be regarded as the anchor for local economic development and growth.

The Community Multi-Use Node is intended to provide or accommodate local convenience shops, taxi holding area (including pick-up and drop-off points), informal traders, as well as other facilities that provide convenience to local residents.

Figure 4 and 5 below depicts the proposed Scenarios, whilst figures 6, 7 and 8 provide boundaries of proposed nodes and their current land use.
Figure 49: Proposed Development Scenario 1
Figure 50: Proposed Development Scenario 2
Figure 51: Boundary of Social Facility Node showing existing land use
Figure 52: Boundary of Proposed Light Industrial Node Land Use/Proposed Mixed Use Node showing existing land use
Figure 53: Boundary of Proposed Commercial Node/ Community Multi-use Node showing existing land use
5. CONCLUSION

The formulation and completion of the Conceptual Framework has laid a solid foundation upon which decisions to guide the future development of Molweni can be taken. This has been achieved through consideration of critical spatial planning elements for the creation of sustainable human settlements. The considerations have included consideration of Urban Design Guidelines and Urban Design Goals.

Urban Design Guidelines encompass the following concepts:
- Urban densification
- Compaction
- Sustainability
- Urban Integration
- Redressing imbalance
- Quality Urban Environment

Urban Design Goals include the following:
- Goal 1: Promote and enhance accessibility
- Goal 2: Promote Diversity and Choice
- Goal 3: Safe and Secure Environment
- Goal 4: Imageability
- Goal 5: Building a viable local economy
- Goal 6: Promote and improve public transport
- Goal 7: Sustainable services and facilities
- Goal 8: Access and protection of natural environment
- Goal 9: Appropriate settlement form

It is without a doubt that the achievement of these goals will lead to the overall prosperity of Molweni and provide a better life for its residents.

After deliberations, the Steering Committee opted in favour of Concept 2 as the most preferred, in that it would enhance the development process of the area by taking advantage of strategic locations. This is particularly with regards to the Mixed Use Node which is going to become the main node and anchor for development in the area.
PART 3: FUNCTIONAL AREA PLAN PROPOSALS

1.0 INTRODUCTION

The Conceptual Development phase (Phase 3) of the Molweni Functional Area Plan concluded that the future development of Molweni needs to be guided by critical spatial planning elements for the creation of sustainable human settlements. These are made up of Urban Design Guidelines and Urban Design Goals, which comprise the following:

Urban Design Guidelines encompass the following concepts;
- Urban densification
- Compaction
- Sustainability
- Urban Integration
- Redressing imbalance
- Quality Urban Environment

Urban Design Goals include the following;
- Goal 1: Promote and enhance accessibility
- Goal 2: Promote Diversity and Choice
- Goal 3: Safe and Secure Environment
- Goal 4: Imageability
- Goal 5: Building a viable local economy
- Goal 6: Promote and improve public transport
- Goal 7: Sustainable services and facilities
- Goal 8: Access and protection of natural environment
- Goal 9: Appropriate settlement form

The above spatial planning elements are the basis upon which the Molweni Functional Area Plan is crafted.

2.0 FUNCTIONAL AREA PLAN PROPOSALS (To be read in conjunction with Annexure 1)

2.1 MOVEMENT NETWORK PROPOSALS

2.1.1 Road Network

The upgrading of the road network will improve its functionality which will provide convenience, efficiency, affordability, and safety. The following proposals are made:

- The Inanda Road will be upgraded into High Mobility Road with a road reserve of 30m, meaning 15m either side of the road centre line with a further 15m building line restriction.
- The Traffic Impact Assessment (TIA) recommends that all intersections with Inanda Road be improved to KZN-DOT Type B2 Access standards or comply to major intersection standards and the road reserve boundaries in the vicinity of the intersection be extended to 40m. (NDA Consulting Engineers, 2011).
- The TIA further states that in terms of road hierarchy, only a bus or taxi route should intersect with the major arterial route therefore, several informal or less formal intersections will be closed off to cut off direct access.
- There are eight properties that will need to be relocated to allow the upgrading of Inanda Road. The municipality will need to enter into negotiations with property owners regarding relocation, and simultaneously negotiate with land owners of where affected households may be relocated.
- The TIA recommends the following road safety and traffic calming measures;
  - Sidewalks in the vicinity of all schools and crèches.
  - Traffic calming speed humps on all roads that have schools and crèches.
  - Roundabouts at major intersections act as traffic calming measure and regulate traffic. This will be done with topographical factors in mind.
  - Speed tables at major pedestrian crossing points.
- Phased upgrading of gravel roads into black-top all weather access roads.
- Introduce landscaping and street furniture along primary, secondary and tertiary roads.
- Develop and implement a road verges maintenance program to be run by local people.

2.1.2 Public Transportation

The community of Molweni is highly dependent on public transport. The improvement of its capacity and efficiency would be something that comes highly welcome by the community.

This plan supports the introduction of the municipal bus transport system. This is supported by the identification of the bus depot adjacent to the taxi rank. The plan further identifies several roads that will become critical in terms of collection and distribution throughout the study area.

2.2 INFRASTRUCTURE NETWORK PROPOSALS

2.2.1 Water

This plan acknowledges the current shortage of available potable water to the city as a whole. It further notes the implications that this will have on the approval of development applications which includes proposed housing projects for Molweni.
Assuming there is an improvement in terms of available water, the plan supports the standard of supply to within the normal connection distance of each erf.

2.2.2 Sanitation

This plan acknowledges that a waterborne sewerage system is not available throughout Molweni. Therefore, it is recommended that all new developments be provided with an on-site septic tank with soakaways for each erven where geotechnical conditions permit. Where geotechnical conditions do not permit, it is recommended that Urinal Diversion Latrines (UDL) be established.

2.2.3 Stormwater

There is a need to improve stormwater management almost in all areas of Molweni. These need to be directed from all erven onto surfaced roads, from where it will fall into catchpits located at 60-80 intervals and pipes that will discharge it onto open spaces. (Sivest; Environmental Division, 2009).

It is further recommended that all bulk stormwater culverts be designed to accommodate the 1:50 year storm water event, all non-critical points of the reticulation of the 1:3 year event and all critical points of the reticulation of the 1:10 year event.

2.2.4 Electricity

The proposed developments in particular housing, has recommended that the areas capacity be increased such that there be sufficient supply for new developments. There will be an even greater demand for electricity supply for the proposed Mixed Use Node and Commercial Node. The Mixed Used Node comprises a retail shopping centre and light industrial area which consume a substantial amount of electricity. Undoubtedly, there will be a need to have a substation/s to accommodate these proposed developments.

2.3 HOUSING DEVELOPMENT PROPOSALS

2.3.1 Upper Molweni Community Development Project

The Upper Molweni Community Development Project is an initiative of the Ethekwini Housing Department that seeks to create a sustainable human settlement in this area, to ensure greater access to housing opportunity which includes secure tenure, basic services, and housing improvements with supporting social, economic and physical infrastructure. (NDA Consulting Engineers, 2011). The project is primarily an in-situ upgrading project covering an extent of 289ha consisting of:

Table 9: Land Use Table for Upper Molweni Community Development Project

<table>
<thead>
<tr>
<th>Land Use</th>
<th>No of Sites</th>
<th>Area/ha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Special Residential</td>
<td>1,162</td>
<td>161.5</td>
</tr>
<tr>
<td>Commercial</td>
<td>4</td>
<td>0.6</td>
</tr>
<tr>
<td>Community</td>
<td>3</td>
<td>0.8</td>
</tr>
<tr>
<td>Education</td>
<td>3</td>
<td>2.2</td>
</tr>
</tbody>
</table>

2.3.2 KwaDinabakubo Phase 1A

The KwaDinabakubo Phase 1A housing development is proposed on Portion 2 of Erf 630 Molweni. The establishment of KwaDinabakubo developments was necessitated by the need to accommodate some 423 families who were displaced by Inanda Dam.

KwaDinabakubo Phase 1A consists of the following:

- 139 Residential erven;
- 61 Mixed Used erven (with a dwelling house attached);
- 1 open space; and
- Roads

The critical Conditions of Establishment include:

- The erven set aside for residential purposes are to be not less than 750m² in extent as depict on the layout plan. Minor splays (less than or equal to 3metres x 3metres) may be ignored in calculating the minimum area.
- The street frontage of each erven set aside for residential purpose is to be not less than 4metres in length except in the case of panhandle erven which may have a minimum street frontage of 3metres.
- Access strips serving panhandle erven are to be not less than 3metres in width and are to be included wholly within and form part of the erv, which they serve.
- The side boundary lines of erven which are back to back should, where possible, be arranged in the same straight lines to allow for through drainage without staggering the lines of drainage.
- The township shall be developed in three phases. Prior to registration of each phase, the owner shall take out a Certificate of Registered Title in respect of each piece of land included within each phase area.
- All infrastructure shall be to the satisfaction of the Executive Director: City Engineers, eThekwini Municipality.
- Prior to transfer of any erven, all erven earmarked for open spaces of community facilities shall be duly set aside, and shall vest in the ownership of eThekwini Municipality.
- No structure are to be permitted within a distance of 25metres from the centre line of the road P255 (Inanda Road).
- The road reserve boundary of Inanda Road shall be determined in consultation with the Deputy Director-General: Transport, Department of Transport KwaZulu-Natal.
- The developer must adhere to all relevant stormwater conditions of the Natal Ordinance od 1968 and will be done to the satisfaction of the Deputy Director-General: Transport, Department of Transport KwaZulu-Natal.
- Authority is granted in terms of Section 27 91) of the Natal Ordinance No. 10 of 1968, for the establishment of accesses from P255 as indicate on the layout plan.
The access point to the road P255 shall be constructed in consultation with and to the satisfaction of the Department of Transport’s, Regional Engineer, Pinetown to a suitable gravel standard.
- A safe sight distance shall be maintained at all times by cutting of grass and other vegetation of either side of the access.
- The access to P255 shall have a maximum approach grade of 6% (downgrade) or 4% (upgrade) for at least 10metres from the road edge. (Rob Kirby; Town and Regional Planners, Undated).

2.3.3 KwaDinabakubo Phase 1B

KwaDinabakubo Phase 1B consists of the following:

- 113 Residential erven;
- 43 Mixed Use erven (with a dwelling unit attached);
- 1 existing Secondary School;
- 2 Community Facility erven;
- 3 Open Spaces; and
- Roads

The critical Condition as of Establishment are similar to Phase 1A.

2.3.4 KwaDinabakubo Phase 2

KwaDinabakubo Phase 2 consists of the following:

- 80 Residential erven;
- 5 Mixed Use erven;
- 2 Open Space;
- 2 Existing Roads;
- 2 Proposed Roads;

The critical Condition as of Establishment are similar to Phase 1A and 1B

2.3.5 Madimeni and Langefontein Phase 5

This project is made up of three housing projects in close proximity to each other within the Upper Molweni area. The three projects are namely described as:
- Madimeni; Rem of Inanda Location No. 4675;
- Lower Langefontein 5; Rem of Portion 63 of the No. 4675 of the Farm Langefontein No. 598;
- Molweni Phase 1; Remainder of Farm Langefontein No. 5981, Portion of the Remainder of Waterfall No. 978 and Portion 911 of Waterfall No. 978.

The Madimeni Housing Project will consist of three phases with the following land use proposals:
- Madimeni Phase 1A;
  - In-situ Upgrade of existing informal settlement to the northern portion of the site.
  - 226 Low cost residential units
  - 6 Mixed Use erven (with residential units attached).
  - Playlot
  - Roads

- Butlers Farm Phase 1B;
  - 330 Low cost residential units.
  - 9 Mixed Use erven 9(with residential units attached)
  - Roads.
  - Some land will be set aside to accommodate future uses for community purposes to include a school, place of worship, crèche, and a sports field.
- Bond Houses Phase 1C
  - 50 bonded residential units.
  - Internal roads. (Sivest; Environmental Division, 2009).

2.3.6 Waterfall Extension 4

The housing project emanates from the recommendations of the Municipal IDP to develop suburban settlements to accommodate settlements of approximately 1000m². The proposed housing project deviates from the IDP in that it also recommends the development of erven of between 200m² - 300m² to accommodate informal settlement on the eastern portion.

The housing project is prompted by the increasing levels of urbanisation and the demand for housing particularly by the middle income group, to which the financial institutions was to capitalise on whilst dealing with the housing backlog.

The housing development will comprise of 1,200 erven, 400 for low cost RDP housing, 400 for lower middle income and 400 for Upper middle income. The table below provides a detailed table of proposed land uses:

<table>
<thead>
<tr>
<th>Land Use</th>
<th>No. of Erven</th>
<th>Area (ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td>1150</td>
<td>79.33</td>
</tr>
<tr>
<td>Mixed Use Residential</td>
<td>8</td>
<td>0.65</td>
</tr>
<tr>
<td>Commercial</td>
<td>1</td>
<td>0.19</td>
</tr>
<tr>
<td>Community Facility</td>
<td>3</td>
<td>0.54</td>
</tr>
<tr>
<td>Secondary School</td>
<td>1</td>
<td>1.48</td>
</tr>
<tr>
<td>Primary School</td>
<td>1</td>
<td>1.37</td>
</tr>
<tr>
<td>Shared Sportsfield/Playlots</td>
<td>2</td>
<td>1.60</td>
</tr>
<tr>
<td>Open Space/Wetland Areas</td>
<td>14</td>
<td>114.14</td>
</tr>
<tr>
<td>Roads</td>
<td>-</td>
<td>17.58</td>
</tr>
<tr>
<td>Total</td>
<td>1180</td>
<td>216.88</td>
</tr>
</tbody>
</table>

2.4 NODAL DEVELOPMENT PROPOSALS (Do not forget table of Zones within Nodes)

2.4.1 Mixed Use Node

The Mixed Use Node is proposed in the vicinity of the taxi rank, and will include the proposed bus depot, as well as the residential developments. It covers a total area of 17.49ha in extent.

As indicated earlier, the Mixed Use Node is intended to accommodate a range of uses to include; commercial, light industry, transportation, a public square, market stalls and a petrol filling station. The
main commercial use to be accommodated within the node will be the neighbourhood shopping centre
of between 5,000m²-12,000m².
The table below provides a breakdown of the land uses to be accommodated within the Mixed Use
Node:

Table 12: Land Use Table for the proposed Mixed Use Node

<table>
<thead>
<tr>
<th>Land Use</th>
<th>No. of Erven</th>
<th>Area (ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td>5</td>
<td>3.24</td>
</tr>
<tr>
<td>Mixed Use (Residential)</td>
<td>46</td>
<td>4.86</td>
</tr>
<tr>
<td>Commercial</td>
<td>1</td>
<td>0.36</td>
</tr>
<tr>
<td>Mixed Use (Commercial and Light Industry)</td>
<td>35</td>
<td>8.03</td>
</tr>
<tr>
<td>Petrol Filling Station</td>
<td>1</td>
<td>0.42</td>
</tr>
<tr>
<td>Transportation</td>
<td>2</td>
<td>1.98</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>89</strong></td>
<td><strong>17.49</strong></td>
</tr>
</tbody>
</table>

Figure 54: Proposed Mixed Use Node

As indicated, the Social Facilities Node is intended to consolidate and enhance the existing social
facilities within its boundary. The idea is to expand and improve existing facilities but also to introduce
new facilities. This will ultimately improve accessibility to facilities and also provide a variety of facilities
within a walking distance of each other.

The table below provides a breakdown of the land uses to be accommodated within the Social Facilities
Node:

Table 13: Land Use Table for the proposed Social Facilities Node

<table>
<thead>
<tr>
<th>Land Use</th>
<th>No. of Erven</th>
<th>Area (ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Educational</td>
<td>1</td>
<td>5.74</td>
</tr>
<tr>
<td>Community Hall</td>
<td>1</td>
<td>1.01</td>
</tr>
<tr>
<td>Police Station</td>
<td>1</td>
<td>0.82</td>
</tr>
<tr>
<td>Health Centre</td>
<td>1</td>
<td>2.02</td>
</tr>
<tr>
<td>Municipal Office</td>
<td>1</td>
<td>0.19</td>
</tr>
<tr>
<td>Parks</td>
<td>2</td>
<td>0.93</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>7</strong></td>
<td><strong>10.51</strong></td>
</tr>
</tbody>
</table>

Figure 55: Proposed Social Facility Node

2.4.2 Social Facilities Node

The Social Facilities Node is proposed in the vicinity of the Sizakala Centre adjacent Kwadinabakubo
Combined School and stretches in an easterly direction to include the Health Centre, as well as the
Community Hall. It covers an area of 11.54ha in extent.
2.4.3 Community Multi-Use Node

The Community Multi-Use Node is proposed in the vicinity of the Molweni Hyper Store and includes; the car wash, adjacent informal traders and stretches all the way to include the clinic but excludes the cemetery to the east and the Tribal Court to the south.

The node is intended to consolidate and enhance existing uses within its boundary with the primary objective of providing continued convenience to the central part of Molweni. The node will accommodate local convenience shops, informal traders, clinic, and a taxi holding area with supporting pick up and drop off points. It covers an area of 5.73ha in extent.

The table below provides a breakdown of the land uses to be accommodated within the Social Facilities Node:

Table 14: Land Use Table for the proposed Community Multi-Use Node

<table>
<thead>
<tr>
<th>Land Use</th>
<th>No. of Erven</th>
<th>Area (ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td>8</td>
<td>1.09</td>
</tr>
<tr>
<td>Commercial</td>
<td>1</td>
<td>2.99</td>
</tr>
<tr>
<td>Clinic</td>
<td>1</td>
<td>0.4</td>
</tr>
<tr>
<td>Mixed Use</td>
<td>3</td>
<td>1.09</td>
</tr>
<tr>
<td>TOTAL</td>
<td>13</td>
<td>5.15</td>
</tr>
</tbody>
</table>

2.5 LAND USE PROPOSALS / DESIGNATIONS

2.5.1 Residential

General Purpose:

Provides for land and buildings for a variety of housing types, ranging from areas that are almost entirely residential to those areas having a mix of other compatible land uses, where the predominant land use is residential.

The potential impact ranging from low to high refers to the impact of other uses allowed into the zone as well as the impact of the residential development itself. For example, an area designated for high-rise flats would not be zoned “Low Impact Residential” as the impact of a large number of people in proximity to their neighbours and the associated traffic would be medium to high. Such an area would also require ancillary facilities such as crèches, corner stores, laundrettes, etc. all of which would increase the impact of the land uses on adjoining land uses.

Where the predominant use is no longer residential, it would be more appropriate to use a mixed-use zone.

Statements of Intent:

Residential Low Impact:

Provides for land and buildings for a variety of housing types with a limited number of compatible ancillary land uses permissible so as to cater for every day needs of the residents. The density is likely to be low and the amenity high.

Residential Medium Impact:

Provides for a high incidence of primary residential land uses with an increasing number of appropriate ancillary land uses to satisfy local demands and convenience. The residential density may also increase which will increase the impact of the residential land use on the area.

Resort:

This is a land use designation that manages the use of the land for nature based tourism development. The main focus is the provision of accommodation for visitors within a rural setting.

Table 14: Minimum Standards for Residential Uses

<table>
<thead>
<tr>
<th>REGULATION / STANDARD</th>
<th>LOW IMPACT</th>
<th>MEDIUM IMPACT</th>
<th>RESORT</th>
</tr>
</thead>
<tbody>
<tr>
<td>MINIMUM LOT AREA (m² / hectares)</td>
<td>900m²</td>
<td>300m²</td>
<td>200m²</td>
</tr>
<tr>
<td>MAXIMUM NUMBER DWELLING UNITS / NET HECTARE</td>
<td>10 @ 1000m²</td>
<td>10</td>
<td>5</td>
</tr>
<tr>
<td>MAX HEIGHT (STOREYS) SINGLE UNIT DETACHED / ATTACHED MULTI-UNITS</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>
2.5.2 Mixed Use

General Purpose

A designation that allows the development of a range of complementary land uses with varying degrees of mix: retail/commercial/business, services, industrial, administrative, community, educational, environmental and residential opportunities which may include informal trading which, within the use designation are compatible, and generally do not breach the level of amenity contemplated by the designation.

Statements of Intent:

Multi-Purpose Retail and Office

Provides for the development of a full hierarchy of shopping centre types and can comprise a mix of retail, office, residential and entertainment uses.

Medium Impact Mixed Use:

Provides for a mixed-use area where the full range of residential, businesses, offices, service and light industries, civic and social, educational and environmental uses are freely permitted, but excludes other forms of industry.

Table 15: Minimum Standards for Mixed Use

<table>
<thead>
<tr>
<th>REGULATION/STANDARD</th>
<th>MIXED USE DESIGNATIONS</th>
<th>MULTI-PURPOSE RETAIL AND OFFICE</th>
<th>MEDIUM IMPACT MIXED USE</th>
</tr>
</thead>
<tbody>
<tr>
<td>MINIMUM LOT AREA (m²)</td>
<td>1 ha</td>
<td>450 – commercial (900 – industry)</td>
<td></td>
</tr>
<tr>
<td>MINIMUM LOT WIDTH (m) FRONTAGE</td>
<td>40</td>
<td>15(18)</td>
<td></td>
</tr>
<tr>
<td>MAXIMUM NUMBER DWELLING UNITS/NET HECTARE</td>
<td>1 unit per ha</td>
<td>* subject to residential controls</td>
<td></td>
</tr>
</tbody>
</table>

2.5.3 Commercial

General Purpose:

A designation for a site and/or building on, or in which, business is practised and includes: offices, shops, showrooms, restaurants, financial institutions, or any other business purpose, but does not include a service station, garage, an industry, a noxious industry, a panel beater, a builder's yard or a scrapyard.

2.5.4 Light Industry

General Purpose:

A designation for an industrial site and/or building in which the processes carried on or the machinery installed (only electrically driven with no single motor being rated at more than 7.5kw) are such as can be carried on or installed in a Light Industrial designation without causing nuisance to other properties within such designation or to the general public, or without detriment to the amenities of other use designations, by reason of noise, vibration, smell, fumes, smoke, soot, ash, dust, grit, traffic generation, size or other causes. In this designation no solid fuels may be used in connection with the processes. This use may include a builder’s yard and allied trades, laundry, bakery, dairy depot, dry cleaning and similar types of uses.

Statements of Intent

Low Impact Industry

A designation to accommodate a mix of light and service industries, and associated activities to facilitate local economic development and employment opportunities and may also be used as an interface with other industrial zones. The location and development of these zones must not negatively impact on the built or natural environment or watercourses located near them.

Medium Impact Industry

A designation which accommodates a mix of industrial and related land uses and activities, which have lesser environmental impacts, and excludes heavy and noxious industry. The location and development of these zones must not negatively impact on the built or natural environment or watercourses located near them.

Table 16: Minimum Standards for Light Industrial Use

<table>
<thead>
<tr>
<th>REGULATION/STANDARD</th>
<th>INDUSTRIAL ZONES</th>
</tr>
</thead>
<tbody>
<tr>
<td>MINIMUM LOT AREA (m²)</td>
<td>LOW IMPACT</td>
</tr>
<tr>
<td>900</td>
<td>1800</td>
</tr>
<tr>
<td>MINIMUM LOT WIDTH (m) FRONTAGE</td>
<td>18</td>
</tr>
<tr>
<td>MAXIMUM NUMBER OF DWELLING UNITS/NET HECTARE</td>
<td>OTHER</td>
</tr>
</tbody>
</table>
Statements of Intent:

**Government and Municipal**
Provides for buildings to be erected and used for National, Provincial and Municipal administration and services.

**Worship**
Provides for land, a building or portion of a building to be used as a church, chapel, oratory, synagogue, mosque, temple, Sunday school, or other place of public devotion.

**Institutions:**
Provides for land and buildings used for the accommodation and care of the aged, places of safety and orphanages.

**Health and Welfare:**
Provides for the full range of public and private hospital, medical centres, clinics, sanatoria, community care, welfare and social requirements, including pension pay points.

**Creche**
Means a building or portion of a building operated for the purpose of providing care, protection and guidance to seven or more infants and young children during only part of a 24 hour day. Creche includes child minding facility, day care centre, nursery schools, pre-schools, and extended pre-school or school day care facilities, but excludes public and private education facilities or any facility offering care to individuals for a full 24 hour period. These are to be established in accordance with the regulations of the Provincial Health Department.

Table 18: Minimum standards for Educational Uses

<table>
<thead>
<tr>
<th>REGULATION/STANDARD</th>
<th>EDUCATION</th>
<th>CRECHE</th>
</tr>
</thead>
<tbody>
<tr>
<td>MINIMUM LOT AREA (m² / OR ha)</td>
<td>To the satisfaction of the local authority and the Dept. Health</td>
<td>To the satisfaction of the local authority and the Dept. Health</td>
</tr>
<tr>
<td>MINIMUM LOT WIDTH (m)</td>
<td>OTHER</td>
<td></td>
</tr>
</tbody>
</table>

2.5.7 Transportation

This designation makes provision for developments and buildings associated with public and private transportation in all its forms, e.g. air, land and sea access into and out of the provincial and national boundaries and includes customs and border control.

This designation would include Mode transfer stations/bus and taxi termini, railway stations, airports, and cycle pedestrian ways if these are not accommodated in an open space system. (In some instances it will be necessary to split these into separate zones depending on the need to differentiate controls).

**Statement of Intent:**

**Bus and Taxi Rank**
Means land, a building or part of a building used for the purpose of parking six or more buses or taxis. For the purpose of this scheme the terms “bus” and “taxi” shall mean a vehicle used to transport people for gain and/or registered as such.

2.5.8 Environmental Services (Eco-Tourism, Conservation and Open Spaces)

This designation is intended to include areas requiring preservation and conservation because they provide ecosystem services, are unique natural landscapes, viewpoints, areas of ecological, historical and/or cultural importance, bio-diversity and/or have unique, rare or endangered habitats or species. These areas are either owned or managed by the Council and accessible to the general public or owned and managed by a private person or other body and not accessible to the general public.
Statement of Intent

Eco-Tourism and Conservation

Provides for land that has been proclaimed as a Protected Area in terms of the relevant legislation and has special status and value due to its function in the provision of services contributing to the balance of nature or the prevention of natural disasters, e.g., the retention of water in wetlands, grasslands and natural forests. It may include areas requiring preservation and conservation because they provide ecosystem services, are unique natural landscapes, viewpoints, areas of ecological, historical or cultural importance, bio-diversity, and have unique habitats or species.

Active Open Space

Provides for the development and management of a system of publicly and privately owned areas as part of the sustainable open space system and the local authority's environmental services. It includes independent or linked open space areas and green lung areas for sporting and recreational activities and may include ancillary facilities and buildings.

Cemetery

Provides for public and private cemeteries, memorial parks, funeral chapel and crematoria.

Table 19: Minimum Standards for Environmental Services Use

<table>
<thead>
<tr>
<th>REGULATION/STANDARD</th>
<th>ENVIRONMENTAL SERVICE ZONES</th>
</tr>
</thead>
<tbody>
<tr>
<td>NATURE CONSERVATION</td>
<td>Active Open Space</td>
</tr>
<tr>
<td>For Conservation purposes. No development shall be carried out on this land without the Council’s Authority. Any development permitted shall be compatible with the permitted use.</td>
<td>Recreational purposes, including sporting facilities, together with ancillary buildings. Subject to approval by the local authority.</td>
</tr>
</tbody>
</table>

2.5.10 Urban Agriculture

This designation makes provision for the preservation of land that surrounds an urban area for agricultural purposes until such time as further urban development, services and facilities are needed.

Statement of Intent

Provides for land and buildings where the primary activity is the extensive grazing of livestock, crop production and other agricultural pursuits where there is less impact on the environment in terms of traffic, noise, dust, odour, run-off and underground water.

2.5.9 DMOSS

This designation refers to the Durban Metropolitan Open Space System (DMOSS), which is system of open spaces, of approximately 74,000ha of land throughout eThekwini Municipality. The system incorporates areas of high biodiversity value linked together in a viable network of open spaces. (eThekwini Municipality, 2011)

Statement of Intent

In this designation, it is intended that provincial and national biodiversity conservation targets will be pursued; in addition D’MOSS provides a range of ecosystem goods and services to all residents of eThekwini, including the formation of soil, erosion control, water supply and regulation, climate regulation, cultural and recreational opportunities, raw materials for craft and building, food production, pollination, nutrient cycling and waste treatment (eThekwini Municipality, 2011).
PART 4: PROJECTS AND IMPLEMENTATION PLAN

The following catalytic projects have been identified by the Nodal Functional Area Plan in order to fast track the development process of Molweni. The projects are grouped as follows:

- Short Term (Less than 5 Years to implementation)
- Medium Term (5-10 Years to implementation)
- Long Term (10-more Years to Implementation)

Table 20: Short Term Projects

<table>
<thead>
<tr>
<th>NO.</th>
<th>PROJECT NAME / DESCRIPTION</th>
<th>PRIORITY</th>
<th>ESTIMATED PROJECT VALUE</th>
<th>DATE OF IMPLEMENTATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Start negotiations with households who will be affected by the upgrading of Inanda Road.</td>
<td>High</td>
<td>N/A</td>
<td>June 2012</td>
</tr>
<tr>
<td>2.</td>
<td>Start negotiations with land owners where affected households may be relocated.</td>
<td>High</td>
<td>N/A</td>
<td>June 2012</td>
</tr>
<tr>
<td>3.</td>
<td>Upgrading of intersections with Inanda Road to KZN-DOT Type B2 Access Standards.</td>
<td>High</td>
<td></td>
<td>June 2013</td>
</tr>
<tr>
<td>4.</td>
<td>Close off all unsafe intersections with Inanda Road.</td>
<td>High</td>
<td></td>
<td>June 2013</td>
</tr>
<tr>
<td>5.</td>
<td>Upgrading of sidewalks in the vicinity of schools and creches.</td>
<td>High</td>
<td></td>
<td>June 2012</td>
</tr>
<tr>
<td>6.</td>
<td>Traffic calming speed humps in the vicinity of schools and creches, as well as speed tables at pedestrian crossing points.</td>
<td>High</td>
<td></td>
<td>June 2012</td>
</tr>
<tr>
<td>7.</td>
<td>Landscaping and furniture along main or primary roads.</td>
<td>Medium</td>
<td></td>
<td>June 2013</td>
</tr>
<tr>
<td>8.</td>
<td>Develop and implement a road verges maintenance program.</td>
<td>Medium</td>
<td></td>
<td>June 2012</td>
</tr>
<tr>
<td>9.</td>
<td>Introduction of a municipal bus transport system.</td>
<td>Medium</td>
<td></td>
<td>June 2013</td>
</tr>
<tr>
<td>11.</td>
<td>Finalize and implement Upper Molweni Community Development Project.</td>
<td>High</td>
<td></td>
<td>June 2012</td>
</tr>
<tr>
<td>12.</td>
<td>Finalize and implement Kwazimababuko Phase 1A Housing Project.</td>
<td>High</td>
<td></td>
<td>June 2012</td>
</tr>
<tr>
<td>13.</td>
<td>Finalize and implement Kwazimababuko Phase 1B Housing Project.</td>
<td>High</td>
<td></td>
<td>June 2012</td>
</tr>
<tr>
<td>14.</td>
<td>Finalize and implement Kwazimababuko Phase 2 Housing Project.</td>
<td>High</td>
<td></td>
<td>June 2012</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>NO.</th>
<th>PROJECT NAME / DESCRIPTION</th>
<th>PRIORITY</th>
<th>ESTIMATED PROJECT VALUE</th>
<th>DATE OF IMPLEMENTATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>17.</td>
<td>Finalize and implement Madimeni and Langefontein Phase 5 Housing Project.</td>
<td>High</td>
<td></td>
<td>June 2012</td>
</tr>
<tr>
<td>18.</td>
<td>Finalize and implement Waterfall Ext. 4 Housing Project</td>
<td>High</td>
<td></td>
<td>June 2012</td>
</tr>
<tr>
<td>19.</td>
<td>Street lighting along primary pedestrian routes and high incidents spots.</td>
<td>Low</td>
<td></td>
<td>June 2013</td>
</tr>
</tbody>
</table>

Table 21: Medium Term Projects

<table>
<thead>
<tr>
<th>NO.</th>
<th>PROJECT NAME / DESCRIPTION</th>
<th>PRIORITY</th>
<th>ESTIMATED PROJECT VALUE</th>
<th>DATE OF IMPLEMENTATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Upgrading of Inanda Road into High Mobility Road.</td>
<td>High</td>
<td></td>
<td>June 2016</td>
</tr>
<tr>
<td>2.</td>
<td>Street lighting for secondary pedestrian routes.</td>
<td>Medium</td>
<td></td>
<td>June 2016</td>
</tr>
<tr>
<td>3.</td>
<td>Electricity supply upgrading to support new developments</td>
<td>High</td>
<td></td>
<td>June 2016</td>
</tr>
<tr>
<td>4.</td>
<td>Upgrading of existing police station</td>
<td>Medium</td>
<td></td>
<td>June 2016</td>
</tr>
<tr>
<td>5.</td>
<td>Development of incubators around within the Mixed Use Node.</td>
<td>Medium</td>
<td></td>
<td>June 2016</td>
</tr>
</tbody>
</table>

Table 22: Long Term Projects

<table>
<thead>
<tr>
<th>NO.</th>
<th>PROJECT NAME / DESCRIPTION</th>
<th>PRIORITY</th>
<th>ESTIMATED PROJECT VALUE</th>
<th>DATE OF IMPLEMENTATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Development of a new clinic.</td>
<td>Low</td>
<td></td>
<td>June 2021</td>
</tr>
<tr>
<td>2.</td>
<td>Development of Community Hall next to Tribal Court</td>
<td>Low</td>
<td></td>
<td>June 2021</td>
</tr>
<tr>
<td>3.</td>
<td>Development of FET College</td>
<td>Low</td>
<td></td>
<td>June 2021</td>
</tr>
<tr>
<td>4.</td>
<td>Landscaping and maintenance of public spaces.</td>
<td>Low</td>
<td></td>
<td>June 2021</td>
</tr>
<tr>
<td>5.</td>
<td>Library and Computer school.</td>
<td>Medium</td>
<td></td>
<td>June 2021</td>
</tr>
</tbody>
</table>
PART 5: GENERAL DEFINITIONS

ACCESS - Means safe, adequate, and usable ingress to or egress from a property or use.

AMENITY - Means those qualities or conditions in an area, which contribute to the pleasantness, harmony and coherence of the environment and to the public's enhanced enjoyment of any permitted use.

BUILDING - Means any structure (or part thereof) of a temporary or permanent, movable or immovable nature, above, below or at ground level. This includes any tank, swimming pool or radio-mast and any wall, retaining wall or close-boarded fence more than two metres in height at any point, but excluding any open fence, post, steps, pier, ramp, fountain, statue, fish-pond, pergola or other garden ornamentation.

COVERAGE - Means the proportion of a lot covered by buildings or structures of a permanent nature, and is expressed as a percentage of the lot area as defined. Thus 25% coverage means that only one quarter of the lot may be covered by buildings. Only roofed areas are included in the coverage.

DENSITY - Means the number of Chalets, Dwelling Units, Hotel Bedrooms and other residential uses permitted, which is determined, where applicable, by dividing the surveyed area of an Erf(lot), excluding the area of an access way on a hatchet-shaped erf and any registered right of way, by the minimum Erf size which is applicable to the Use Zone in which the Erf is situated and adjusting this figure to the nearest whole number. The permitted density is expressed either in terms of Dwelling Units per hectare or in terms of Dwelling Units per Erf when the Minimum Erf size exceeds 20 hectares.

HEIGHT - Means the vertical distance of a building measured from the average finished grade surrounding the building, to the highest point of the building. It is measured in storeys or floors and is expressed as a number.

LAND - Means any portion of the area covered by the Planning Scheme and includes all water bodies.

MIXED USE - Means the development of a parcel(s) of different land uses on adjacent sites.

STOREY - Means a room or set of rooms at one level, including any room the floor of which is split into two or more levels, and shall have the following implications:

- Basement shall not count as a storey provided it is used for the purpose of parking vehicles, service installations, such as transformer and metre rooms, or storage, and not for residential purposes, or as a shop, factory or work place;
- The ground floor may be on several levels;
- A pitched roof containing a habitable room and any other type or style of roof which contains or supports any rooms, structures or features over and above those mentioned in paragraph (e) below and which the Local Authority considers to be habitable shall count as a storey;
- A storey shall not be higher than 4.5 metres, including the roof area. If a storey is higher than this, each 4.5 metres or part thereof shall count as a storey;
- Lift, meter and similar rooms and architectural features which are in proportion to the building do not constitute a storey.

USE - Means the purpose (type and extent) for which land or a building is arranged, designed, or intended, or for which either land or a structure is occupied or maintained.

1. Definitions - Types of Building and Land Use

ARTS AND CRAFT CENTRE - Means a building, or portion of a building, designed and primarily used for the combined purpose of the production and sale of arts and crafts by retail, provided that:

(a) the activity or use shall not occupy a floor area greater than 150m²,
(b) no solid fuels are used in connection with any processes,
(c) only electrically driven machinery is used, with no single motor being rated at more than 7.5 kw, and
(d) the processes carried on, the machinery used and the goods and commodities carried to and from the premises will not cause a nuisance to surrounding uses, or be prejudicial to the amenity of the locality in which the use is situated through the emission of: ash, dust, fumes, grit, noise, oil, smell, smoke, soot, steam, vapour, vibration and waste product.

ATTACHED DWELLING UNIT - Means a dwelling in a building comprising two or more dwelling units in which the units are vertically separated from other units by a fire wall together with such outbuildings as are ordinarily used therewith. This group includes: duplex flats, semi-detached houses and terrace houses.

BUS AND TAXI RANK - Means land, a building or part of a building used for the purpose of parking six or more buses or taxis. For the purpose of this scheme the terms "bus" and "taxi" shall mean a vehicle used to transport people for gain and/or registered as such.

BUSINESS / COMMERCIAL PRECINCT - Means a site and/or building on, or in which, business is practised and includes: offices, shops, showrooms, restaurants, financial institutions, or any other business purpose, but does not include a service station, garage, an industry, a noxious industry, a panel beater, a builder's yard or a scrapyard.

CLUSTER HOUSING - Means a group of two or more freestanding dwelling houses and/or semi-detached dwelling houses, which do not exceed two storeys in height and where each dwelling unit has direct access to a private open area and common land, which together with such outbuildings as are ordinarily used therewith, have been designed as a harmonious entity.

COMMUNITY FACILITY - Means a building and/or land used primarily for social assemblies, gatherings, meetings, sport and recreational purposes.

DUPLEX FLAT / DWELLING UNIT - Means a dwelling unit in a building, where each unit consists of a ground floor which is connected by an internal staircase and where the unit has direct access to a private open area.

DWELLING HOUSE/DWELLING UNIT - Means a building constructed, used or adapted to be used, as a dwelling unit to accommodate one family and which includes not more than one kitchen, habitable rooms for the accommodation of bona fide domestic staff, outbuildings and accessories as are ordinarily used therewith.

FLAT - Means a dwelling unit in a building of one or more floors in which each dwelling unit is separated from other units, or other accommodation, in the same building either vertically or horizontally or both, which if located on an upper floor, shares access by means of common staircases, lifts or balconies, together with such outbuildings as are ordinarily used therewith.

HOTEL - Means a building or portion of a building, other than residential building (1), which is designed for or makes provision for accommodation of travellers and motor vehicles used by them, together with such function
rooms and outbuildings as are ordinarily used therewith. This group includes: hotel, motel, guesthouse, health resort.

**MAISONETTE** - Means a two storey building consisting of 2 dwelling units placed one above the other with separate entrances.

**MEDIUM DENSITY HOUSING** - Means a group of two or more attached and/or detached dwelling units, together with such outbuildings as are ordinarily ancillary thereto, with each dwelling unit having direct access to a private open area and access to common land, the whole development having been designed as an harmonious entity. Such development may include duplex flats, semi-detached houses, terrace houses, maisonettes or dwelling houses.

**OFFICE BUILDING** - Means a building or part of a building designed and used for the purpose of private administration, the practice of a profession or the carrying on of a business other than that of a retail or wholesale nature but does not include a public office. This group includes: a bank, building society, insurance office, estate agent, medical consulting rooms, insurance office, travel agency, post office and other professional suites.

**PARKING GARAGE** - Means a building, part of a building or land designed primarily for the purpose of parking, other than parking required in terms of this Scheme (chapter 11), and includes washing and servicing of motor vehicles, but does not include a building, any part of which is designed for use as a workshop for the repair of motor vehicles or for the sale of petrol, oil and accessories.

**PLACE OF PUBLIC AMUSEMENT** - Means a building or land used for public entertainment and includes a theatre, cinema, music-hall, concert-hall, amusement-arcade, dance hall, skating-rink, race-track, sports-arena, commercial exhibition-hall, billiards room and fun-fair.

**PLACE OF PUBLIC ASSEMBLY** - Means a building or land, used for social meetings, gatherings, religious purposes or indoor recreation, but does not include a place of public amusement.

**PUBLIC OFFICE/BUILDING** - Means an office building used for any Central, Provincial or Local Government administration purpose, and includes an administrative office, Local Authority office and town hall, government office, court house, police station, fire station, public library, public art gallery, public museum, and buildings ordinarily ancillary thereto.

**RECREATIONAL BUILDING** - Means a clubhouse, gymnasium, squash court, pavilion, hanger for microlights/hang gliders, livery stable, indoor range, indoor tennis court, indoor swimming pool, and any ancillary shelter or change rooms or other buildings ordinarily used in conjunction with a sport. A clubhouse may include dining facilities and lounges.
BIBLIOGRAPHY


