PINETOWN SOUTH
LOCAL AREA PLAN, FUNCTIONAL AREA PLAN
AND SCHEME REVIEW

November 2015
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Section 1: Status Quo

1 PROJECT BACKGROUND AND INTENTIONS

1.1 INTRODUCTION & PROJECT BACKGROUND

eThekwini Municipality as a recipient of the Integrated City Development Grant (ICDG) has identified the Greater Pinetown South Local Area as an area in need of strategic intervention due to their prevailing status as R293 townships. The Townships located within this Local Area are all dormitory townships with old stock housing, informal settlements as well as recently built low cost social housing.

The need for the Pinetown South LAP stems from the area’s former historical legacy, where development occurred on an ad hoc basis. These areas were planned without due consideration been given to integration of the community or area within the wider Metro.

The Pinetown South Area forms an integral part of the Metropolitan area and is well situated in relation to major industrial and employment centres; however they are subject to an acute process of urban decay. Despite this, evidence exists that these townships have the potential to become vibrant areas, by providing an improved quality of live through targeted intervention. The challenge therefore is multi-faceted and includes addressing processes of urban decay whilst balancing this by promoting economic growth and development.

The eThekwini Municipality is therefore looking at producing a LAP, FAP and Scheme in the Pinetown South Area in order to conceptualize and formulate implementation strategies in a manner that maximises the land value and promotes integrated and sustainable mixed use development that benefits communities from different income groups. It is critical that a LAP is formulated to define the scale of development, guide and facilitate development that will attract public and private investment and direct social facilities as well.

1.2 AIMS AND OBJECTIVES OF THE PROJECT

From the Terms of Reference, it is understood that the aim of this project is to prepare a Local Area Plan for the broader Pinetown South Area. These plans will portrait three aspects:

- A comprehensive Local Area Plan (LAP);
- Functional Area Plan (FAP) and
- Land Use Management Scheme (LUMS)

The culmination of the above Plans will promote the regeneration, revitalisation, upgrading and redevelopment of the wider Pinetown South Area. The LAP will identify key investment areas and projects which will inform the Functional Area Plans. Consequently, Functional Area Plans will be prepared which will include urban design, project packages and programmes for implementation.

The overall objective of this plan would be to develop an LAP, FAP and Scheme that will be based on a coherent development vision for the area. This will establish a set of practical, actionable strategies, which would evolve via a consultative planning process by:

- Preparing short, medium and long term scenarios, strategies, guidelines and procedures to facilitate, support and direct growth and spatial development of the study area.
- Describing and analysing the status quo of all the development sectors in the Study area.
- Understanding social and economic needs of the area.
- Providing guidelines for the development and management of the area.
• Indicating and providing bulk infrastructure priority development projects (specialist roads and transport/public transport planning input, electricity, water and sanitation).
• Providing an overarching traffic and transportation response and to refine it into detailed physical planning directives for the study area.
• Identifying and coordinating how investment opportunities may be created in the area, for both the public and private sector, and how linkages to these opportunities may be created for the socio-economically disadvantaged people of the region.
• Creating a coherent environment that maximizes the economic potential of the area.
• Re-enforcing and further making provision for the community’s social, economic and environmental needs.
• Undertaking a land audit (state, ITB, privately owned land and municipal land)
• Improving the degraded natural and built environment.
• Improving local and regional linkages and the potential of the MR559 corridor development.
• Providing guidance on the implications of the existing and proposed mixed-use commercial/retail/business/light industrial node from a market point of view.

It is envisaged that the above objectives will facilitate the upgrading, renewal and integration of the area within a greater Metropolitan context. It is further envisaged that this will foster human development, promote local economic development and generally improve the quality of life of all who share an interest in this area. This Situational Analysis Report thus aims to provide a basis for the further phases and deliverables of the study.
2 PLANNING CONTEXT

2.1 THE STUDY AREA

The study area is approximately 11909.80 Ha in extent and is essentially the bulk of the Inner West region (see Map 2, which is situated to the South of the N3 Toll Road, and is collectively referred to as Pinetown South (as per Map 1).

Map 1: Municipal Context

The study area (see Table 1) encompasses the largest portion of the Inner West Region, comprising of the following wards:

- Ward 12
- Ward 13
- Ward 14
- Ward 15
- Ward 16
- Ward 17
- Ward 63
- Ward 71
- Ward 72

Table 1: Study Area- Ward Information

<table>
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<th>Ward Number</th>
<th>Community Area</th>
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<tr>
<td>12</td>
<td>Kwalinda, Kwandengezi-A, Kwandengezi</td>
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<td>13</td>
<td>Luganda, Nagina, Marianridge, Marianheights, Madiba Valley, Marian Park, Pineview, Regency Park, Sinqobile, Sithundu Hills</td>
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<td>14</td>
<td>Emansenseni-A, Mozambique-B, Dassenhoek, Namibia-C, Cutshwayo, Coffee Farm, Angola Blocks-E, Thornwood</td>
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<td>15</td>
<td>Tollgate South, Tshelimnyama, Mpola, Marianhill</td>
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<td>16</td>
<td>Caversham Glen, Nazareth, Umshini, St Wendolins Ridge, Moseley Park</td>
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<td>17</td>
<td>Nsiswakazi, Phumphele, Klarwater, Savannah Park</td>
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<td>Marian Industrial Park, Nirvana Hills, Northdene</td>
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Pinetown South is strategically located in the Inner West Region, which is situated South of the N3 Toll Road. The study area is strategically located to the west of Pinetown and Durban CBD. It adjoins the N3 freeway and the MR559. The study area includes the key industrial areas like: Westmead Industrial Park, Marian Industrial Park and the Wiltshire Road Industrial area. Wiltshire Road is seen as a potential industrial node, with MilkyWay as a potential mixed use node.

### 2.2 APPLICABLE AUTHORITIES

Although the project area is located within eThekwini’s Inner West region as indicated, and the Municipality is the responsible authority for all service delivery within the area, there are a number of additional authorities with either direct and ad hoc jurisdiction over the study area, or adjacent to the study area, as important roleplayers as illustrated by the Authorities Map overleaf. These include the following:

- The **South African National Roads Agency** (SANRAL) as controlling authority over the national N3 route will need to be consulted as any proposed development applications in the areas adjacent to the route will require comment and authorisation from the Agency.
- KZN DoT as the controlling authority over Provincial and District Roads (M48/ P559, Hans Dettman, M7/P82, Old Richmond Rd) will need to be consulted as any proposed development applications in the areas adjacent to the route will require comment and authorisation from the Agency.

### 2.3 ROAD OWNERSHIP

Map 2: Road Ownership
2.4 SERVITUDES AND LEGAL CONSTRAINTS

The Servitudes and Legal Constraints Map (overleaf) illustrates the various Eskom Servitudes and Road Reserves which traverses the study area and which will need to be recorded and considered during the planning exercise. The three most significant legal constraints however relate to:

- The N3 Road Reserve and its associated regulations guiding development along this route; and
- The Palmiet River, Umhlatuzana River, Umbilo River, Umkumbaan River and Umlaas River as well as the associated streams: including the Heron, Situndu Stream, Mgoshongweni, Cutswayo and London Spruit, as determined by eThekwini Municipality.

2.5 LAND COVER

The broad land cover for the study area and its surroundings is illustrated by the General Land Cover Map (overleaf). It is evident that the study area has a predominant residential land use, portions of commercial and Industrial land use and a small portion of agricultural land use.

2.6 ZONINGS

eThekwini Municipality is in process of consolidating all of its Planning Schemes which were traditionally separated by planning units and individual scheme areas. Currently there are two historical scheme areas which traverse the northern portions of the project area as illustrated by the Zonings Map (Map 3).

- The Inner West Planning Scheme (Rev2) covers most of the project area. From the zonings, it is evident that the Pinetown South Area is primarily dedicated to Residential land uses and associated social facilities, as well as some Industrial use.
- The former R293 Scheme.
- LEFTEA applications
Map 4: Zoning
3 PREVIOUS PLANNING INITIATIVES

The wider contextual studies which impact on the study area are described briefly below and include:

- eThekwini Central Spatial Development Plan (SDP) - (2013-2014) - 2009 Annual Review

3.1 ETHEKWINI SPATIAL DEVELOPMENT FRAMEWORK

The Spatial Development Framework (SDF) (figure 1) for the Durban Metro Area provides a context and parameters within which to develop Local Council spatial plans. Spatial structuring elements are the key tools of the SDF. Their translation to the Local Council level gives spatial expression to the goals and strategies of the IDP, provides a spatial manifestation of the sector programmes, integrates programmes across sectors and assists in identifying strategic project areas and development priorities. The eThekwini Municipality Spatial Development Framework has identified Pinetown South as a Strategic Priority area. The strategic focus in relation to the movement system within the SDF is to enhance and improve transport linkages within the Ethekwini Municipal Area. In terms of Pinetown South, the SDF proposes a better linkage between Pinetown South and Umlazi, referring to the MR579 (which will link Umlazi and Pinetown South) and the MR577 which will be promoted as an outer link road.

In keeping with the principles of the Development Facilitation Act, 1995, a strong link hierarchy for the safe and efficient movement of people is required which will enable and ensure appropriate localities that will enhance local economic development and growth.

In terms of the principles set out in the Development Facilitation Act, in undertaking spatial planning, municipalities should, inter alia:

- Densify and rationalise their use of land;
- Create access and facilities for communities who were formerly marginalised; and
- Address the skewed distribution of land ownership.

The Spatial Development Framework depicts pictorially the thrust of the IDP showing the City’s investment intentions and development management approach. In order to achieve this spatial strategy, the SDF needs to be translated into more geographically specific physical development and land use management guidelines through the preparation of Spatial Development Plans (SDPs). This analysis will be done within the context of our overall Spatial Development Framework which divides the municipal area into an urban core, urban, rural, natural resource, agricultural and industrial areas.

Notwithstanding the above, key spatial drivers will determine the direction of investment within the City, and thus the Spatial Development Framework specifically responds to these needs by identifying the City’s spatial investment priorities including:

- **Northern Region**: Dube Trade Port and surrounds;
- **Central & Southern Regions**: Back of Port & Durban International Airport Site;
- **Western Region**: Cato Ridge and Hammersdale/ Mpumalanga industrial precincts.

**An Area Based Management and Development (ABMD) Approach**

The importance of acknowledging the unique spatial character of a particular locale has been a key area of learning during the implementation of the City’s Area Based Management & Development (ABMD) pilot programme. As part of our citizen empowerment challenge the Municipality have identified five strategic areas to drive the ABMD approach. The areas are:

- Inner eThekwini Regeneration and Urban Management Programme (iTrump) – Focusing on Inner City Regeneration and Urban Renewal.
- Cato Manor Development Association (CMDA) – Focusing on economic and social upliftment and integration of Cato Manor into the municipal institutional system.
- South Durban Basin (SDB)– Regeneration of the industrial base in southern Durban, creation of cleaner and greener industries whilst improving the residential conditions in the area.
- Inanda, Ntuzuma and KwaMashu (INK) – This Urban Renewal Programme is about generating economic activity as well as revitalising the residential areas of Inanda, Ntuzuma and KwaMashu.
- Rural ABM – Focusing on addressing poverty and bringing integrated development into areas which, historically, received very little support from the erstwhile government.

An important implication of the SDF strategy is that all development proposals that require the City to extend platform infrastructure to new areas will need to be carefully assessed within context as to whether they are cost effective, sustainable, and in the best interest of the City.

An Urban Development Line (UDL) concept used not only to demarcate the extent to which urban development will be permitted to establish within the metropolitan area in the long term, but more specifically to promote a more convenient, efficient, equitable and sustainable settlement form. Whist the line indicates the outer limit to which urban development will be restricted there will be areas within the UDL that will not be permitted to be developed (i.e. environmentally sensitive areas).

Figure 1: EThekwinin Municipality SDF

Source: eThekwini SDF 2013/14
3.2 ETHEKWINI CENTRAL SPATIAL DEVELOPMENT PLAN (2013/2014)

The primary spatial response to the development context, needs and vision of the Integrated Development Plan (IDP) for eThekwini is the Spatial Development Framework (SDF). Through the preparation of Spatial Development Plans (SDPs), this spatial strategy can be achievable and successful, by translating them into more geographically specific physical development and land use management guidelines.

The Central Spatial Development Plan (CSDP) (Figure 2) identified the capacity of the existing natural and built environment to create sustainable investment and development opportunities and establishes linkages to opportunities for the socio-economically disadvantaged communities of the south.

The main objectives of the CSDP include:

- To translate the policies contained within the Ethekwini Municipality Spatial Development Framework (SDF) into more detailed and geographically specific land use directives.
- To consolidate update and review existing spatial planning and development management mechanisms in the Central region.
- To guide the preparation of more detailed local area plans, precinct plans and land use schemes.
- To provide a more concrete spatial and land use guideline policy for use by municipal and other infrastructure service providers in planning and delivering their services.
- To provide direction and guidance to private sector and community investors with respect to the levels, locations, types and forms of investment that need to be made, which the Municipality can support in terms of a phased plan over a period of time.

Figure 2: Central Spatial Development Plan 2013/2014

Source: Central Spatial Development Plan – 2013/14 Annual Review
As an important component of the Durban Metro, has been covered by a variety of planning initiatives at a variety of scales. The underlying planning approaches to guide development in this area have largely been established in the Ethekwini IDP and include:

a) **Restructuring the city** and providing equal opportunities for all communities by contributing to the process of creating a less divided and more democratic city which facilitates all citizens to develop their potential;

b) **Identifying the unique opportunities** the central areas can contribute to the development of the unicity, including potentially economic, residential, environmental, agricultural, inland tourism, and a unique Africa experience;

c) **Utilising the unique potential** of the Central area by basing the future development on the distinctive characteristics and opportunities including the range of physical attributes including the many rivers and streams and natural landscape, the existing economic development, the existing well established transport infrastructure and the rural landscape;

d) **Supporting the creation of an efficient urban development** ensuring the development of a more compact and affordable development for both the municipality and residents;

e) **Enabling basic needs provision** ensuring the provision of basic physical and social services to all residents;

f) **Ensuring sustainable development** in terms of environmental, economic and social aspects, verifying that all individual and overall development supports the maintenance of an acceptable built and natural environment that can be sustained economically and contributes to the social development of the community.

In order to achieve desired outcomes listed above the CSDP makes the following recommendations linked to the Pinetown South area to:

- **Encourage the development of range of industrial activity by:**

Encouraging the development of both large formal and small/micro industries,

Concentrating micro industries around the existing industrial hives along existing activity corridors.

- **Protect the viability of the core CBD and strengthen the mixed economic base by intensifying mixed use development especially in the core Pinetown CBD**

Permit planned expansion of the CBD. Maximise mixed use opportunities within urban nodes of Clermont and Kwadabeka to stimulate the local economy and attract a spectrum of varying income-earners.

- **Establish a clear movement hierarchy and link rail systems to road based transport systems to road by:**

Maintaining and upgrading low friction metropolitan routes (M13, M1, M7).

Creating a well-defined network of local linkages between these higher order routes.
- Appropriate additional residential development areas and maintaining a variety of accommodation forms and affordability levels

Maintain and consolidate high quality residential areas by accommodating a range of income low, middle and high income residents. Upgrade facilities and infrastructure in the Pinetown South areas so as to improve overall quality of living for the residents in this region.

- Identifying appropriate residential densification opportunities

Encourage densification opportunities in areas with potential for infill and compaction especially in vacant and underutilised areas and adjacent to HPPTN.

- Maintaining a high quality open space system by:

Protecting and upgrading important river systems such as the Palmiet and Aller River valleys, the Umbilo & Umhlatuzana Rivers and the Kloof Escarpment,

Ensuring that development does not occur on the slopes of the Kloof Escarpment and in Paradise Valley to prevent downstream flooding,

Ensuring that river corridors and public open spaces become an active part of the urban environment which enhance the unique character of the area,

Protecting the New Germany Nature Reserve and other important public open spaces.

- Upgrade and maintain existing service infrastructure to ensure ongoing capacity is maintained.

### 3.3 PINETOWN SOUTH INTEGRATED DEVELOPMENT FRAMEWORK (1998)

The EThekwini Municipality’s former Inner West Council initiated a process to prepare a Integrated Development Framework (IDF) for the Pinetown South Area in 1998. This process was a team effort between the Community at large, trainee development workers, the Council and a professional team. This task was set against the backdrop of the Reconstruction and Development Programme (RDP), with Pinetown South being one of the 26 areas that was selected in terms of the RDP’s Urban Renewal Programme. Consequently the aim of the project was to address priority needs within the community and to put in place the pre-conditions to uplift the living conditions and quality of life for all that reside within the area and establish a development environment appropriately receptive to further investment. The purpose of the IDF was to provide a clear and comprehensive motivational plan to guide development and for the City to access funding from other sources in order to implement priority programmes and projects.

### 3.4 BACKGROUND

Pinetown South was largely established by the Roman Catholic Marianhill Mission Institute in the 1800’s. Large farms were bought by them; these have now been released for both residential and industrial development. The onset of the Group Areas Act saw the areas around the mission stations at Marianhill and St. Wendelins, being proclaimed as Coloured and Indian Group Areas respectively. Formal townships were publicly funded in the Mariann Ridge, Mariann Heights and Savanna Park I Suburbs. St Wendelins, in 1986 was formalized and gave permanence to the Black Community. Dassenhoek, Dassenhoek North, Regency Park and Welbedagt was regarded as an Indian Area. To the North East, the suburbs of Caversham Glen, Mariaanhill Park and Moseley
Park were a Private Housing Development for the White Community. As a result, fragmented decision making took place and the planning environment was not conducive to promoting an integrated and co-ordinated approach to the area as a whole. From the 1980’s the situation improved with concerted effort being placed on planning and consultants were commissioned to prepare structure plans for the area. Improvements to essential services in the 1990’s and promotion of an orderly government, saw the areas of Tshelinnyama, Savanna Park II and III Phase 1 and 2, Mpola, Klaarwater, Umbhedula, Southampton Park and Isiwakazi being incorporated into the Development Areas. In 1995, using aerial photography and household counts, the estimated population for Pinetown South was 115000.

As with many settlements of this nature, Pinetown South was never planned as a natural extension to the urban system, but rather as an dormitory suburb peripheral to core social and economic opportunities. As such, this predominantly residential settlement has a limited range of social facilities and economic opportunities with 25% of the Pinetown South population earning potential equating to less than R600 per month, and unemployment levels on the increase.

Subsequently, the Pinetown South IDF noted that socio-economic conditions in the area were similar in nature to most urban and peri-urban areas in the province characterised with:

- Limited household level production (agricultural or other);
- High levels of unemployment;
- Low household income levels;
- Limited access to social facilities.

### 3.5 AIM AND GOALS

The overall aim of the Pinetown South IDF (1998) was described as follows:

“To enhance the quality of life and foster human development for all those that interact in any way with Pinetown South”

According to the IDF had 4 goals:

- To promote the wellbeing of all that live and or work within Pinetown south
- To promote and enhance the role and function of Pinetown South both in the Inner West City Council area and in the Greater Durban Metropolitan Area.
- To promote efficiency and economy in all aspects of the development of Pinetown South.
- To empower all stakeholders to participate in the planning and development process for Pinetown South.

Accordingly, a number of key development issues were identified which informed the objectives of the IDF, including:

- Social Development- ensuring that the population is adequately fed, housed, skilled and healthy.
- Economic Development- ensuring that the high levels of unemployment and poverty is reduced.
- Infrastructural Development- achieving a balance between the level of service desired and the level of service which is affordable.
- Spatial Development/ Restructuring-achieving a more cohesive area, rather than following the past development of a fragmented and disjointed area.
- Environmental Development- management of the environmental systems to ensure sustainable environment.
- Institutional Developments- build institutional capacity to plan, manage and implement development.
Based on the above, the following key issues were identified for Pinetown South:

- Achieving consensus on a development vision for the area.
- Addressing land and ousing issues.
- Meeting basic needs through the provision of an acceptable level of service, of infrastructure including public transport, and community facilities including education and sport and recreation.
- Promoting economic development, putting in place the preconditions for building the local economy and creating jobs.
- Ensuring safety and security.
- Building local capacity and producing effective and accountable local government.
- Building positive functioning, sustainable and liveable communities and environments.

### 3.6 PINETOWN NODE CBD PRECINCT PLAN (2009/2010)

The EThekwini Municipality initiated a process to prepare a Precinct Plan for the Pinetown CBD Area in 2009. The Study Area for this project was bordered by the M13 to the south, Kirk/Lello Roads to the west, Sunnyside, Roselle, Lauth Road to the North and St Johns to the east. The area also included the rail marshalling yards, main taxi ranking facilities, the Pinecrest Shopping Centre, Knowles Spar and the Pinetown Civic Centre.

The primary focus of the Pinetown CBD Node Precinct Plan was to review past planning frameworks, revise these and identify a suite of catalytic intervention projects and/or development investments that the Municipality could contribute to, or be instrumental in unlocking latent economic development potential and to create a responsive, regenerative and distinctive urban structure, public space and built form.

The Pinetown CBD node, which is part of the larger Pinetown, New Germany and Westmead Industrial Node has emerged as the second most important commercial, industrial and civic urban centre in the Ethekwini Municipality (EM). The area supports and in turn is supported by increasing medium to high income populations living in mixed density residential settlements and it is the major transport hub of the western portion of the EM.

The objectives of the study were to:

- Re-establish the CBD as the civic, commercial and social service “heart” of the “inner west” region of the Municipality;
- Attract and accommodate a full range of commercial and services enterprises;
- Consolidate and protect existing high density residential areas and increase residential accommodation within the centrally located node and immediate surrounds through infill on vacant and/or underutilized land and densification of low density residential neighbourhoods;
- Alleviate undesirable land use conflicts and protect the integrity of residential areas and business areas through the establishment of appropriate interfaces and development controls; and
- Consolidate the Civic heart of the CBD.

### 3.7 INTEGRATED TRANSPORT PLAN UPDATE 2010-2015 (JUNE 2010)

The eThekwini Transport Authority Integrated Transport Plan (ITP) was first prepared in 2005 and updated in 2010 for the period between 2010 and 2015. This section provides a contextual extract of the Mission, Goals and Key Focus Areas highlighted within the ITP while the macro implications and specific transport interventions and projects within Pinetown South.
3.7.1 THE ETA TRANSPORT MISSION STATEMENT

The ETA has developed its own Mission Statement, by distilling policies, intent and meaning from the national and provincial visions for transport and eThekwini’s IDP vision. This has been done in a manner that ensures it is aligned with these visions, that there is no conflict with them and that integration is achieved from National down to Municipal level.

Prior to establishment of the eThekwini Transport Authority, Council was only responsible for fixed transport infrastructure. With the establishment of the ETA this responsibility now extends to the provision, management and control of all of the following:

- Transport infrastructure
- Public transport services
- Modes and fleet

The following mission statement recognises and responds to this wider role and responsibility for transport.

“To provide and manage a world-class transport system with a public transport focus, providing high levels of mobility and accessibility for the movement of people and goods in a safe, sustainable and affordable manner”.

3.7.2 THE ETA’S TRANSPORT GOALS

The extension of ETA’s vision into goals for transport has identified five basic goals which directly support the main thrust of the IDP. They are the following:

**Goal 1: Effective Transport**

- Needs driven;
- Promotes PT over private transport;
- Increases mobility and accessibility;
- Targets effective use of transport subsidies;
- Recognises needs of the poor and supports poverty alleviation.

**Goal 2: Efficient Transport**

- Improves transport system cost efficiency;
- Integrates transport systems;
- Regulates public transport and optimises role/positioning of modes;
- Integrates land use and transport activities.

**Goal 3: Sustainable Transport**

- Financially;
- Environmentally;
- Technologically;
- Adequate skills & resources;
- Adequate maintenance.

**Goal 4: Safe & Secure Transport**

- Provides safe infrastructure and operating environment for all modes of transport (including non-motorised transport) and all passengers;
- Ensures adequate regulation and levels of enforcement on services moving goods and people;
- Promotes public transport passenger security systems and services.

**Goal 5: Broad Based Black Empowerment**

- Provides for participation in contracts;
- Encourages and creates investment opportunities;
- Promotes and provides training and support.
### 3.7.3 Key Focus Areas

The five key focus areas described below have been identified as the cornerstones of the ITP.

**1. Public Transport**

Public transport is one of the fundamental influences on economic and social wellbeing in the municipal area. The objective of the ICDG is to support the development of more inclusive, liveable, productive and sustainable urban built environments in metropolitan municipalities. Poorer communities and a large segment of the workforce are entirely dependent on public transport. Against this background, rapidly escalating costs accompanied by deteriorating service levels and standards of safety and security have characterised the public transport sector for many years. However, the focus of national policy, which is the framework for local government policy, is on turning this whole situation around in the context of prioritising public transport over private transport. The Integrated Rapid Public Transport Network (IRPTN), which is a component of the ITP, highlights the multi-modal, integrated approach being adopted in the eThekwini municipal area to address the many issues in this sector of transport.

**2. Freight**

A key component of the ITP is a Freight Strategy, which is closely related to the Roads Strategy for the municipal area. Mobility to move safely through the City and accessibility to the economic activity centres is essential to the economic vitality of the City. Attractiveness for business investors is also heavily influenced by the level of mobility and accessibility to key commercial and industrial development areas in the City.

**3. Safety**

The ETA’s Road Safety Plan, which is another key component of the ITP, is a comprehensive and fully integrated plan. It addresses all aspects of Traffic Engineering, Enforcement and Education on an integrated basis in an effort to reduce the social and economic costs of accidents. Key aspects of the Plan will be incorporated into the ITP.

**4. Roads**

The provision of an adequate road network comprising major to minor roads is a key aspect of the ITP. It is a critical component of each of the above strategies, needed to ensure successful economic and social development in the municipal area. In the eThekwini area 80% of public transport uses the road network. At the same time the majority of freight movement is road-based in the municipal area. Consequently, for such services to operate efficiently and effectively, there must be an adequate well maintained road network forming part of the overall transport system.

**5. Traffic Management and Control**

Traffic management and control systems and strategies maximise the effective use of existing road infrastructure. This is one of the ITP imperatives and an essential aspect of any comprehensive ITP. In addition to minimising congestion and delay to road users in all categories, these strategies can support TDM and public transport strategies through prioritisation of public transport in areas where high impact can be achieved. Selected control strategies can also be implemented in incident management which is complimentary to the road safety strategy.

### 3.7.4 Macro Implications for Transportation in Pinetown South

The eThekwini Transport Authority Integrated Transport Plan (ITP) identifies the Pinetown/New Germany approximately 20 kilometres west of the Durban CBD as a major employment node. This hub of industrial/commercial activity currently accounts for some 65 000 jobs, 8% of the jobs in the municipal area. In recent years the trend has been characterised by a move of commercial development from the Durban central
area to the Berea, west of the CBD, to the Umhlanga area to the north and... Further, there has been a deterioration of, and move away from, the South Durban Basin to the Pinetown/Westmead industrial area and the Effingham, Avoca industrial areas north of the Umgeni River. The most important corridor is the North-South Public Transport Corridor - N2 and R102 route- as aims to interlink various modes of transport along this corridor in order to improve transport and accessibility within the entire municipality. The construction of MR577 (a project identified by the Ink Planners), which is presently under way, will provide the missing direct connection between KwaMashu, Inanda and other residential areas to the north and the major employment areas of Pinetown and New Germany in the west. Similarly, residential areas in the Inner West, Outer West and South will have easier access to employment areas in the north. The ITP has no direct interventions for the Pinetown South area, however there are efforts in place to upgrade the existing road network. Road investigations have been put in place to find solutions to bottlenecking at metropolitan intersections like Richmond Road (M1) / Abbot Francis Road / Esser Place and Richmond Road (M11) / Stockville Road Intersections.
4 SERVICE INFRASTRUCTURE

4.1 TRANSPORT

4.1.1 TRAFFIC AND TRANSPORTATION ASSESSMENT

4.1.1.1 Context
Pinetown South is strategically located in the Inner West Region, which is situated south of the N3 Toll Road. The study area is strategically located to the west of Pinetown and Durban CBD. The study area includes the following key industrial areas:
- Westmead Industrial Park;
- Marian Industrial Park;
- Wiltshire Road Industrial area.

The Pinetown south area comprises of large thresholds of low-income residents especially in the western and southern areas within the study boundary (St. Wendolins, Demat, Nagina, KwaNdengezi, Mariannhill). A high proportion are reliant on the study area for employment opportunities, basic services and public transportation services and facilities.

The study area is located approximately 30km west of the Durban CBD and the important SIP2 corridor. The CBD and the SIP2 corridor can be accessed via the N3, M1, M7 and N2.

As per the Pinetown South Terms of Reference (TOR) the following areas of interest were identified as the focus area for this study:
- Milky Way Corridor;
- Old Richmond Road Corridor

Map 5: Area of Focus
4.1.2 REVIEW OF RELATED STUDIES

4.1.2.1 Transportation Studies

ETHEKWINI FREIGHT STRATEGY

The document reviewed as part of this study is the Integrated Freight and Logistics Framework and Action Plan: Integrated Freight Strategy, Presentation to Private Sector, May 2014.

Regarding Hard Interventions (which is related to Infrastructure) a few trucking facilities are being proposed for the study area. These include:

- N3 upgrade from N2 interchange to Richmond Road (M1) 2015 – 2020 [1]
- N3 upgrade from Richmond Road (M1) to Cato Ridge 2020 – 2025 [2]
- M7 (N2 to Bellville Road) 2015 – 2020 [3]
- M7 (Bellville Road to N3) 2020 – 2025 [4]
- Weigh in Motion (WIM) facility on M7 and N3 2015 – 2020 [5]
- Intermodal Facility in Cato Ridge 2015 – 2020

Regarding the soft intervention (which is related to people, systems and institutions) the following are some of the strategies that affect the study area:

- Dedicated Freight Metro Police - Dedicated metro police who will be responsible for the enforcement of all freight related by-laws, amongst other things.
- Truck Route Hierarchy - The truck route hierarchy system will seek to identify those roads along which trucks can travel along and those routes on which they are not allowed on (within residential area etc.)
- Freight Land Use Master Plan - This master plan will seek to identify those areas where freight related development can take place and those areas where it should not be developed.

ETHEKWINI IRPTN

Ethekwini Municipality’s IRPTN is currently being rolled out in four phases. The system is made up of nine (9) trunk corridors traversing the metro. These trunk corridors will be fed by feeder services. The C7 corridor, which commences in Hillcrest and ends in Chatsworth via Pinetown CBD, will pass through the Pinetown South Study area along the M1. Feeder Services from Dassenhoek, Mariannhill, Savannah Park etc. will then ferry passengers to the C7 trunk corridor.

Figure 3: IRPTN

(Source: ETHekwini IRPTN)
The KZN Rail Master Plan proposes a number of rail upgrades (infrastructure, operational etc.) along the network. The following key upgrades are expected to impact the study area:

- **Cato Ridge Line** – The creation of an inner service and an outer service. Run a fast service from Rossburgh to KwaNdengezi Station and then stop and all station to Cato Ridge and then run a service calling on all stations between Rossburgh to KwaNdengezi Station and then a fast service out to Cato Ridge. This will help improve journey times.
- **Chatsworth Line** – upgrading this line to operate Light Rail services
- **Station Upgrades at Dassenhoek, Situndu Hills, Thornwood and Klaarwater**
- **Rolling Stock improvements**
- **Possible new station between Mariannhill and Klaarwater**

An inspection of the eThekwini ITP 2010 – 2015 indicates the following Transport Network Improvements for the Pinetown South area:

- Bellville Road/M7 interchange upgrade
- MR 579 (Umlazi to Pinetown) extension of the MR 577
- N3 (Candella Road to Pinetown)
- Upgrade of Hans Dettman Highway (M34) from M1 to M5
- Richmond Road (M1) and Stockville Road intersection (Bottle neck elimination)
- Richmond Road (M1) and Abbot Francis Road (Bottle neck elimination)
- Richmond Road (M1) and Old Richmond Road (Bottle neck elimination)
- Hans Dettman Highway (M34) and Wiltshire Road (Bottle neck elimination)

The Pinetown South Area is identified as an area for densification. It is classified as a Local Area Node. Indicative density of 40 – 80 units/ha abutting public transport facilities and corridor and mixed-use nodes.

The St Wendolins area, located on the southern side of the study area has been identified for as a future densification area. An opportunity area is also identified in the Marianhill area. The future MR579 will link Umlazi with Pinetown and the MR577 to form the Outer Ring Road.

M1 is seen as a future densification corridor. The St Wendolins area, located on the southern side of the study area has been identified for as a future densification area.
4.1.4 TRAVEL BEHAVIOURS/ PATTERNS

4.1.4.1 Approach
Using the 2007/2008 ETekwini Household Travel Survey (EHTS), the current employment status, car ownership levels, modal split and journey time for the study area was assessed. The EHTS zones were assessed against the study boundary and 9 zones were identified. It should be noted that R 20 Pinetown was included however a major portion of this zone lies outside the study boundary.

<table>
<thead>
<tr>
<th>Zone No.</th>
<th>Area Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>R 14</td>
<td>Queensburgh</td>
</tr>
<tr>
<td>R 15</td>
<td>Shallcross Environs</td>
</tr>
<tr>
<td>R 20</td>
<td>Pinetown</td>
</tr>
<tr>
<td>R 21</td>
<td>Caversham Glen</td>
</tr>
<tr>
<td>R 43</td>
<td>Demat</td>
</tr>
<tr>
<td>R 44</td>
<td>St. Wendolins Environs</td>
</tr>
<tr>
<td>R 45</td>
<td>Nagina</td>
</tr>
<tr>
<td>R 46</td>
<td>KwaNdengezi</td>
</tr>
<tr>
<td>R 47</td>
<td>Mariannhill</td>
</tr>
</tbody>
</table>
### 4.1.4.2 Employment Status

The employment status for the study area and for the overall municipality is as follows:

<table>
<thead>
<tr>
<th>Survey Area</th>
<th>Employed Formal</th>
<th>Employed Informal</th>
<th>Self Employed not from home</th>
<th>Work from home</th>
<th>Unemployed</th>
<th>Scholar/Student</th>
<th>Not economically active</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Queensburgh</td>
<td>41%</td>
<td>1%</td>
<td>4%</td>
<td>2%</td>
<td>7%</td>
<td>25%</td>
<td>20%</td>
<td>100%</td>
</tr>
<tr>
<td>Shallcross Environs</td>
<td>27%</td>
<td>3%</td>
<td>2%</td>
<td>1%</td>
<td>20%</td>
<td>22%</td>
<td>24%</td>
<td>100%</td>
</tr>
<tr>
<td>Pinetown</td>
<td>38%</td>
<td>1%</td>
<td>6%</td>
<td>3%</td>
<td>6%</td>
<td>27%</td>
<td>20%</td>
<td>100%</td>
</tr>
<tr>
<td>Caversham Glen</td>
<td>31%</td>
<td>5%</td>
<td>2%</td>
<td>2%</td>
<td>11%</td>
<td>29%</td>
<td>22%</td>
<td>100%</td>
</tr>
<tr>
<td>St. Wendolins Environ</td>
<td>18%</td>
<td>4%</td>
<td>0%</td>
<td>1%</td>
<td>24%</td>
<td>31%</td>
<td>21%</td>
<td>100%</td>
</tr>
<tr>
<td>Demat</td>
<td>20%</td>
<td>3%</td>
<td>1%</td>
<td>0%</td>
<td>22%</td>
<td>32%</td>
<td>20%</td>
<td>100%</td>
</tr>
<tr>
<td>Nagina</td>
<td>20%</td>
<td>2%</td>
<td>2%</td>
<td>1%</td>
<td>21%</td>
<td>34%</td>
<td>20%</td>
<td>100%</td>
</tr>
<tr>
<td>KwaNdengezi</td>
<td>19%</td>
<td>3%</td>
<td>1%</td>
<td>1%</td>
<td>25%</td>
<td>34%</td>
<td>18%</td>
<td>100%</td>
</tr>
<tr>
<td>Mariannhill</td>
<td>19%</td>
<td>9%</td>
<td>1%</td>
<td>0%</td>
<td>20%</td>
<td>32%</td>
<td>20%</td>
<td>100%</td>
</tr>
<tr>
<td>eThekwini Municipality</td>
<td>25%</td>
<td>2%</td>
<td>2%</td>
<td>1%</td>
<td>20%</td>
<td>30%</td>
<td>19%</td>
<td>100%</td>
</tr>
</tbody>
</table>

An inspection of the data reveals the following:

- The formal employment in Queensburgh, Pinetown, Caversham Glen are significantly higher than the municipal average, whilst the unemployment percentages in the remaining zones are far lower than the municipal average.
- The St Wendolins Enviro, Demat, Nagina, KwaNdengezi and Marianhill area has a high amount of unemployment, scholar population and not economically active population.

Map 7: Macro Zones
4.1.4.3 Car Ownership Level

The car ownership level within the study area and overall municipality level was calculated using data sourced from the EHTS, and can be seen below:

<table>
<thead>
<tr>
<th>Survey Area</th>
<th>Total Vehicles</th>
<th>Population</th>
<th>Veh/1000s population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Queensburgh</td>
<td>16519</td>
<td>32847</td>
<td>503</td>
</tr>
<tr>
<td>Shallcross Environ</td>
<td>10127</td>
<td>62648</td>
<td>162</td>
</tr>
<tr>
<td>Pinetown</td>
<td>17932</td>
<td>29634</td>
<td>605</td>
</tr>
<tr>
<td>Caversham Glen</td>
<td>4838</td>
<td>16051</td>
<td>301</td>
</tr>
<tr>
<td>St. Wendolins Environ</td>
<td>1189</td>
<td>22882</td>
<td>52</td>
</tr>
<tr>
<td>Demat</td>
<td>1559</td>
<td>22056</td>
<td>71</td>
</tr>
<tr>
<td>Nagina</td>
<td>2363</td>
<td>35773</td>
<td>66</td>
</tr>
<tr>
<td>KwaNdengezi</td>
<td>3799</td>
<td>66135</td>
<td>57</td>
</tr>
<tr>
<td>Mariannhill</td>
<td>1140</td>
<td>23071</td>
<td>49</td>
</tr>
<tr>
<td>eThekwini Municipality</td>
<td>479366</td>
<td>3241138</td>
<td>148</td>
</tr>
</tbody>
</table>

The car ownership level, presented as the number of vehicles/1000 population, provides an indication of the economic situation of the area. At a municipal level the car ownership is 148veh/1000 population. The National rate measured in 2010 is 112veh/100 population [Source: passenger vehicles per 1000 people http://data.worldbank.org/indicator/IS.VEH.PCAR.P3 ] .The car ownership rate in Europe is more than 400veh/1000 population [Source: http://www.fp7-compass-keytrends.eu/index.php/social-domain-test/13-the-social-structure-factor/11-car-ownership ].

The car ownership level within Queensburgh and Pinetown are approximately 4 times greater than the municipal average, whilst Caversham Glen is double the municipal average. The areas of St. Wendolins Environ, Demat, Nagina, KwaNdengezi and Mariannhill have a significantly lower car ownership as compared to the municipal average.

4.1.4.4 Modal Split

The modal split provides an indication of the percentage of the population using public transport, private vehicles or walking for daily trips. The morning and afternoon peak hour modal split trend for the study area is as follows:

<table>
<thead>
<tr>
<th>Survey Area</th>
<th>Transport Mode (AM)</th>
<th>Transport Mode (PM)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Private</td>
<td>Public</td>
</tr>
<tr>
<td>Queensburgh</td>
<td>84%</td>
<td>10%</td>
</tr>
<tr>
<td>Shallcross Environ</td>
<td>37%</td>
<td>33%</td>
</tr>
<tr>
<td>Pinetown</td>
<td>86%</td>
<td>8%</td>
</tr>
<tr>
<td>Caversham Glen</td>
<td>70%</td>
<td>21%</td>
</tr>
<tr>
<td>St. Wendolins Environ</td>
<td>18%</td>
<td>48%</td>
</tr>
<tr>
<td>Demat</td>
<td>23%</td>
<td>50%</td>
</tr>
<tr>
<td>Nagina</td>
<td>21%</td>
<td>44%</td>
</tr>
<tr>
<td>KwaNdengezi</td>
<td>11%</td>
<td>52%</td>
</tr>
<tr>
<td>Mariannhill</td>
<td>22%</td>
<td>52%</td>
</tr>
<tr>
<td>eThekwini Municipality</td>
<td>32%</td>
<td>40%</td>
</tr>
</tbody>
</table>
At a municipal level the AM peak hour modal split is private (32%), public transport (40%), and walk (28%) and the PM peak hour is private (41%), public transport (51%), and walk (7%). The difference in the AM and PM peak hour can be attributed to the high amount of walk trips made by scholars/students during the morning peak hour, informal employment and the fact that the afternoon commuter peak is spread over a longer period.

**AM Peak Hour**

The results show that the percentage of private vehicle trips made from the areas of Queensburgh, Pinetown and Caversham Glen is significantly greater than the municipal average. There is a significantly lower percentage of public transport and walk trips from the Queensburgh, Pinetown and Caversham Glen areas as compared to the municipal average.

It can be seen that the areas of St. Wendolins, Demat, Nagina, KwaNdengezi and Mariannhill have a lower percentage of private vehicle trips and a significantly greater percentage of Public and walk trips in comparison to the Queensburgh, Pinetown and Caversham Glen areas.

**PM Peak Hour**

During the afternoon peak hour it can be seen that a similar trend to the morning peak hour exists for modal split. Queensburgh, Pinetown and Caversham Glen have a significantly higher private vehicle usage and a significantly lower amount of trips made by public transport and walking, as compared to the St. Wendolins, Demat, Nagina, KwaNdengezi and Mariannhill areas.

Map 8: AM Modal Split
The journey time data, as sourced from the 2007/2008 eThekwini Household Travel Survey (EHTS) for trips made throughout the day is as follows:

<table>
<thead>
<tr>
<th>Survey Area</th>
<th>1-15</th>
<th>16-30</th>
<th>31-45</th>
<th>46-60</th>
<th>&gt; 60</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Queensburgh</td>
<td>24%</td>
<td>39%</td>
<td>16%</td>
<td>14%</td>
<td>7%</td>
<td>100%</td>
</tr>
<tr>
<td>Shallcross Environ</td>
<td>16%</td>
<td>36%</td>
<td>16%</td>
<td>23%</td>
<td>10%</td>
<td>100%</td>
</tr>
<tr>
<td>Pinetown</td>
<td>28%</td>
<td>40%</td>
<td>14%</td>
<td>13%</td>
<td>6%</td>
<td>100%</td>
</tr>
<tr>
<td>Caversham Glen</td>
<td>19%</td>
<td>28%</td>
<td>17%</td>
<td>18%</td>
<td>19%</td>
<td>100%</td>
</tr>
<tr>
<td>St. Wendolins Environ</td>
<td>7%</td>
<td>29%</td>
<td>20%</td>
<td>25%</td>
<td>18%</td>
<td>100%</td>
</tr>
<tr>
<td>Demat</td>
<td>8%</td>
<td>26%</td>
<td>18%</td>
<td>23%</td>
<td>25%</td>
<td>100%</td>
</tr>
<tr>
<td>Nagina</td>
<td>7%</td>
<td>25%</td>
<td>24%</td>
<td>25%</td>
<td>19%</td>
<td>100%</td>
</tr>
<tr>
<td>KwaNdengezi</td>
<td>10%</td>
<td>31%</td>
<td>16%</td>
<td>20%</td>
<td>23%</td>
<td>100%</td>
</tr>
<tr>
<td>Mariannhill</td>
<td>3%</td>
<td>19%</td>
<td>16%</td>
<td>38%</td>
<td>24%</td>
<td>100%</td>
</tr>
<tr>
<td>eThekwini Municipality</td>
<td>14%</td>
<td>34%</td>
<td>17%</td>
<td>20%</td>
<td>15%</td>
<td>100%</td>
</tr>
</tbody>
</table>

Queensburgh, Pinetown and Caversham Glen have a greater percentage of journeys that take less than 15 minutes as compared to the outer lying areas of St. Wendolins, Demat, Nagina, KwaNdengezi and Mariannhill areas.

A comparison of the survey areas with journey times of less than 30 minutes reveals that Queensburg and Pinetown have a greater percentage of shorter trips than St. Wendolins, Demat, Nagina, KwaNdengezi and Mariannhill areas.
The areas of St. Wendolins, Demat, Nagina, KwaNdengezi and Mariannhill have a far greater percentage of journeys taking more than 60 minutes. These results are indicative of residents in the western and southern parts having to travel by long distances for employment opportunities.

The 2015 matrices for eThekwini as provided by the ETA were interrogated and desire lines for the study area were prepared. The outbound and inbound trips were extracted from the EHTS zone system (60x60) into the table below. The analysis was done for the AM peak hour only as the private vehicle matrix was developed for this period only.

A summary of the inbound and outbound AM peak hour person trips is presented in the following table:

<table>
<thead>
<tr>
<th>INBOUND</th>
<th>OUTBOUND</th>
</tr>
</thead>
<tbody>
<tr>
<td>PT</td>
<td>PV</td>
</tr>
<tr>
<td>22924</td>
<td>26006</td>
</tr>
<tr>
<td>TOTAL</td>
<td>48930</td>
</tr>
</tbody>
</table>

The summary indicates that the inbound trips are equal to the outbound trips. The inbound trips are split 47:53 in favour of private vehicles, whilst the outbound trips are split 43:57 also in favour of private vehicles. Due to a large portion of the R20 Pinetown zone lying outside the study boundary, the table that follows indicates the inbound and outbound AM peak hour person trips excluding the R20 zone:

<table>
<thead>
<tr>
<th>INBOUND</th>
<th>OUTBOUND</th>
</tr>
</thead>
<tbody>
<tr>
<td>PT</td>
<td>PV</td>
</tr>
<tr>
<td>9713</td>
<td>10048</td>
</tr>
<tr>
<td>TOTAL</td>
<td>19760</td>
</tr>
</tbody>
</table>

With the exclusion of the Pinetown zone, the inbound and outbound split is 36:64. The inbound and outbound trips are split in favour of private vehicles, 49:51 and 47:53, respectively. This shows that the study area as a whole is a trip producing area, however there is a significant amount of trip attraction occurring in the northern and north-western areas.

A high level assessment was undertaken to gauge the directional split (north, south, east, west, internal) of inbound and outbound trips and is presented below. *(Note: west refers to areas that would approach the study area from the west, this includes areas such as Greater Hillcrest, Cato Ridge, New Germany etc.)*

General Directional Split of Inbound AM Peak Person Trips [Including Pinetown (R20)]

<table>
<thead>
<tr>
<th>Direction of Approach</th>
<th>PT</th>
<th>PV</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>22%</td>
<td>6%</td>
<td>13%</td>
</tr>
<tr>
<td>S</td>
<td>9%</td>
<td>9%</td>
<td>9%</td>
</tr>
<tr>
<td>E</td>
<td>14%</td>
<td>23%</td>
<td>19%</td>
</tr>
<tr>
<td>W</td>
<td>11%</td>
<td>16%</td>
<td>13%</td>
</tr>
<tr>
<td>Internal</td>
<td>44%</td>
<td>46%</td>
<td>45%</td>
</tr>
</tbody>
</table>

The inbound distribution shows that overall there are more trips that originate from within the study area during the morning peak hour. The highest external inbound trips approaches the study area from the east using the M13, N3 and M7 and coming from Durban CBD, Westville and the N2. The east and west directions are the directions with the largest amount of capacity There is a very low amount of inbound trips approaching from the south.
General Directional Split of Outbound AM Peak Person Trips [Including Pinetown (R20)]

<table>
<thead>
<tr>
<th>Direction of Departure</th>
<th>PT</th>
<th>PV</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>2%</td>
<td>1%</td>
<td>1%</td>
</tr>
<tr>
<td>S</td>
<td>8%</td>
<td>6%</td>
<td>7%</td>
</tr>
<tr>
<td>E</td>
<td>31%</td>
<td>36%</td>
<td>34%</td>
</tr>
<tr>
<td>W</td>
<td>11%</td>
<td>13%</td>
<td>12%</td>
</tr>
<tr>
<td>Internal</td>
<td>48%</td>
<td>44%</td>
<td>46%</td>
</tr>
</tbody>
</table>

The outbound distribution shows that there are more trips destined for internal zones within the study boundary. The outbound person trips heading east during the morning peak hour is the highest in comparison to trips heading north, south and west.

Therefore, the majority of external trips being made use the M13, N3 and M7 in the easterly direction towards the Durban CBD, Westville and the N2.

Map 10: Inbound Peak Trips

![Map 10: Inbound Peak Trips](image-url)
Map 11: Outbound Peak Trips

Map 12: Trip Ends
### AM peak hour person trips – Inbound to study area

<table>
<thead>
<tr>
<th>ZONE</th>
<th>ZONE NAME</th>
<th>PT</th>
<th>PV</th>
<th>ZONE</th>
<th>ZONE NAME</th>
<th>PT</th>
<th>PV</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>CBD West</td>
<td>249</td>
<td>73</td>
<td>31</td>
<td>Umhlanga</td>
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<td>21</td>
</tr>
<tr>
<td>2</td>
<td>CBD East</td>
<td>21</td>
<td>116</td>
<td>32</td>
<td>Ottawa Environs</td>
<td>15</td>
<td>106</td>
</tr>
<tr>
<td>3</td>
<td>Berea North</td>
<td>58</td>
<td>222</td>
<td>33</td>
<td>Clermont</td>
<td>2080</td>
<td>765</td>
</tr>
<tr>
<td>4</td>
<td>Berea South</td>
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<td>351</td>
<td>34</td>
<td>KwaDebeka</td>
<td>1839</td>
<td>381</td>
</tr>
<tr>
<td>5</td>
<td>Durban North</td>
<td>4</td>
<td>212</td>
<td>35</td>
<td>New Germany Environs</td>
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<td>1575</td>
</tr>
<tr>
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<td>Duikerfontein</td>
<td>82</td>
<td>303</td>
<td>36</td>
<td>Lotus Park</td>
<td>26</td>
<td>30</td>
</tr>
<tr>
<td>7</td>
<td>Umgeni South</td>
<td>7</td>
<td>343</td>
<td>37</td>
<td>Amanzimtoti</td>
<td>25</td>
<td>201</td>
</tr>
<tr>
<td>8</td>
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</tr>
<tr>
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<td>Bluff</td>
<td>3</td>
<td>133</td>
<td>39</td>
<td>Folweni Complex</td>
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<td>0</td>
</tr>
<tr>
<td>10</td>
<td>Merewent Environs</td>
<td>57</td>
<td>160</td>
<td>40</td>
<td>Umlazi South</td>
<td>391</td>
<td>157</td>
</tr>
<tr>
<td>11</td>
<td>Greater Lamontville</td>
<td>298</td>
<td>490</td>
<td>41</td>
<td>Umlazi West</td>
<td>492</td>
<td>107</td>
</tr>
<tr>
<td>12</td>
<td>Montlands</td>
<td>4</td>
<td>196</td>
<td>42</td>
<td>Umlazi North</td>
<td>337</td>
<td>22</td>
</tr>
<tr>
<td>13</td>
<td>Old Line Suburbs</td>
<td>305</td>
<td>549</td>
<td>43</td>
<td>Demat</td>
<td>498</td>
<td>449</td>
</tr>
<tr>
<td>14</td>
<td>Queensburgh</td>
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<td>44</td>
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<td>946</td>
</tr>
<tr>
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<td>1845</td>
<td>45</td>
<td>Nagina</td>
<td>1989</td>
<td>1269</td>
</tr>
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<td>16</td>
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<td>719</td>
<td>46</td>
<td>KwaNdengezi</td>
<td>2840</td>
<td>869</td>
</tr>
<tr>
<td>17</td>
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<td>1002</td>
<td>47</td>
<td>Mariannhill</td>
<td>1351</td>
<td>955</td>
</tr>
<tr>
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<td>Isipingo Environs</td>
<td>43</td>
<td>94</td>
<td>48</td>
<td>Verulam Environs</td>
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<td>122</td>
</tr>
<tr>
<td>19</td>
<td>Westville</td>
<td>197</td>
<td>992</td>
<td>49</td>
<td>Greater Tongaat</td>
<td>49</td>
<td>160</td>
</tr>
<tr>
<td>20</td>
<td>Pinetown</td>
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<td>1984</td>
<td>50</td>
<td>Greater Umkomaas</td>
<td>91</td>
<td>0</td>
</tr>
<tr>
<td>21</td>
<td>Caversham Glen</td>
<td>273</td>
<td>1169</td>
<td>51</td>
<td>Greater Hillcrest</td>
<td>456</td>
<td>2075</td>
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<td>22</td>
<td>Newlands</td>
<td>207</td>
<td>276</td>
<td>52</td>
<td>Summerfeld Environs</td>
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<td>213</td>
</tr>
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<td>23</td>
<td>Avoca Hills Environs</td>
<td>38</td>
<td>30</td>
<td>53</td>
<td>Shongweni Environs</td>
<td>263</td>
<td>0</td>
</tr>
<tr>
<td>24</td>
<td>KwaMashu South</td>
<td>451</td>
<td>28</td>
<td>54</td>
<td>Mpumalanga Environs</td>
<td>275</td>
<td>27</td>
</tr>
<tr>
<td>25</td>
<td>KwaMashu North</td>
<td>310</td>
<td>38</td>
<td>55</td>
<td>Cato Ridge Environs</td>
<td>250</td>
<td>16</td>
</tr>
<tr>
<td>26</td>
<td>Ntuzuma West</td>
<td>217</td>
<td>30</td>
<td>56</td>
<td>Greater Inanda Farmlands</td>
<td>77</td>
<td>38</td>
</tr>
<tr>
<td>27</td>
<td>Ntuzuma East</td>
<td>175</td>
<td>66</td>
<td>57</td>
<td>Greater Western Environs</td>
<td>1111</td>
<td>161</td>
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### PM peak hour person trips – Inbound to study area

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<th>ZONE NAME</th>
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#### 4.1.4.5 Discussion on Travel Behaviour

The western and southern parts of the study area is characterized by a relatively high unemployment rate and high economically inactive and Student/Scholar population. A larger portion of the study area can be classified as being a low income area based on the low car ownership level and high public transport modal split.

There is a large amount of commuters living and working in the study area. A large proportion of trips coming into or leaving the study area are approaching/departing to the east, towards Durban CBD and the N2 which gives onwards access to Umhlanga and South Durban Basin areas.

#### 4.2 STORMWATER

##### 4.2.1 Introduction

Stormwater runoff refers to any form of precipitation that runs off streets, lawns, and other sites. When stormwater is absorbed into the ground, it is filtered and ultimately replenishes aquifers or flows into streams and rivers. In developed areas, however, impervious surfaces such as pavement and roofs prevent precipitation from naturally soaking into the ground. Instead, the water runs rapidly into storm drains, sewer systems, and drainage ditches and can cause:

- Downstream flooding
- Stream bank erosion
- Increased turbidity (muddiness created by stirred up sediment) from erosion
- Habitat destruction
- Changes in the stream flow hydrograph (a graph that displays the flow rate of a stream over a period of time)

Stormwater that runs off hardened surfaces tend to collect and disperse pollutants into waterways which can cause the destruction of acquation ecosystems. Stormwater management is therefore essential to protecting habitats, preventing erosion and preventing adverse effects on the environment. Municipal stormwater infrastructure systems is generally designed on the basis that not more than 40% of the area of residential properties would be hardened. One form of stormwater management is the use of soakpits. If a developer exceeds the 40% hardened coverage then the developer is require to provide, at their own expense, a
stormwater management system. In the event of a soakpit being used to control stormwater, then the soakpit must be maintained. It is necessary to note that a soakpit has between a 5-15 year lifespan, therefore the soakpit needs to be continuously managed and upgraded when necessary. In areas that have impervious surfaces, it is of necessity that stormwater infrastructure (stormwater pipes, manholes, drains, attenuation tanks and kerb inlets etc.) be put in place to allow runoff to follow into the correct catchment area. The construction of roads and the stormwater drainage are integral to ensure proper stormwater management.

### 4.2.2 Overview

Discussions with Mr M Tootla from the eThekwini Municipality (Coastal Storm and Catchment Management section in Pinetown, suggests that there are certain areas like portions of Klaarwater (Uganda), Dassenhoek and Savanna Park which have scant records in terms of stormwater management and work is needed in these areas. Areas like Thornwood and Kwantengezi have limitations. Problems have been experienced with some owners building over their cadastral boundary, resulting in erosion of banks, which ultimately increases stormwater runoff. Since no management principles have been applied to the illegal expansion, it results in further erosion of banks and the movement of pollutants into catchments. Densification and hardening of surfaces also impact on catchment areas, since the stormwater management is insufficient to control the stormwater flow.

Map 13: Stormwater Status

Map 5 illustrates that there is stormwater infrastructure (pipes) present throughout the study area. There seems to be large gaps in terms of stormwater infrastructure in Wards 13, 14, 15, 71 and 72. This may however be due to incomplete data in terms of eThekwini Municipality’s GIS Database, or there are actual concerns. As Mr M Tootla explained, there are limitations in terms of stormwater infrastructure, and there are areas that need considerable attention. There are however proposed pipelines for Wards 12, 14, 15, 16, 17, 63 and 71.
4.3 WATER INFRASTRUCTURE

4.3.1 INTRODUCTION

At this stage the water demand cannot be determined but for discussion purposes a consumption figure of 10kℓ/Ha/d is used, and depending on the actual industries established this figure may drop slightly or increase dramatically up to 40kℓ/Ha/d if a wet industry (e.g., a bottling plant) were to be established. Water is available in the area is supplied by the Pinetown System as well as from Durban Heights. The system is meant to receive a boost when the Western Aqueduct comes on stream—which according to the eThekwini Municipality is meant to be completed by the year 2016.

4.3.2 WATER SUPPLY SYSTEM

The supply areas serviced by the Western and Northern aqueducts have experienced recent high growth in water demand and significant future growth in development has been identified in the eThekwini Planning studies. The Inner West, Pinetown South in particular receives its water supply from Durban Heights Waterworks. This plant has reached its maximum treatment capacity. The Inner West, particularly Pinetown has been identified as one of the growth areas and therefore pressure exists on the current infrastructure. As a part of the solution to provide for the increase demand in these areas, the EThekwini Water Services Development Plan (EWSDP) provides a way forward. The EWSDP recommends that the Pinetown South Area be connected to the proposed Western Aqueduct which will at the same time provide a constant flow of water as well as negate operational costs. This is referred to as ‘shed demand’ because the demand from these areas would be shed from Durban Heights Waterworks to the Western Aqueduct Pipeline.

Figure 4: Proposed Western Aqueduct Pipeline

Source: EThekwini Water Services Development Plan (2012)

The main functions of the Western Aqueduct Pipeline are therefore to service both the natural growth in water demand in the Western supply area and the shed demand to the Ntuzuma, Mount Moriah, KwaDabeka and Pinetown South areas. The Western aqueduct pipeline, which commences at the eThekwini – Umgungundlovu boundary at Umlaas Road, will be supplied by water from the Midmar Dam treatment works.
owned and operated by Umgeni Water. Construction of phase 1 from Umlaas Road to Inchanga (Drummond) is complete. Phase 2, which will complete the project, was meant to have commenced and the estimated completion date is in 2016.

### 4.3.3 Water Storage Systems

Water storage is through supply reservoirs. Once the Western Aqueduct comes on stream, there will be additional changes such as: this new supply will feed the high level reservoirs which will consequently feed into the low level reservoirs- with the requisite pipe work changes- as opposed to the current arrangement whereby in many cases water is pumped to the higher level reservoirs with bottom entry but feed the reticulation en route with the balance of the water entering the reservoirs. These investigations are currently being investigated by a consortium of engineering consultants led by Knight Piesold.

<table>
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</tr>
<tr>
<td>Harinager</td>
<td>1.5</td>
<td>233.9m</td>
</tr>
<tr>
<td>Shallcross</td>
<td>9.0</td>
<td>320.0m</td>
</tr>
<tr>
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<td>Summerhills</td>
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</tr>
<tr>
<td>Kwandengezi</td>
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Currently, after discussions with eThekwini Municipality officials, it was indicated that there is a shortage of water storage in the Klaarwater Reservoir site, and the Reservoir does not have the space for expansion, which means that a new site will have to be found or else the system will be stretched to capacity.

While densification and new developments will have a large impact on the reticulation, the bulk supply would have been catered for by the coming on stream of the Western Aqueduct and the provision of additional reservoirs.
4.3.4 Reticulation

The existing reticulation in the traditionally urban areas seems to be adequate but the effect of infill areas will still need to be determined. The existing reticulation and storage facilities can be seen in Map 8.

In the rural areas of eMmause, the reticulation needs upgrading while other areas like Klaarwater are at presently being upgraded. In areas like KwaNdengezi the water system comprises 200l ground tanks which are filled up slowly and limits distribution. These tanks need to be decommissioned and a reticulation system installed that can handle the requirements for water connection to each individual house.

Following a meeting with the Councillors from the study area on the 30th January 2015, it was mentioned that the eMMause are has little or no access to piped water.

4.3.5 Household Access to Water

Figure 5: Access To Water, 2001 & 2011

- The largest segments of households have access to piped water inside the dwelling, followed by a large segment with piped water inside the yard.
- There has been a decrease in the percentage of households that have no access to water and piped water to community stand.
- Households’ access to water has increased with emphasis on the segment with piped water inside their dwellings.

Source: STATS SA Census, 2001 & 2011
Map 14: Water Infrastructure
4.4 SEWER INFRASTRUCTURE

4.4.1 INTRODUCTION

eThekwini Municipality owns and operates 27 Sewage Treatment Works, as shown in the figure 6 below.

Figure 6: eThekwini Sewage Treatment Works

(Source: eThekwini Water Services Development Plan: 2012)

The Pinetown South Area is served by two Catchments the Umhlatuzana Catchment and the Umlaas Catchment (see Figure 7 and Figure 8).
Figure 7: Umlaas Catchment

(Source: eThekwini Water Services Development Plan: 2012)

Figure 8: Umhlatuzana Catchment

(Source: eThekwini Water Services Development Plan: 2012)
### 4.4.2 System Summary

#### 4.4.2.1 Dassenhoek

Sewering of the Dassenhoek system consists of constructing a trunk into the Dassenhoek rural areas (north of Dassenhoek and east of KwaNdengezi) and extending the reticulation network into the Thornwood, Nagina and Luganda areas.

Figure 9: Dassenhoek Treatment system

(Source: Ethekwini Municipality Waste Water Management: Wastewater Spatial Planning Study 2012/2013)

Dassenhoek Works has a current AADF of 2.2ML/day. It is anticipated that the ultimate flow at the works will be of the order of 11ML/day.)
4.4.2.2 Kwandengezi

The currently informal areas to the immediate west of KwaNdengezi will require a trunk network in the long term.

The areas further west, viz. Salem and Ntshongweni, are considered not suitable for off-site treatment at the KwaNdengezi Works as they are separated from KwaNdengezi by a significant gorge.

Figure 10: KwaNdengezi Treatment System

(Source: Ethekwini Municipality Waste Water Management: Wastewater Spatial Planning Study 2012/2013)

KwaNdengezi Works has a current AADF of 1.5Ml/day. It is anticipated that the ultimate flow at the works will be of the order of 5MI/day.)
4.4.2.3 Umhlatuzana

EWS have planned to decommission Hillcrest Works in the medium term and transfer its flows to Umhlatuzana Works. This will necessitate the construction of a trunk sewer from Tshelimnyama (A) to Hillcrest Works (B), with some upgrades to the existing trunk between the Umhlatuzana Works (0) and Tshelimnyama (A).

Figure 11: Umhlatuzana Treatment System

(Source: Ethekwini Municipality Waste Water Management: Wastewater Spatial Planning Study 2012/2013)

THD, the developers of the proposed Shongweni development, require this trunk to service their “Site 2” development (at the approximate location of point K on the layout). Their proposed trunk route, however, necessitates the pumping of Hillcrest Works flows in order to decommission Hillcrest Works. Whilst their consultants would have investigated this in more detail than the desktop nature of this master planning exercise, the necessity to pump Hillcrest Works flows should be established prior to detail design of the trunk.

Umhlatuzana Works has a current AADF of 9.4ML/day. It is anticipated that the ultimate flow at the works will be of the order of 40ML/day, including the transfer of flows from Hillcrest Works.
4.5 BULK SEWER

The Pinetown South areas, for example wards 63, including the suburbs of Nirvana Hills, Northdene, Mariaan Industrial Park, Malvern etc.; Ward 16, including the suburbs of Sarnia, St Wendolins, Pinelands etc. and the Industrial areas are the most urbanized. These areas are well serviced in terms of bulk sewer. However, it is the infill areas and South and West end of the Study area that need to be addressed in terms of Bulk Sewer. The less urban, more rural areas have some waterborne sewerage; however some of these areas like eMMause need serious intervention.

Discussions with Mike Hibbelman and Tony Holbrook suggests that some of the rural areas have pit latrines or no sanitation. There seems to be illegal water connections and flushing toilets terminate at the property boundary. There is also a proposed development from Shongweni to Tshelimnyama, however the existing Bulk is in need of upgrade and still leaves many areas un-serviced. The Dassenhoek Water Treatment Works will be redundant and therefore decommissioned. The bulk system is acceptable for the current flows but the effect of the infill development and densification still needs to be investigated. Currently the drawing board is a new bulk main from Klaarwater South to Dassenhoek which will result in the decommissioning of the Dassenhoek Treatment Works. This line should in future be extended to the KwaNdengezi Treatment Works.

The current Waster Water Treatment Works within the area are:

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<th>Name</th>
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<tr>
<td>Dassen Hoek</td>
<td>5.0</td>
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<tr>
<td>Umhlatuzana</td>
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A meeting with the Councillors from the Study area on the 30th January 2014 highlighted issues of waterborne sanitation. According to the Councillors a Bulk Sewer Project was proposed to the community, meetings and discussion were held with Councillors with waterborne sewerage proposed for Wards 13, 14, 15 and 16, however nothing has come to fruition. eMMause was in dire need of assistance and instead of receiving toilet facilities for each home, there has been a Communal Block put in place to service the community. Further to the issue of sanitation facilities was the Waste Water Treatment Plant that according to the Councillors were proposed in Ward 13; they have since received no news and seen to action.
According to Stats SA Census (2011), the total amount of households that have access to waterborne toilet systems is 50708. This indicates that approximately 57% of all households in the Pinetown South Study Area have access to waterborne sewerage systems. Another 6% of the total households in the Study Area have access to a flush toilet, however, with a septic tank system. The remainder, approximately 37% have access to other toilet systems, including the following categories: Chemical, Bucket, VIP systems or none and other systems.
The largest segment of households currently has access to flush toilets with waterborne sewerage. In general, access to toilet facilities increased over the ten year period.

The greatest decrease from 2001 to 2011 is under the column None or other.

There has been an increase of approximate 6% to flush toilets with waterborne sewerage, 2% increase to flush toilets with septic tanks; a 1% increase to the Chemical toilet system and a 5% increase to pit latrine systems with ventilation, from the year 2001 to the year 2011. The graph above also illustrates that there has been a decrease in the bucket system, pit latrines with no ventilation and other toilet systems or those that have no access to toilet systems. Subsequently it is by implication that eThekwini Municipality has within a 10 year period given households in the Pinetown South area better access to toilet facilities since the year 2001.
Although VIP systems are regarded as an acceptable as a basic standard of sanitation; essentially the Municipality intends getting rid of all VIP type systems and aim towards providing all people with waterborne sanitation or urine diversion systems. As per the graph above, it is evident that the greatest percentage of toilet systems are by means of a flush toilet system with waterborne sewerage/municipal sewerage reticulation, totalling 56.68% (as per figure 9). Ward 12, 14 and 15 are the only wards that indicates that waterborne sewerage is lesser than 5 percent. Ward 14 is the worst hit, with under 1% of Waterborne sewerage. Ward 14 consists of Emansenseni-A, Mozambique-B, Dassenhoek, Namibia-C, Cutshwayo, Coffee Farm, Angola Block-E and Thornwood. Pit systems with no ventilation are the second highest with a total figure of 16.13%.

4.6 ELECTRICAL INFRASTRUCTURE

4.6.1 HOUSEHOLD ACCESS TO ENERGY FOR LIGHTING

Figure 14: Access to Energy for Lighting 2001 & 2011

Source: Stats SA Census 2001 & 2011

The largest percentage of households have access to lighting via electricity, with the secondary source being candles. There has been an approximate 8% increase in terms of electricity provision to households, or household access to electricity. There has also been a slight increase to the provision of lighting via Solar, however the total figures for both 2001 and 2011 are insignificant, below 1 %. 

<table>
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<td>Gas</td>
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<tr>
<td></td>
<td>Candles</td>
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<td></td>
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</tr>
<tr>
<td></td>
<td>None/Others</td>
<td>0.45</td>
</tr>
</tbody>
</table>

Source: Stats SA Census 2001 & 2011

The largest percentage of households have access to lighting via electricity, with the secondary source being candles. There has been an approximate 8% increase in terms of electricity provision to households, or household access to electricity. There has also been a slight increase to the provision of lighting via Solar, however the total figures for both 2001 and 2011 are insignificant, below 1 %.
4.7 ACCESS TO REFUSE REMOVAL FACILITIES

Figure 15: Access to Refuse Removal, 2001 & 2011

The largest segment of respondents have their refuse removed by the local authority at least once a week. There has been a slight increase in the removal of refuse by local authorities (approximately 2%). Local Authority refuse removal is estimated, according to the census data, at greater than 85%, which is significantly
5 ENVIRONMENTAL ANALYSIS

5.1 INTRODUCTION

The purpose of this environmental situational analysis has been to:

1. Review current and previous policies, plans, and environmental studies relevant to the Pinetown South Local Area Plan (LAP), Functional Area Plan (FAP) and Scheme;
2. Identification and mapping of natural assets including open spaces and areas of biodiversity significance;
3. Identification of environmental risks and potential immediate threats to the natural assets.

The outcomes of this phase will be used to inform the forthcoming project phases.

The baseline information presented in this report was collected from a review of existing documentation and spatial databases, supplemented by limited ground truthing during a site visit (carried out on 19 November 2014). Note that the information presented in this section is based on the most recent available information. It is considered a work in progress and will be updated as and when more recent and detailed information becomes available.

5.2 REVIEW OF EXISTING PLANS

The environmental situational analysis of the Pinetown South LAP, FAP and Scheme has been informed by a wide range of policies, plans and environmental studies relevant to the study area. This includes consideration of the following:

5.2.1 ETHEKWINI INTEGRATED DEVELOPMENT PLAN (IDP)

The Integrated Development Plan (IDP) provides an overall framework for development within the eThekwini Municipal Area. It takes into account existing conditions and problems, and resources available for development. It sets out how land should be used, what infrastructure and services are needed, and how the environment should be protected.

Within this plan, the following has been taken into consideration:

- There are six Strategic Priority Areas, one of which is for eThekwini to be ‘An Environmentally Sustainable City’ where the “natural environment and resource base is preserved and utilised in a sustainable manner within eThekwini” and “development is implemented sustainably to ensure the health of citizens and its biodiversity.”
- Central to forging an environmentally sustainable city are the following development principles:
  o Sustain our ecosystems and natural resources;
  o Understand the municipality’s natural thresholds and develop within these boundaries;
  o Develop integrated and collaborative partnerships to ensure innovative responses to environmental challenges;
  o Build a green economy and create green jobs;
  o Create sustainable human settlement and built form;
  o Respond appropriately to climate change; and
  o Ensure alignment of the Municipality’s strategic direction with environmental planning and sustainability principles.
- Loss of natural capital is a key development challenge. This loss is largely as a result of habitat destruction and invasive alien species, as well as over-exploitation of natural resources, and climate change.
• Climate change is another key development challenge which threatens to undo many of the development gains made over the last decade. Planning for climate change impacts must be integrated throughout all municipal sectors.
• Spatial Planning and Land Use Management Systems must aim to protect and enhance the natural resource base, including the retention of viable agricultural land and important open space corridors, as well as build resilience to the impacts of climate change.
• Natural systems provide ecosystem services that are often impossible, or extremely costly, to substitute. These ecosystem services are critical for meeting the growth and development needs of the municipality and all its residents and visitors, particularly the poor.

5.2.2 ETHEKWINI SPATIAL DEVELOPMENT FRAMEWORK (SDF)

The Spatial Development Framework (SDF) is an integral part of the IDP as it defines the spatial form in which the IDP principles and objectives should be implemented.

Within this framework, the following has been taken into consideration:

• The SDF is informed by 4 spatial principles and guidelines, one of which is the ‘Principle of Mainstreaming & Coordinating Environmental Planning’. The intention of this principle is to protect and conserve environmentally sensitive areas within the municipal area and to integrate social, economic and ecological factors into planning, decision making and implementation in order to:
  o reduce greenhouse gas emissions, build resilience to extreme weather events, and enable long term adaption to climate change;
  o promote positive environmental quality and introduce environmentally sensitive management of development;
  o promote the inherent value of the natural and built environment and an understanding of the environment’s role in providing natural resources to underpin sustainable socio-economic development;
  o alleviate environmental and pollution related health hazards;
  o retain and enhance natural qualities and assets of the eThekwini Municipal Area (EMA); and
  o build urban resilience in response to a future that is increasingly uncertain.
• Climate change and pressure of development on natural resources are key environmental factors affecting the EMA.
• Supports compact city form where environmental conservation areas and areas of high ecosystem services delivery are demarcated and protected.
• Advocates the following environmental planning proposals:
  o Managing drainage catchments;
  o Conserving riverine systems;
  o Conserving functional ecosystems;
  o Maintaining smaller open space fragments;
  o Incorporating high priority undeveloped land;
  o Conserving visual features;
  o Eco-tourism and green economy;
  o Managing development impacts;
  o Incorporating climate change considerations;
  o Threats to D’MOSS and mitigation thereof; and
  o Biodiversity protection and socio-economic development.
• The SDF includes 4 strategies, one of which is to ‘Manage urban growth, construct and maintain viable built environment and sustain natural environments and resources’. The key elements of the strategy include environmental protection and enhancement, climate change, place-making and optimal use of existing infrastructure.
• In order to sustain natural environments and resources as part of the above-mentioned strategy, the following is required:
  o Optimise the economic, social, aesthetic and functional value of ecosystem services through the implementation of the Durban Metropolitan Open Space System (D’MOSS);
  o Existing natural environmental resources should be protected and enhanced to ensure that the ecosystems within the open spaces are able to effectively deliver services;
  o Development must be directed away from hazardous areas such as floodplains, unstable soils and steep slopes;
  o Protect environmentally sensitive areas, agricultural land and open space;
  o Protect river catchments and develop catchment management plans for river systems where rapid development will occur;
  o Develop coastal management plans;
  o Create a network of green open spaces and protect important environmental areas;
  o Support sustainable catchment management and stormwater practices; and
  o Promote the prevention and reduction of pollution.

Figure 16: Extract of Composite SDF Map (SDF Report 2014/15 Review

5.2.3 Central Spatial Development Plan (CSDP)

The Central Spatial Development Plan (CSDP) translates the spatial development intentions of the SDF into land use, transport, environmental, and infrastructure implications for the Central Durban region, as well as providing broad based land use directives to guide Local Area Planning and LUMS.

Within this plan, the following has been taken into consideration:

• Open space system of the CSDP is based on D’MOSS, which comprises mainly river systems and grasslands and forest/woodlands;
• Many of the natural resources within the Central Spatial Region (CSR) are under threat from the continuous development growth and pressures.
• The limited extent and extreme fragility of the natural assets base require that they are vigorously protected, integrated into a sustainable environmental system and appropriately managed in order to adequately support the levels of anticipated development in the CSR.

• Poor urban environmental quality is as a result of:
  o Poor environmental controls on industrial pollution and emissions;
  o Rapid growth in un-serviced informal and peri-urban settlements.

• CSR plays an important role at a regional and municipal scale in the provision of ecosystem services. This includes for example:
  o Biodiversity protection;
  o Catchment management;
  o Climate change impact management;
  o Pollution minimisation; and
  o Disaster management.

• The CSDP outlines the role, key characteristics, spatial development concepts and key actions for each of its eight Local Areas.

Figure 17: Extract of Composite CSDP Map (CSDP 2013/14 Review)

5.2.4 PINETOWN SOUTH INTEGRATED DEVELOPMENT FRAMEWORK (IDF)

The purpose of the IDF is to assist the eThekwini Municipality and provincial line function departments to reprioritize their budgets and / or implement initiatives to promote urban renewal.

Within this framework, the following has been taken into consideration:
• Summary of discussion points from the analysis:
  o There are areas of biological conservation potential within the study area that have metropolitan scale significance. In many instances, the reservation of this land for this purpose is likely to compete directly with meeting other community needs.
Agricultural potential will be most successfully realized when agriculture is planned at a localized scale and integrated into urban design and storm water management strategies.

Storm water management, erosion control, and protection of watercourses within the overall catchment management strategy must be a central component of the environmental planning input of the area.

Great potential to enhance the environmental qualities of the area through appropriate urban greening, landscaping and generally taking care of the environment.

Tourism potential of the Marianhill Monastery needs to be investigated further.

Summary of the environmental opportunities:

- Steepness of land has limited transformation of woodlands / forests;
- High rainfall;
- Scenic and attractive landscape;
- Some scope for large scale urban agriculture in valley bottoms, also scope for more diffuse agricultural pursuits in localized areas;
- Good quality vegetation in gorges and Mlazi and Mlatuzana Rivers offer significant potential for D’MOSS;
- Orderly urbanization at higher densities to reduce development in no-go areas;
- There are known archeological sites, two of which are particularly important.
- Attractive living environment;
- Opportunities for careful planning of smaller river catchment valleys to create positive urban settlement within high quality environmental landscape; and
- Urban greening through tree planting and landscaping can contribute to the environmental quality of the area.

Summary of the environmental constraints:

- Steepness of incised valley limits extent of land available for urban development;
- Steepness limits the linkages between areas and accessibility;
- Low agricultural production potential generally;
- Soils poor for pit latrines and septic tanks;
- Moderate erodibility of soils in the area;
- Flooding potential in the valley bottoms;
- Increased pressure for settlement in catchment areas;
- Competition between the need to protect grasslands and permit urban development/agriculture needs careful management;
- Inadequate stormwater control with increased informal urbanization;
- Difficult topographic and geological conditions; and
- Physiography limits opportunities for increased linkages between areas.

5.3 ENVIRONMENTAL STRUCTURING ELEMENTS

The Pinetown South study area (hereafter to referred to as ‘Pinetown South’) contains significant natural assets. This includes Marionwood, Roosfontein and North Park Nature Reserves, the Umlaas, Umhlatuzana, and Umbilo Rivers, wetlands, grasslands, and forest / woodland areas. Paradise Valley Nature Reserve borders the Pinetown South study area in the west, and is the site of a flagship municipal project which is restoring ecological infrastructure as a climate change adaptation intervention. It is acknowledged that these natural assets are not only important at a local level, but also at a provincial and national level, particularly the grasslands. These natural assets are not only important for conservation of biodiversity, but also for provision of ecosystem services, such as food, fibre and fuel, water purification, and natural hazard protection. In this context, ecosystem services can be defined as services that are generated by the natural environment, which enhance human well-being, and are directly used by people.

By protecting and managing these natural assets, the cost of replacing the ecosystem services they deliver, which are generally provided at low cost, can be minimized. For example, what would it cost to construct a water treatment plant to replace the water purification services provided by the rivers and wetlands in Pinetown South? It is, however, important to note that these services can only be supplied if the ecosystems from which they are
derived are functional. For example, you cannot expect a water reticulation system to supply water if the pumps are not working. Similarly, you cannot expect rivers to supply high quality water if the supporting systems, such as the wetlands, are removed or run down.

Committing to environmental sustainability and the restoration and rehabilitation of natural assets as part of the development plans and urban management activities for an area such as Pinetown South can help secure the supply of life supporting ecosystem services that the municipality and residents of Pinetown South and surrounding areas are directly dependent on. Further to this, key economic activities, such as tourism, require good quality supply of ecosystem services. For example, poor water quality in the Umhlatuzana River can negatively affect the recreational amenity of North Park Nature Reserve and its attractiveness as a tourist destination.

The natural environment is also likely to play a key role in the future by providing a buffer to climatic shocks and stresses and natural disasters, either caused or exacerbated by global climate change. However, ecosystems need to be functional and resilient in order to provide these services. Thus, an important starting point for the Pinetown South LAP, FAP and Scheme should be in acknowledging, protecting and enhancing the natural assets within the project boundaries.

5.3.1 Land Form

Pinetown South can be characterised as an undulating landscape with hills and deep, narrow river valleys. These deeply incised valleys were formed by the Umlaas, Umhlatuzana and Umbilo Rivers, and the tributaries of these rivers (Pinetown South IDF, 1998). As a result, a substantial proportion of the study area is over-steep with slopes of greater than 1:3. In general, these steep areas have remained less transformed than the surrounding areas, often covered with indigenous forest / woodland. Similarly, the floodplains of these rivers are largely undeveloped as they are subject to periodic flooding, particularly on the inside bends of the rivers with high erosion on the outside bends.

The implications of this topographical form are that the deeply incised river valleys and steep slopes place severe restrictions on the types and extent of development.

Map 17: Topography in the Pinetown South study area
5.3.2 Land Cover

Land cover is used in this status quo assessment to indicate the presence and extent of land uses, such as urban development, which can potentially threaten or impact detrimentally on natural assets and their ability to generate ecosystem services.

The land cover of Pinetown South was derived from a GIS desktop study using the Ezemvelo KZN Wildlife (EKZNW) Land Cover of KwaZulu-Natal data (2010) – see Map 3. Based on the available information, the dominant land cover of Pinetown South is built-up settlement (63% of total area). This is followed by dense bush (18%), grassland (6%), and forest (4%) – Figure 3. In total, only 31% of Pinetown South comprises natural assets of which approximately 1% is considered to be degraded.
Map 19: Land cover in the Pinetown South study area

Figure 18: Pie chart showing key land cover types in the Pinetown South area (EKZNW, 2008)

The implications for development are that further transformation of the remaining natural assets may compromise ecosystem services flows and needs to be carefully assessed and considered.

5.3.3 VEGETATION

The historical vegetation types occurring in Pinetown South were derived from a GIS desktop study using the EKZNW Vegetation data (updated in 2012). As shown in Historical Vegetation Map, there are number vegetation types which previously occurred in the area, with North Coast Bushland being the most dominant (61.3% of total area), followed by North Coast Grassland (35%), Southern Coastal Scarp Forest (1.9%), and KZN Coastal Forests (18%).
These vegetation types, particularly the bushland and forests, are important generators of ecosystem services, such as provision of food, fibre and fuel, recreation and aesthetic values, soil formation and retention, and natural hazard protection.

Map 20: Historical vegetation types occurring within Pinetown South (EKZNW, 2012)

The implications for development are that the no further losses of North Coast Grassland which are generally located on the more gentle slopes and therefore preferable for development, are appropriate, or likely to be supported by the relevant environmental authorities. Any proposed transformation of forest areas is also inappropriate and unlikely to be supported by the relevant authorities. Furthermore, rehabilitation and/or restoration of natural areas should aim to reinstate the Southern Coastal Scarp and KZN Coastal Forests in the deep river valleys.

Figure 19: Key historical vegetation types occurring in Pinetown South prior to development
5.3.4 RIVERS

There are three main east-west flowing rivers in Pinetown South. These are the Umlaas, Umhlatuzana, and Umbilo Rivers – see Map 13. The Umlaas River drains into the Indian Ocean via the Umlaas Canal, while both the Umhlatuzana and Umbilo Rivers drain into Durban Bay. These natural assets, given their location, are important generators of water-related ecosystem services, such as water cycling (e.g. maintain dry season flows), water purification, and natural hazard protection (i.e. flood reduction), within the eThekwini Municipal Area. Given their location, these ecosystem services will also be important in reducing urban and industrial pollution effects on the downstream areas, including Durban Bay.

Map 21: Rivers, floodplains and wetlands in Pinetown South

Based on eThekwini’s Rivers data, there are approximately 317 kilometres of rivers and streams within the project boundaries. The majority of these rivers are located within the Umhlatuzana catchment (50% of rivers / streams), followed by the Umlaas catchment (38%) and Umbilo catchment (12%). In terms water quality, the October 2014 River Water Quality Report produced by the eThekwini Water and Sanitation Department, rated the Umlaas River as ‘acceptable’. The Umhlatuzana River is rated as ‘acceptable’ up until the Umhlatuzana Wastewater Treatment Works, where after it is rated as ‘poor’. Similarly, the Umbilo River is rated as ‘acceptable’ up until the Umbilo Wastewater Treatment Works, where after it is also rated as ‘poor’. The impact of the Umhlatuzana and Umbilo Wastewater Treatment Works’ on the quality of these rivers is an area of concern.

The eThekwini Municipality State of Rivers Report (2007) identified the following key challenges affecting these rivers:

- Faecal contamination in all three rivers from Wastewater Treatment Works and septic tank seepage. Note that the Umbilo Wastewater Treatment Works was identified as the single greatest point source of water pollution impact on the Umbilo River;
- Regular illegal discharges of pollution from upstream industrial/commercial areas in the Umbilo River;
- Illegal solid waste disposal in the riparian zone of the Umhlatuzana River;
- Alien invasive plant infestation in riparian zone in all three rivers;
Nutrient enrichment from upstream agricultural activities in the Umlaas River; and Flow regulation from a number of upstream dams in the Umhlatuzana and Umlaas Rivers.

Figure 20: Umbilo River Wastewater Treatment Works (left) and Umlaas River near Kwandengezi (right)

(Source: State of Rivers Report, 2007)

The implications for development are that the Umhlatuzana and Umbilo Rivers are already stressed, and any new or increased discharges of pollutants into these rivers should be avoided and may not be supported by the licensing authorities. Furthermore, current and future discharges are likely to be closely scrutinised and issues of non-compliance flagged.

The 1:100 year flood line was modelled by the eThekwini Coastal and Stormwater Catchment Management Department (CSCMD) to inform new development applications, ensuring that the location, layout and design of developments is considerate of the potential impacts of climate change on rainfall patterns, flooding and run-off.

As shown in Map 13, the 1:100 floodlines are generally confined to the narrow river valleys. These areas which are at risk from flooding only account for 506ha or 4% of the study area. However, with the transformation of the upper catchments of these rivers from natural vegetation to built-up settlement (including industry), the frequency and intensity of flood events is likely to increase. Particularly in the Umhlatuzana and Umbilo catchments with the development of the Westmead industrial area.

The implications for development are that the valley bottoms offer limited development potential as they are subject to periodic flooding. Furthermore, new and existing developments should be designed, as per eThekwini’s requirements, to attenuate stormwater runoff on site to mitigate flooding risk to downstream areas.

5.3.5 Wetlands

Wetlands are defined by the National Water Act (No. 36 of 1998) as “land which is transitional between terrestrial and aquatic systems where the water table is usually at or near the surface, or the land is periodically covered with shallow water, and which land in normal circumstances supports or would support vegetation typically adapted to life in saturated soil.”

There is a growing recognition of the importance of wetlands with regards to biodiversity and provision of ecosystem services. For example, wetlands are generally very effective in attenuating stormwater runoff, and removing nutrients and sediment from runoff before it enters rivers and estuaries. Wetlands also play a vital role in providing a refuge or nursery for a number of wetland dependent organisms, such as frogs, birds and certain insects and plants. These organisms are not only critical to the functioning of wetland ecosystems, but also the surrounding riparian, grassland, woodland and forest ecosystems.
As shown in Map 13, there are a number of wetlands scattered throughout Pinetown South. Although development has encroached into many of these wetlands, the remaining wetlands are likely to play a significant role in regulating surface and groundwater flows, as well as managing the water quality of rivers feeding into Umlaas, Umhlatuzana and Umbilo Rivers. With the increase in development in these three catchments, the role of the remaining wetlands as suppliers of these services will become more critical in maintaining the ecological functioning of these rivers.

Note that the extent of wetlands depicted in Map 13 is based on the wetlands data provided by the eThekwini Environmental Planning and Climate Protection Department (EPCPD). Note that any future developments proposed within the identified wetland areas will require detailed studies to more accurately delineate the wetland areas and to assess their functionality and health. This should preferably be done by a suitably qualified wetland specialist or ecologist. Note also that Pinetown South contains a number of wetlands identified as a National Freshwater Priority Area (NFEPA).

The implications for development are that the transformation of the remaining wetlands, particularly the NFEPA wetlands, is both inappropriate and unlikely to be supported by the relevant authorities. Furthermore, wetland areas are generally unsuitable for development due to the high water table and risk of flooding. The cost of construction may also be higher due to special founding requirements.

As with rivers, the development buffer around wetlands is dependent on the local situation, such as the type of activity, and may extend beyond the statutory 20m from the edge of the wetland, particularly for wetlands identified as NFEPA. For example, Map 13 shows the wetland areas with a 32m development buffer. Note that certain activities or water uses within 500m of a wetland may require a Water Use License from the Department of Water Affairs (National Water Act, No. 36 of 1998).

### 5.3.6 Areas of Conservation Significance

Pinetown South contains several sensitive ecosystems or areas of conservation significance. These areas have been identified as being of conservation value as they are necessary to maintain a representative sample of biodiversity and to sustain the functioning of that particular ecosystem. Note that the conservation significance of these areas is not necessarily related to their condition, but the need to conserve these sites in order to meet provincial and national conservation targets.

### 5.3.7 Protected Areas

There are three protected areas in Pinetown South, namely North Park Nature Reserve, Marion Wood Nature Reserve and a portion of Roosfontein Nature Reserve – Map 14. Only North Park Nature Reserve enjoys formal Protected Area status in terms of having been gazetted under the National Environmental Management: Protected Areas Act (No. 57 of 2003). Note that the eThekwini Environmental Planning and Climate Protection Department is in the process of proclaiming the other two reserves as protected areas. Thus, in total some 106ha or less than 1% of the study area falls within formally protected and conservation areas.

Note also that the Marianhill Landfill Site (which includes the buffer area) is registered as an urban conservancy.

North Park Nature Reserve reserve is managed by Ezemvelo KZN Wildlife and is 52ha in extent. Located adjacent the Umhlatuzana River, this reserve is covered largely by KZN Coastal Forest, and is home to large numbers of tree (102 recorded species), bird (160 recorded species) and butterfly species, as well as variety of small mammals, including the blue and grey duiker.
The implications for development are that protected areas are afforded a relatively high level of protection by the National Environmental Management: Protected Areas Act (No. 57 of 2003). Furthermore, certain activities within or adjacent protected areas may require environmental authorisation from the relevant environmental authorities.

In terms of the National List of Ecosystems that are Threatened and in Need of Protection (GN R. No. 1002 of 2011), Pinetown South contains two Critically Endangered (CE) ecosystems, namely Durban Metropole North Coast Grassland, and one Endangered ecosystem, namely KZN Coastal Forest. As shown in Map 15, the North Coast Grasslands (red) generally occur in and around Westmead, the Marianhill Landfill Site, and Mariann industrial area. The remaining KZN Coastal Forest areas (orange) are primarily located within North Park Nature Reserve.
The implications for development are that certain activities within these areas require environmental authorisation from the relevant environmental authorities and may be subject to an offset requirement (NEMA 2014 EIA Regulations). According to the KZN Norms and Standards for Biodiversity Offsets, the offset ratio for a CE ecosystem can be up to 1:30, which can greatly increase development costs.

5.3.8 DURBAN METROPOLITAN OPEN SPACE SYSTEM (D’MOSS)

The Durban Metropolitan Open Space System (D’MOSS) is a system of open spaces, some 74,000 ha of land and water that incorporates areas of high biodiversity value linked together in a viable network – Map 16.

D’MOSS is important for not only contributing to the attainment of provincial and national biodiversity conservation targets, but also the provision of a range of ecosystem services to all residents of Durban. From a climate adaptation perspective, the biodiversity that is protected within D’MOSS plays an important role.

D’MOSS has been designed to maintain:

- As many functional ecosystems as possible;
- The widest range of open space types (e.g. grassland, forests, wetland);
- Physical links between open spaces to allow for the flow of genetic material, energy, water and nutrients;
- Physical links to and between significant sources of biodiversity (e.g. Pondoland and Maputaland centres of plant diversity) to prevent local species extinctions in the eThekwini Municipal Area; and
- Physical links along the coast, connecting river catchments to marine sources of biodiversity.

D’MOSS is a development controlled area which overlies the underlying town planning scheme zoning. Development within a D’MOSS area may not occur without the developer having first obtained the necessary environmental authorisation or support from the EPCPD, which may or may not be given.
5.3.9 **Provincial Systematic Conservation Plan**

From a provincial perspective, Pinetown South contains several terrestrial areas classified as irreplaceable (i.e. CBA 1: Mandatory) – see Map 9. These areas are classified as being irreplaceable (Irreplaceability value of 1) as they represent the only localities in which the conservation targets for one or more of the biodiversity features contained within them can be achieved i.e. there are no alternative sites available.

Within the project boundaries, there are also two small areas adjacent the Umbilo River which is classified as CBA 3: Optimal. These areas have a relatively low irreplaceability score as they are not the only nor the preferred alternative sites available to meet conservation targets for one or more of the biodiversity features.
The implications for development are that certain activities within these CBA 1 areas may require environmental authorisation from the relevant environmental authorities and development therein may be subject to a biodiversity offset requirement.

### 5.3.10 Faunal and Floral Species of Conservation Significance

In 2000, EKZNW also developed the Strategic Environmental Assessment (SEA) to accompany the above Provincial Terrestrial Systematic Conservation Plan. The SEA identified potential sites where a selection of 255 Red Data Book (RDB) species was likely to occur based on modeling of their likely distribution. As shown in Table 1, there are a total of 27 RDB fauna and flora species which can potentially occur in Pinetown South.

#### Table 2: Red Data Book species which may occur in Pinetown South

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<th>Common Name</th>
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<td>Pickersgill’s Reed Frog</td>
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<td>Gastropod</td>
<td>Archachatina semidecussata</td>
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<td></td>
<td>Edouardia conulus</td>
<td>Conical Bark Snail</td>
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<tr>
<td>Insect</td>
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<td>Damalis femoralis</td>
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<td>Stagira virescens</td>
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<td>Millipede</td>
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<td>Red Fire Millipede</td>
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<td>Centrobolus inscriptus</td>
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<td>Annelid</td>
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<td>Black-headed Dwarf Chameleon</td>
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<td><em>Eucomis autumnalis</em></td>
<td>Pineapple lily</td>
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<tr>
<td></td>
<td><em>Bowiea volubilis</em></td>
<td>Climbing-Onion</td>
</tr>
<tr>
<td></td>
<td><em>Bulbine inflata</em></td>
<td></td>
</tr>
<tr>
<td></td>
<td><em>Craterostigma nanum</em></td>
<td></td>
</tr>
<tr>
<td></td>
<td><em>Diaphananthe millari</em></td>
<td></td>
</tr>
<tr>
<td></td>
<td><em>Gladiolus cruentus</em></td>
<td>Blood-red Sword Lily</td>
</tr>
<tr>
<td></td>
<td><em>Scilla natalensis</em></td>
<td>Blue squill</td>
</tr>
<tr>
<td></td>
<td><em>Stachys comosa</em></td>
<td></td>
</tr>
<tr>
<td></td>
<td><em>Streptocarpus primulifolius</em></td>
<td>Cape Primrose</td>
</tr>
</tbody>
</table>

The eThekwini Environmental Planning and Climate Protection Department (EPCPD) recently completed a Systematic Conservation Plan (SCP) for the entire eThekwini Municipal Area (EMA) in order to identify and prioritise areas for the conservation of biodiversity and ecosystem services. The prioritisation of areas is based on explicit goals or targets for achieving biodiversity pattern and persistence.

In Pinetown South, there are seven priority areas identified by the SCP (i.e. target of 100% protection) – see map below. These areas have been prioritised as they are critical to the continued existence of the following faunal and floral species of conservation significance:

1. *Durbania amakosa* (Amakoza Rocksitter butterfly);
2. *Dixeia pigea* (Ant-heap White butterfly);
3. *Charaxes varanes* (Pearl Charaxes butterfly);
4. *Charaxes candiope* (Green-Veined Charaxes butterfly);
5. *Seemannaralia gerrardi* (Tree);
6. *Aloe cooperi subsp. Cooperi* (Cooper’s Aloe);

Map 26: eThekwini Municipality Systematic Conservation Plan priority areas in Pinetown South
The implications for development are that any loss of habitat within these priority areas is undesirable and unlikely to be supported by the relevant environmental authorities unless it can be verified by a qualified specialist that the species of significance that are projected to occur therein are no longer present. Furthermore, future development adjacent to these areas is likely to be closely scrutinized.

### 5.4 Ecosystem Services Supply Management Areas

Environmental management interventions are most easily prioritised if one considers which ecosystem services are most important to conserve (i.e. are most needed or demanded), and where these are being supplied from. In Pinetown South, important ecosystem services are supplied by the natural assets which make up approximately 31% of the study area, as well as from the developed landscape, depending on the levels of hardening and their condition. Some open spaces are more functional and/or more important than others in delivering ecosystem services that are demanded locally, regionally and/or nationally.

The natural assets in Pinetown South are considered to contain biodiversity of regional and national significance (e.g. North Coast Grassland). It is therefore a supplier of biodiversity refuge services to regional and national users. There are a number of locally important ecosystem services which are of critical importance to the municipality and its residents. These include for example:

- Regulated fresh water supply (for domestic and industrial uses);
- Water purification (dilute and treat wastes and pollutants);
- Spiritual and religious values (cultural practices);
- Recreation and aesthetic values (e.g. birding, swimming, picnicking and angling);
- Soil formation and fertility (supporting agriculture);
- Climate regulation (e.g. reduce heat-island effect, assimilate particulate matter);
- Natural hazard protection (e.g. reduction of flooding and storm surge impacts);

The natural assets that supply these ecosystem services in Pinetown South have been mapped and are presented here (see ecosystems services supply map). This ecosystem services supply map identifies the key natural assets within the project boundaries that supply ecosystem services of value to the eThekwini Municipality, local residents, businesses and industry, downstream users, as well as regional and national users. Note this map is based largely on the D’MOSS as it has been mapped at a relatively fine-scale and incorporates the majority of areas of conservation significance highlighted before. The ecosystem services supply areas framework has been designed to be used in the Pinetown South LAP, FAP and Scheme to guide the future economic and social development path and decisions within the study area. This map has been prepared using the following spatial information:

Table 3 : Datasets used to map the Ecosystem Services Supply Management Areas

<table>
<thead>
<tr>
<th>SOURCE</th>
<th>CORE ECOSYSTEM SERVICES SUPPLY AREAS</th>
<th>SECONDARY ECOSYSTEM SERVICES SUPPLY AREAS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nature Reserves</td>
<td>Nature Reserves</td>
<td></td>
</tr>
<tr>
<td>Durban Metropolitan Open Space System (D’MOSS)</td>
<td>D’MOSS</td>
<td></td>
</tr>
<tr>
<td>eThekwini Rivers</td>
<td>Rivers</td>
<td></td>
</tr>
<tr>
<td>eThekwini Wetlands</td>
<td>Wetlands</td>
<td></td>
</tr>
<tr>
<td>Buffers</td>
<td>1:100 Year Floodline</td>
<td>32m on rivers; 32m on wetlands; 50m on forests;</td>
</tr>
</tbody>
</table>

As shown in the ecosystem services supply areas map are separated into core and secondary services supply areas. The description of and recommended environmental management response for these areas is presented in the table (4) below.
Table 4: Description of environmental management response for ecosystem services supply areas (ESSC)

<table>
<thead>
<tr>
<th>ESSC CATEGORY</th>
<th>DESCRIPTION</th>
<th>ENVIRONMENTAL MANAGEMENT RESPONSE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Category 1 – Core Ecosystem Service Supply Areas</td>
<td>Areas that fall within the D’MOSS, as well as rivers and wetlands. These areas have a high ability or potential to produce critical ecosystem services that are locally, regionally or nationally important.</td>
<td>These areas should not be developed or transformed, and rather prioritised for rehabilitation / restoration. Development in these areas (e.g. infrastructure, roads, etc.) should be carefully controlled to limit the development footprint, avoid especially sensitive habitats and species, and avoid causing fragmentation of the natural asset or cutting off corridors. Application for Environmental Authorisation subject to BA or S&amp;EIR may be required in these areas for proposed development activities, and if not legally required the municipality should request an environmental assessment be done before it approves a development application.</td>
</tr>
<tr>
<td>Category 2 – Secondary Ecosystem Service Supply Areas</td>
<td>Buffer around core areas or are important for the supply of other ecosystem services (e.g. recreational open spaces with low conservation value but high human use value). Corridor linkages between core areas. These areas protect the functionality and resilience of core areas, provide ecosystem services important to local (and sometimes regional) users.</td>
<td>Development in these areas can be considered, but the form, extent and type of development should be controlled to avoid losing the key functionality of such areas to supply buffer, corridor or other key ecosystem services. Application for Environmental Authorisation subject to BA or S&amp;EIR may be required in these areas for proposed development activities, and if not legally required the municipality should request an environmental assessment be done before it approves a development application.</td>
</tr>
</tbody>
</table>
In order to provide further guidance to the eThekwini Municipality in identifying which ecosystem services supply areas are likely to be most and least sensitive in terms of future development, priority conservation areas are identified (scores of 3, 2 and 1) to produce a scale of environmental sensitivity – see Table 5 and Map 21. The darker the green colour is on the map – the more likely the area will be deemed important for biodiversity conservation and ecosystem services supply, and therefore more sensitive to impacts of future development.

Table 5: Datasets used: Map Environmental Sensitivity of Ecosystem Services Supply Management Areas

<table>
<thead>
<tr>
<th>SOURCE</th>
<th>WEIGHTING OF 3</th>
<th>WEIGHTING OF 2</th>
<th>WEIGHTING OF 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>EKZNW Land Cover</td>
<td>Water natural; Wetlands; Forest; Dense Bush; Bushland; Grasslands / Bush Clump Mix; Grassland</td>
<td>Degraded Forest; Degraded Bushland; Degraded Grassland</td>
<td>Plantation; Golf courses; Subsistence; Annual commercial crops dryland; Small holding grassland; Dams</td>
</tr>
<tr>
<td>Nature Reserves</td>
<td>Nature Reserves</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Durban Metropolitan Open Space System (D’MOSS)</td>
<td>D’MOSS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>eThekwini Rivers</td>
<td>Rivers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>eThekwini Wetlands</td>
<td>Wetlands</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NFEPA Wetlands</td>
<td>NFEPA Wetlands</td>
<td></td>
<td></td>
</tr>
<tr>
<td>National List of Threatened Ecosystems</td>
<td>Critically Endangered; Endangered</td>
<td>Vulnerable</td>
<td></td>
</tr>
<tr>
<td>EKZNW Terrestrial Systematic Conservation Plan</td>
<td>CBA 1: Mandatory</td>
<td>CBA 3: Optimal</td>
<td></td>
</tr>
<tr>
<td>eThekwini Municipal Systematic Conservation Plan</td>
<td>Priority areas with 100% target</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Buffers</td>
<td></td>
<td>1:100 Year Floodline</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>32m on rivers; 32m on wetlands</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>50m on forests;</td>
<td></td>
</tr>
</tbody>
</table>

Map 28: Ecosystem services supply areas weighted in terms of environmental sensitivity
5.5 DRIVERS-PRESSURES-STATE-IMPACT-RESPONSE FRAMEWORK

Drivers-Pressures-State-Impact-Response (DPSIR) is a causal framework for describing the interactions between society and the environment. In the context of the Pinetown South LAP, FAP and Scheme, DPSIR has been used to describe linkages between human activities in Pinetown South and surrounding areas and the state on natural assets within the project boundaries (see Table 6).

Table 6: DPSIR Framework for Pinetown South

<table>
<thead>
<tr>
<th>DRIVER (Human Needs)</th>
<th>PRESSURE (Human Activities)</th>
<th>STATE (Ecosystems)</th>
<th>IMPACT (Ecosystem Services)</th>
<th>RESPONSE (Current Responses)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urbanisation</td>
<td>- Habitat Change</td>
<td>• Habitat loss (formal and informal residential, and industry); • Fragmentation of habitat; • Increased edge-effect (and impacts on habitat); • Reduction in biodiversity; • Increase in alien invasive vegetation (increased disturbance);</td>
<td>Reduction in provision of: • Food, fibre and fuel; • Genetic resources; • Fresh water; • Spiritual and religious values; • Knowledge system; • Education and inspiration; • Recreation and aesthetic values; • Sense of place; • Habitat; • Nutrient cycling; • Soil formation and retention; • Water cycling; • Invasion resistance; • Pollination; • Seed dispersal; • Pest regulation; • Climate regulation; • Disease regulation; • Natural hazard protection; • Erosion regulation; • Water purification.</td>
<td>- DMOS (i.e. protection of remaining natural assets); - eThekwini Systematic Conservation Plan (i.e. identify and prioritise areas for conservation of biodiversity); - EPCPD Impact Assessment Unit (i.e. Review and comment on development applications); - EPCPD Compliance and Enforcement Unit (i.e. monitor compliance of developments with conditions) - Proclamation of Roosfontein Nature Reserve as Protected Area; - Develop Pinetown South LAP, FAP and Scheme;</td>
</tr>
<tr>
<td>Economic growth/development</td>
<td>- Overexploitation</td>
<td>• Reduction in biodiversity (e.g. overharvesting); • Fragmentation of habitats (e.g. roads). • Increased nutrient and chemical loadings in rivers (e.g. Wastewater discharges); • Changes in natural flows (e.g. increased stormwater runoff). • Increase in alien invasive species (Triffid weed);</td>
<td>Reduction in provision of: • Food, fibre and fuel; • Genetic resources; • Fresh water; • Spiritual and religious values; • Knowledge system; • Education and inspiration; • Recreation and aesthetic values; • Sense of place; • Nutrient cycling; • Water cycling; • Habitat; • Invasion resistance; • Climate regulation; • Pest regulation; • Disease regulation; • Natural hazard protection; • Erosion regulation; • Water purification.</td>
<td>- CSCM on site stormwater attenuation policy</td>
</tr>
<tr>
<td>DRIVER (Human Needs)</td>
<td>PRESSURE (Human Activities)</td>
<td>STATE (Ecosystems)</td>
<td>IMPACT (Ecosystem Services)</td>
<td>RESPONSE (Current Responses)</td>
</tr>
<tr>
<td>-----------------------</td>
<td>-----------------------------</td>
<td>--------------------</td>
<td>-----------------------------</td>
<td>-----------------------------</td>
</tr>
<tr>
<td>• Climate change</td>
<td>• Reduction in biodiversity (e.g. change geographical distribution of species and increased wood component i.e. loss of grasslands); • Increase in alien invasive species (e.g. warmer climate benefits some species); • Increased frequency and intensity of floods; • Reduced water availability (i.e. greater rainfall variability); • Increased temperatures (e.g. heat stress); • Increased heat-related vector-borne diseases (e.g. Malaria and Cholera)</td>
<td>Reduction in provision of: • Food, fibre and fuel; • Genetic resources; • Fresh water; • Spiritual and religious values; • Recreation and aesthetic values; • Sense of place; • Nutrient cycling; • Water cycling; • Habitat; • Soil formation and retention; • Invasion resistance; • Climate regulation; • Pest regulation; • Disease regulation; • Natural hazard protection; • Erosion regulation; • Water purification.</td>
<td>• DMoss (i.e. provide corridors for migration of species); • 1:100 year floodline (i.e. inform development applications); • Municipal Climate Protection Programme; • Durban Municipal Climate Change Adaptation Plan; • Durban Climate Change Strategy;</td>
<td></td>
</tr>
</tbody>
</table>

5.6 ENVIRONMENTAL OPPORTUNITIES AND CONSTRAINTS FOR IDENTIFIED NODES

<table>
<thead>
<tr>
<th>NODES / CORRIDORS</th>
<th>ENVIRONMENTAL OPPORTUNITIES</th>
<th>ENVIRONMENTAL CONSTRAINTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Westmead Industrial Park</td>
<td>• Riverine systems offer scenic and attractive landscape; • Riverine systems and wetlands provide important water-related ecosystem services, such as flood attenuation and water purification; • Riverine systems provide important ecological corridors for movement of faunal and floral species between large and intact natural areas; • Rehabilitation of rivers and wetlands can improve environmental quality of area; • Eastern portion of study area identified as North Coast Bushland, which is classified as a Vulnerable Ecosystem – environmental regulatory controls generally less than if area is identified as Endangered or Critically Endangered.</td>
<td>• Steepness of land limits extent and types of development; • Steepness of land and rivers limits linkages between areas and accessibility; • High flooding potential on low-lying, valley bottoms; • Development encroachment into riparian zone; • Western portion, below sub-station identified as priority area for conservation of Charaxes varanes (Pearl Charaxes butterfly) – development of this area has resulted in loss of critical habitat for this species; • Increased risk to development within 1:100 year floodline with climate change; • Borders onto sensitive environmental areas (i.e. D’MOSS) on all sides; • Increased stormwater runoff with increased industrial development; • Poor environmental controls on industrial discharges into Umhlatuzana River; • Alien invasive infestation in riparian zone of Umhlatuzana River; • Rapid growth of informal / unserviced</td>
</tr>
<tr>
<td>NODES / CORRIDORS</td>
<td>ENVIRONMENTAL OPPORTUNITIES</td>
<td>ENVIRONMENTAL CONSTRAINTS</td>
</tr>
<tr>
<td>-------------------</td>
<td>-----------------------------</td>
<td>---------------------------</td>
</tr>
<tr>
<td></td>
<td>sets on southern boundary;</td>
<td>Development encroachment into riparian zone;</td>
</tr>
<tr>
<td></td>
<td>Illegal dumping;</td>
<td>High flooding potential on low-lying, valley bottoms;</td>
</tr>
<tr>
<td></td>
<td>Western portion of study area identified as North Coast Grassland, which is classified as Critically Endangered Ecosystem – increased environmental regulatory controls within these areas.</td>
<td></td>
</tr>
</tbody>
</table>

**Mariann Industrial Park**
- Study area has already been earthworked and platformed – reduced impact on adjacent natural assets with development of remainder of node.
- Riverine systems offer scenic and attractive landscape, particularly along northern boundary;
- Riverine systems and wetlands provide important water-related ecosystem services, such as flood attenuation and water purification;
- Riverine systems provide important ecological corridors for movement of fauna and floras species between large and intact natural areas;
- Rehabilitation of rivers and wetlands can improve environmental quality of area.

**Milky Way (MR559)**
- Tree planting and landscaping can contribute to creation of green spine through Tshelimnyama;
- Scope for planting of fruit trees between houses – contribute to environmental quality of area and food security.
- Steepness of land limits extent of land available for residential, commercial and retail land uses;
- Increased risk to houses built on slope greater than 1:3;
- Steep slopes limit linkages and accessibility;
- Soils generally poor for pit latrines and septic tank systems – non-point source pollution of rivers and wetlands;
- Moderate erodibility of soils;
- Competition between retention of bushland and urban development needs;
- Rapid growth in un-serviced informal settlements;
- Inadequate stormwater control with increased informal urbanisation;
- Illegal dumping;
- Littering;
- Alien invasive infestation in riparian zones;
- High levels of natural resource harvesting (e.g. fuelwood).

**Old Richmond Rd (MR518)**
- Riverine systems offer scenic and attractive landscape;
- Steepness of land has limited transformation of bushland and riverine systems – important contribution to D’MOSS;
- Riverine systems and wetlands provide important water-related ecosystem services, such as flood attenuation and water purification;
- Riverine systems provide important ecological corridors for movement of faunal and floral species between large and intact natural areas;
- Rehabilitation of rivers and wetlands can improve environmental quality of area;
- Steepness of land limits extent of land available for residential, commercial and retail land uses;
- Increased risk to houses built on slope greater than 1:3;
- Steep slopes limit linkages and accessibility;
- Numerous infrastructure crossings of rives impact negatively on ecological connectivity (e.g. roads, rail etc.);
- Soils generally poor for pit latrines and septic tank systems – non-point source pollution of rivers and wetlands;
- Moderate erodibility of soils;
6 NODES / CORRIDORS

- Tree planting and landscaping can contribute to creation of green spine through Tshelimnya;
- Scope for planting of fruit trees between houses – contribute to environmental quality of area and food security.

6 ENVIRONMENTAL OPPORTUNITIES

- Competition between retention of bushland and urban development needs;
- Rapid growth in un-serviced informal settlements;
- Inadequate stormwater control with increased informal urbanisation;
- Illegal dumping;
- Littering;
- Alien invasive infestation in riparian zones and bushland areas;
- High levels of natural resource harvesting (e.g. fuelwood);
- Illegal sand mining operations.

6 ENVIRONMENTAL CONSTRAINTS


6 SOCIO-ECONOMIC ASSESSMENT

6.1 PINETOWN SOUTH DEMOGRAPHIC PROFILE

This section provides information on the demographic profile of the local economy. The section covers aspects of population size, population growth, racial profile, age profile, gender profile, level of education, income and expenditure, general living standards and other socio-economic indicators. This provides insight into the socio-economic fabric of the area.

6.1.1 POPULATION SIZE

Table 7: Population Size of Pinetown South (2011 Census)

<table>
<thead>
<tr>
<th>Ward Number</th>
<th>Population</th>
<th>Households</th>
<th>Household Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>27055</td>
<td>5611</td>
<td>4.8</td>
</tr>
<tr>
<td>13</td>
<td>35708</td>
<td>8945</td>
<td>4.0</td>
</tr>
<tr>
<td>14</td>
<td>26829</td>
<td>7758</td>
<td>3.5</td>
</tr>
<tr>
<td>15</td>
<td>39344</td>
<td>11892</td>
<td>3.3</td>
</tr>
<tr>
<td>16</td>
<td>36576</td>
<td>11412</td>
<td>3.2</td>
</tr>
<tr>
<td>17</td>
<td>36731</td>
<td>10101</td>
<td>3.6</td>
</tr>
<tr>
<td>63</td>
<td>34023</td>
<td>10537</td>
<td>3.2</td>
</tr>
<tr>
<td>71</td>
<td>36394</td>
<td>12236</td>
<td>3.0</td>
</tr>
<tr>
<td>72</td>
<td>39324</td>
<td>10977</td>
<td>3.6</td>
</tr>
<tr>
<td>Total</td>
<td>311984</td>
<td>89469</td>
<td>Average 3.6</td>
</tr>
</tbody>
</table>

Source: Stats SA Census, 2011

Findings:

The study area consists of 9 wards with approximately 311984 people residing in Pinetown South, with a total of 89469 households.

- The average household size of Pinetown South is approximately 3.6 people per household.
Findings:

- The greatest concentration of people is in Wards 63, 71 and 72. These contribute collectively to 71% of the study area. The remaining wards each contribute to 6% or less of the total population in the Pinetown South area.

From the figure above, it is evident that the greatest percentage age group is the 20-29 year old grouping. There has been an increase from 2001 to 2011 within the 20-29 year group. In fact the working population is normally in the range of 20-59, and the figure above shows that this is also the portion of the graph that has the greatest concentration of people.
6.1.2 RACIAL PROFILE

Figure 24: Racial Profile

Source: Stats SA Census, 2011

Findings:

- Pinetown South reflects a predominant segment of African Blacks (69%). This is followed by an Indian/Asian population segment (22%), White population segment (6%), Coloured population segment (2%) and other population segment (1%).

6.1.3 LEVEL OF EDUCATION

The highest level of education serves as proxy for human development within the consumer market. The level of employment is also an important indicator, impacting on the level of human development as well as on the level of disposable community income.

Figure 25: Level of Education

Source: Stats SA Census, 2011
Figure 26: Level of Education

Findings:

- Given the level of education it is evident that the largest segment of the population has obtained Grade 12 or some secondary education.
- Pinetown South reflected the following level of education:
  - No schooling: 3.23%
  - Some Primary Education: 18.97%
  - Primary Education Finished: 4.24%
  - Some Secondary Education: 29.99%
  - Grade 12: 25.91%
  - Higher Education: 17.67%.

From the level of education per ward; it is evident that a small percentage of the population (under 1%) received no schooling in all wards. The highest percentage of education (3.08%) above Grade 12 (in Higher Education) appear to be in Ward 16, which include the areas of: Caversham Glen, Nazareth, Umshini, St Wendolins Ridge and Moseley Park. The figure below compares the education levels of Pinetown South with those of the general Ethekwini area.

Source: Stats SA Census: 2011
Findings:
- Pinetown fares better than Ethekwini in terms of the percentage of individuals who have completed secondary education and higher – (more than double the proportion of individuals who have completed secondary).
- However the proportion of individuals with primary education (4%) is a significant cause for concern.

Greater efforts may thus be needed in terms of Early Childhood Education interventions.

### 6.1.4 Age Profile

Figure 28: Age Profile, 2001 And 2011

<table>
<thead>
<tr>
<th>Year</th>
<th>0_9</th>
<th>10_19</th>
<th>20_29</th>
<th>30_39</th>
<th>40_49</th>
<th>50_59</th>
<th>60_69</th>
<th>70_120</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001</td>
<td>18.39</td>
<td>20.16</td>
<td>20.02</td>
<td>16.70</td>
<td>11.45</td>
<td>7.31</td>
<td>3.89</td>
<td>2.08</td>
</tr>
<tr>
<td>2011</td>
<td>17.56</td>
<td>17.01</td>
<td>22.66</td>
<td>16.26</td>
<td>11.70</td>
<td>7.64</td>
<td>4.59</td>
<td>2.57</td>
</tr>
</tbody>
</table>

Source: Stats SA Census:2001 & 2011
Findings:

It is evident that according to the Age profile figure and table, there has been a significant increase from 2001 to 2011 in the 20 to 29 year age group however as can be seen in table 8, when considering the percentage of the total population in 2001 and 2011, the increase only equates to 2.64%.

- The 2001 census indicates that the 10-19 and 20-29 year old segment is the largest age category, both above 20% of the population, followed by the 0-9 age category (18.39%) and then the 30-39 year group.
- The year 2011 indicates a different image, one that has the 20-29 year category as the largest population segment (22.66%), followed by the 0-9 year category (17.56%), then the 10-19 year category (17.01%) and the 4 th largest segment being the 30-39 year category (16.26%).

It appears that there has been a decline from 2001 to 2011 in the 0-9, 10-19 and 30-39 age categories.

### 6.1.5 Household Income and Employment

Average household income is a direct indicator of consumer demand for a broad spectrum of economic goods and services – such as housing and the quantity of additional floor space that could be sustained by a given consumer market.

Average household income, to an extent, also reflects the living standard of a household, and influences aspects such as asset ownership. Figure 27 illustrates the annual household income profile of the local municipal population.

**Figure 29: Average Annual Household Income**

<table>
<thead>
<tr>
<th>Income Level</th>
<th>No_Inc</th>
<th>Inc</th>
<th>Unspec</th>
<th>Inc_NA</th>
<th>R400</th>
<th>R800</th>
<th>R1600</th>
<th>R3200</th>
<th>R6400</th>
<th>R12800</th>
<th>&lt; R204800</th>
</tr>
</thead>
<tbody>
<tr>
<td>No_Inc</td>
<td>40.92</td>
<td>11.23</td>
<td>0.55</td>
<td>11.46</td>
<td>3.28</td>
<td>10.29</td>
<td>7.62</td>
<td>5.65</td>
<td>4.54</td>
<td>3.13</td>
<td>1.00</td>
</tr>
<tr>
<td>Inc</td>
<td>0.16</td>
<td>0.10</td>
<td>0.07</td>
<td>&lt; 0.07</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Unspec</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
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<td>0.00</td>
<td>0.00</td>
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<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Inc_NA</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
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<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
</tbody>
</table>

**Source:** Stats SA Census: 2011

**Findings:**

- The highest percentage within the income grouping indicates that 40.92 percent of people in the study area receive no income.
- 11.23 percent have unspecified income, whilst 0.55 percent has Income that’s not applicable.
- In terms of income that is labelled, as in the amount in Rands, it appears that the greatest percentage of people (11.46%) earn R400, whilst the next highest percentage appear to be the R1600 grouping, accounting for 10.29 percent.

As a result, while Figure 25 reflected that the majority of the population (55.48%) of the population is working age, these individuals are for the most part not earning an income.
The household's income according to income thresholds shows that the majority of the Pinetown South population is living in poverty – with 88% classified as poor; 0.33% in the middle income group; and 0% regarded as affluent according to the 2011 Bureau of Market Research (BMR) income thresholds.

### 6.1.6 Employment

Out of the total population, 265,465 people are in employed whilst 46,520 are unemployed. From a percentage point of view 85.09% are employed while 14.91% fall in the unemployment category. STATS Census categorizes the all employed as those that are employed or Employed-other. Unemployed is defined as those that discouraged or unemployed.

According to the 2011 census, in eThekwini 47% of the population was employed, and 53% were not employed. It is important to note that of those who were unemployed some were classified as “not economically active”; “unemployed”; and “not applicable for unemployment”. As a result, not everyone who is not “employed” is necessarily searching for a job, or discouraged. Of the 53% who were not employed, only 25% were classified as unemployed. Figure 28 below shows the employment by status for eThekwini and Pinetown during 2001 and 2011.

Figure 30: eThekwini vs Pinetown South Employment by Status
Although there has been an increase in population, and therefore the amount of people able and willing to work, the percentage of people employed in eThekwini remains almost the same. There are thus a number of new entrants in the labour market failing to secure employment opportunities. This is reflected in a new employment status indicator introduced in the 2011 employment statistics, ‘discouraged workers’. These are people who are “not actively seeking employment or do not find employment after long-term unemployment”. This is usually because individuals have given up looking or have had no success in finding a job, hence the term “discouraged”. This figure was 8% (338 000 people) in eThekwini and 6% (8 310 people) in Pinetown South.

It must also be remembered that many of the “not economically active” population in both cases could be involved in the informal sector.

Overall Pinetown South fares better than its eThekwini counterparts in terms of employment opportunities. Between 2001 and 2011 Pinetown South’s employment rate increased by an impressive 18 percentage points (from 46% to 64%) while employment in eThekwini actually decreased by one percentage point. Pinetown South’s unemployment rate although very similar to that of eThekwini, had reduced 10 percentage points from 35% in 2001 to 26% in 2011. Thus although it is similar to that of eThekwini, new entrants in Pinetown South are more likely to secure employment opportunities in Pinetown South.

The significantly high employment levels can be attributed to the high levels of secondary and higher education attainment in the region. With high levels of education, individuals are highly employable and can access employment opportunities available in the area.

Figure 31: Employment

From the total population, it appears that 265465 are in employment whilst 46520 are unemployed. In terms of percentage 85.09% is employed while 14.91% fall in the unemployment category. STATS Census categorizes the all employed as those that are employed or Employed- other. Unemployed is defined as those that discouraged or unemployed.
Table 9: Employment Percentage

<table>
<thead>
<tr>
<th>Ward Number</th>
<th>All Employed</th>
<th>All Unemployed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ward 12</td>
<td>6.84</td>
<td>1.83</td>
</tr>
<tr>
<td>Ward 13</td>
<td>9.38</td>
<td>2.07</td>
</tr>
<tr>
<td>Ward 14</td>
<td>7.04</td>
<td>1.55</td>
</tr>
<tr>
<td>Ward 15</td>
<td>10.07</td>
<td>2.54</td>
</tr>
<tr>
<td>Ward 16</td>
<td>10.36</td>
<td>1.36</td>
</tr>
<tr>
<td>Ward 17</td>
<td>10.02</td>
<td>1.76</td>
</tr>
<tr>
<td>Ward 63</td>
<td>10.30</td>
<td>0.60</td>
</tr>
<tr>
<td>Ward 71</td>
<td>10.24</td>
<td>1.42</td>
</tr>
<tr>
<td>Ward 72</td>
<td>10.83</td>
<td>1.77</td>
</tr>
<tr>
<td>Average</td>
<td>9.78</td>
<td>1.63</td>
</tr>
</tbody>
</table>

Source: Stats SA Census: 2011

The average employment for all wards is 9.78% of the total population, while the unemployment average percentage is 1.63%.

Focusing on the employment of the population, one can take a closer look at the breakdown of the employed labour by the industry.

A key indicator is the amount of labour remuneration assigned to each sector. In eThekwini the community sector contributes 32% of the all local labour remuneration. The two sectors that hold eThekwini’s comparative advantage, “transport, storage and communications” and “manufacturing” contribute 9% and 2% of all labour remuneration respectively. Table 10 below shows the spread of employment across eThekwini by type and number of jobs in 2001.

Table 10: Key Employment Contributors Per Economic Node

<table>
<thead>
<tr>
<th>Main Economic Nodes</th>
<th>Employment</th>
<th>Key Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Durban Central</td>
<td>137 000</td>
<td>Retail, Services, Offices, Conferences, Education, Tourism</td>
</tr>
<tr>
<td>Jacons/Mobeni</td>
<td>73 400</td>
<td>Mature industrial (Chemicals, Plastics, Confectionery, Textiles, Footwear, Packaging, Engineering)</td>
</tr>
<tr>
<td>Port of Durban/Maydon Wharf</td>
<td>35 000</td>
<td>Tourism, Freight, Logistics and Transport, Manufacturing, Engineering, Recreation</td>
</tr>
<tr>
<td>Pinetown/New Germany</td>
<td>52 200</td>
<td>Mature industrial (Textiles, Earthmoving, Beverages, Footwear Components, Electronics, Medical Goods)</td>
</tr>
<tr>
<td>Chatsworth</td>
<td>25 100</td>
<td>Retail, Services</td>
</tr>
<tr>
<td>Isipingo/Prospecton</td>
<td>21 000</td>
<td>Automotive, Food, Plastics, Carpets, Chemicals, Beverages, Transport, Distribution</td>
</tr>
<tr>
<td>Coedmore</td>
<td>14 200</td>
<td>Stone Quarry and Cement</td>
</tr>
<tr>
<td>Queensburg/Umhlatuzana</td>
<td>11 800</td>
<td>Small light to medium industrial – growth potential</td>
</tr>
<tr>
<td>Springfield Park</td>
<td>12 000</td>
<td>Light industrial, Retail</td>
</tr>
<tr>
<td>Waterfall Park</td>
<td>10 400</td>
<td>Fresh Produce Retail, Services</td>
</tr>
<tr>
<td>Glen Anil/Avoca</td>
<td>10 000</td>
<td>Light Industrial (building materials, White Goods Distribution, Plastics, Furniture)</td>
</tr>
</tbody>
</table>

Source: http://www.dipa.co.za

The Pinetown/New Germany area employed approximately 52 200 people in the Mature industrial (Textiles, Earthmoving, Beverages, Footwear Components, Electronics, Medical Goods) sector. As such it is the 3rd largest...
area of employment in eThekwini out of the 11 areas identified, providing 13% of the EThekwini’s employment in these terms.

Sector information specific to the Pinetown South area was unavailable during the time of this project.

6.1.7 Pinetown South Socio-economic Trends

Table 11: Pinetown South Socio-Economic Trends

| The local economy and socio-economic status of its communities is threatened by the high proportions of poverty. Approximately 60% of households remain below the poverty line |
| Low-income residential housing located in the Pinetown South area |
| Household dependency ratios and employment dependency is on the increase as fewer youth enter the labour market and additional people enter retirement |
| Income generation in the informal sector is relatively important whereby for every 4 formal sector jobs there are at least 1 informal sector job opportunity |
| Infrastructure limitations to economic expansion |
| Poor transport linkage between certain economic zones and installations |
| Decline in labour intensive industrial sectors (e.g. textiles, clothing, footwear), associated with shedding of jobs |
| There are however few industrial business operating in the South, which of course impact positively on job creation and level of sustainability |
| There is notable growth of the Western metropolitan corridor of Pinetown, the South is currently struggling and there is limited economic activity within residential suburbs. |
| Efforts must be directed towards encouraging the development of a range of industrial activity concentrating on micro industries around the existing industrial hives along existing activity corridors and particularly the old brownfield sites |
| Encouraging the development of both large formal and small/micro industries |
| There is a greatest dire need to upgrade facilities and infrastructure in the Pinetown South areas so as to improve overall quality of socio-economic living for the residents |
| Land demands for expansion, and associated infrastructure requirements |

6.1.8 Economic and Spatial Impacts

Table 12: Economic and Spatial Impacts

Pinetown South residents are perpetually facing long home to work journeys which imposes travel costs upon them, jobs are located in the core Pinetown CBD, New Germany, Durban CBD, compounding this is the fact that public transport is not efficiency to accomplish connectivity and rapid movement.

This has largely produced a reversed spatial planning reality of MONOTONOUS residential, there is lack of economic infrastructure and this has barred the development of mixed use environments and reinforced dependence on key nodes that are centrally located.

Sprawl that raises the unit cost of servicing and infrastructure reinforces the imperative to commute, but precludes the efficient operation of public transport systems, this has massive impact of economic well-being of Pinetown South residents.

6.1.9 Summary of Economic Conditions

From the situational analysis the following points are important for the next stage of this project:

- The majority of the population (93%) consists of previously disadvantaged individuals.
- The majority of the population is working age population
- The level of education of the population in Pinetown is fairly high relative to that of the province, with 44% of the population having attained secondary education or higher and this figure rising to 74% if individuals who have completed some secondary education are included.
• However low levels of primary education still to be completed indicate that some intervention may be needed in terms of Early Childhood Education to enable more of the current children to successfully complete their primary education
• Very low levels of household income are a cause for concern, with 88% of the Pinetown South population classified as poor and 0.33% as middle income earners, and 0% affluent in the region.
• Employment levels were high relative to those of the greater Ethekwini region. However despite the apparent high levels of education, the unemployed have very low levels of income. More analysis needs to be made as to why as this is the case and appropriate interventions taken.
• Lack of information on the Pinetown South region was a limitation in the depth of information gained from the economic analysis.

6.1.10 ACCESS TO SOCIAL FACILITIES

Pinetown South’s historical legacy indicates that the study area was essentially composed of dormitory townships. These townships were subjected to fragmented decision-making and planning practices which were not conducive to the advancement of an integrated and sustainable development. The Social Facilities Maps in the following pages provides an illustration of the locality of various social facilities within the Study area. These facilities include:

• Educational facilities
• Medical facilities
• Places of worships
• Sports facilities
• Community centres
• Police stations
• Fire stations

The above social facilities have been provided throughout the study area, however there seems to be gaps in the distribution of these facilities. The north western portion of the study area including Tshelimnyama, Tollgate South and Mpola are void of any educational facilities. Most pupils travel longer distances to reach the nearest educational facilities. A distinctive characteristic of these areas is the topography (hilly), which makes it very difficult to construct schools in the area.
Map 29: Distance to primary school

Map 30: Distance to nearest primary school
Map 31: Distance to nearest secondary school

Map 32: Distance to Tertiary facilities
Map 33: Distance to the nearest LSEN schools

Map 34: Distance to nearest medical centre
Map 35: Distance to nearest community centre

Map 36: Distance to the nearest fire station
7 HOUSING OVERVIEW

7.1 INTRODUCTION
The primary purpose of the Housing Overview is to provide an analysis of the previous residential / housing studies and the current status of the Pinetown South residential sector. This section also outlines the current housing vision, the emerging housing issues and housing opportunities that have been identified within the study area. Relevant legislation, policies and programs that were used to draw up the Housing chapter in the Integrated Development Plan included:

• National and provincial legislation, policies and programs relevant to housing

• Municipal sector plans, strategies, and programs

7.2 RELEVANT LEGISLATION

7.2.1 The Constitution
There are numerous references in the Constitution [9] to the rights of citizens to live in sustainable human settlements. The main references are:

• Every citizen has the right to ... reside anywhere in the Republic.\(^1\)
• Everyone has the right to have access to adequate housing. The state must take reasonable legislative and other measures, within its available resources, to achieve the progressive realisation of this right.\(^2\)

No one may be evicted from their home, or have their home demolished, without an order of court

7.2.2 The National Housing Act of 1997
The Housing Act of 1997 lays out the principles of housing policy in the country and defines the roles and responsibilities of all spheres of government.

7.2.3 The KZN Provincial Housing Legislation
While the KZN Housing Act reflects closely the National Housing Act the KwaZulu-Natal Elimination and Prevention of Re-Emergence of Slums Act of 2007 is highlighted because it focuses specifically on informal settlements and the progressive elimination of slums.

7.2.4 The Housing Sector Plan
In terms of the National Housing Act, all municipalities must take all reasonable steps (as part of its process of integrated development planning) to ensure that all of its inhabitants within its area of jurisdiction have access to adequate housing by:

• Setting housing delivery goals
• Identifying suitable land for housing development
• Planning, facilitating, initiating and coordinating housing development in its area of jurisdiction
• Draft a Housing Sector Plan also referred to as the Housing Chapter of the IDP.


7.3 TRENDS IN HOUSING SUB-MARKETS IN ETHEKWINI

The following sub-markets are defined:

- **LOW-INCOME HOUSING**: informal, traditional, rental or individual ownership of serviced or un-serviced dwelling units by low-income households with incomes under R 3 500 p.m. Single sex hostels are also part of the low-income market.
- **AFFORDABLE HOUSING**: rental or individual ownership tenure over fully serviced dwelling units by households with incomes from R 3,500 to R 15,000 p.m. It includes the so-called “Gap market”, of households who earn from R 7,500 to R 15,000 p.m. The term ‘gap’ derives from the absence of subsidies for these households, the virtual absence of available housing stock, and the thin availability of bond finance.
- **MID-MARKET AND UP-MARKET HOUSING**: rental or individual ownership tenure over fully serviced dwelling units by households with incomes over R 15,000 p.m.
- **SOCIAL HOUSING**: subsidised rental tenure over fully serviced dwelling units for households with incomes from R 1,500 to R 7,500 p.m. There are differing views as to whether social housing is a housing program or a housing market. In this paper the term is used for the housing program that addresses, in a limited way, the low-income and affordable rental markets.

7.3.1 HOUSING BACKLOGS

According to the 2007 statistics available in terms of housing count, there are backlogs in terms of housing delivery. The housing backlogs have been defined into three types, that is:

- Dwellings in Informal Settlements
- Dwellings in Informal Settlements + Informal Dwellings in Backyards
- Dwellings in Informal Settlements and Informal Dwellings in Backyards + Traditional Dwellings

The delivery scenario according to the eHSP indicates that the above backlogs will be eradicated by the year 2040.

The obstacles or constraints that are being experienced include:

- Regulatory Obstacles: EIA’s and Town Planning requirements
- Land Acquisition Obstacles: Competition to acquiring vacant land
- Funding Constraints: cost implications with regard to infrastructure
- Obstacles to Densification: dealing with innate perceptions by individuals in having single households and construction costs that are applicable to densification.

EThekwini Municipality is presently undertaking Densification Projects, some pilot projects include trying to promote housing density at about 50-100 Housing Units per hectare. City wide densification is a means of attempting to restructure the city into a more compact model.

7.3.2 HOUSING DELIVERY TRENDS AND CHALLENGES

According to the EThekwini Housing Sector Plan (2012) the main trends in housing supply have indicated that:

- The formal market is not spontaneously providing dwellings in sufficient number or of adequate quality or in optimal locations for the low-income sub-market [1] or the affordable sub-market [2].
- The degree to which the formal market fails the low-income sub-market is extreme.
- The focus of publicly funded housing has been on the low-income sub-market.
• The main outcomes have been free standing houses coupled with individual freehold title, transfer of state owned rental stock to tenants, and some hostel upgrades coupled with rental tenure.
• 80% of new housing projects have been implemented within the Urban Development Line (UDL).
• The market is spontaneously providing dwellings in sufficient number, of adequate quality and in the optimal locations for the middle and upper-income markets.
• There is significant demand for rental stock. Research estimates are that 33% of households in eThekwini live in rented accommodation, many of them in inadequate human settlements. Demand is estimated to increase for another 19,000 rental dwellings, and the greatest share of this demand will be by low-income households.

Urbanisation in the eThekwini Municipality has also resulted in increased demand for low income housing to medium income housing. This increased demand has also given rise to mushrooming informal settlements. The housing challenge faced by the municipality has been further compounded by a shortage of well located and affordable land for the development of government subsidized housing. The size of the city, the locations of employment centres relative to residential centres, the need to develop a viable public transport system and to achieve urban efficiencies require new housing to support a strategy of densification and compaction. However the current funding regime does not support a densification and compaction strategy.

7.3.3 SUMMARY OF THE IMPLICATIONS OF THE HOUSING POLICIES

The following are a summary of the implications of the housing policies as discussed:

• “The right to have access to adequate housing”, this means that this is a constitutional right that cannot be ignored.
• Housing policies offer a diversity of housing needs which cater for low income housing, rental / social housing, inclusionary housing promoting Breaking New Ground by creating communities that have social facilities and amenities.
• The consumer protection through the NHBRC guarantees quality of the product delivered in the subsidised market hence allowing the subsidised to become an asset that a beneficiary can use as surety with banks.
• As a developer the municipality has the responsibility of making sure that they secure strategically located land for housing.

7.4 CURRENT HOUSING VISION AND MISSION

According to the Integrated Housing Development Plan of the eThekwini Municipality the City’s Housing Vision and Mission which were developed back in 1999 as part of the Strategic Housing Framework for the eThekwini Municipality are still relevant and applicable as they were then.

7.4.1 HOUSING VISION

The creation of sustainable human settlements in the eThekwini Municipality with a view to ensuring that by the year 2015 all residents will have access to a housing opportunity which includes secure tenure, basic services and support achieving incremental housing improvement in living environments with requisite social, economic and physical infrastructure.

7.4.2 HOUSING MISSION

The Housing Mission of the City is to:

• Implement the Vision within the context of a sustainable and integrated development-planning framework.
• Achieve the annual delivery of at least 16 000 to 24 000 housing opportunities in the City.
• Establish housing as a lead sector in the economic and social government of the City.
• Ensure that the provision of housing opportunities and the development of balanced neighbourhoods’ will become part of a broader strategy to re-structure and transform the present sprawling and inequitable urban form into a more compact, integrated and accessible environment.
• Provide households of different interests and means with a range of tenure options and a variety of delivery systems, which will enable access to housing opportunities in an affordable and sustainable manner.

### 7.4.3 Housing Opportunities

The development of the Pinetown South area and the identified nodes should cater for the following categories:

- Low-income government subsidized market segment (units of 40m² priced up to subsidy level which is R61 380).
- First tier affordable housing market segment (unit 40m² – 79m² priced at R370 000 or less).
- Second tier affordable housing market segment (79m² – 100m² priced up to R500 000).
- Middle income housing market segment (100m² and upwards priced up to R900 000).
- Walk-up 4/5 storey flats.

### 7.4.4 Current Housing Projects

There are currently public housing projects planned within the directly project area, and 47 indicates housing projects in the central region, south, west and a small portion to the north of the project area. According to data, as per Map 47, from the EThekwini Human Settlements Department, there are 5 types of projects identified, that is: Greenfields, Hostels, Insitu Upgrades, Rural Housing and Relocation. According to this data the housing comments have been divided into Complete, Progress Place and To be Constructed and the Housing status as, Approved. Table 29 details the Housing Plan for Pinetown South, by providing the project name, project type, area to be planned, ward numbers, region, estimated houses, status of project and area (size) of project. As per Housing plan table and Map, there are currently 12 Greenfield Projects, 12 Relocation Projects, 1 rural project and 1 Hostel project.
### Table 13: Pinetown South Housing Plan

<table>
<thead>
<tr>
<th>PROJECT_NAME</th>
<th>PRJTYPE</th>
<th>PLAN_UNITS</th>
<th>WARDS</th>
<th>REGIONS</th>
<th>EST HHS</th>
<th>K2NDHS STAT</th>
<th>COMMENTS/ PRJ TIME FRAME</th>
<th>SHAPE_Area (m²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bhekisiwe Thornwood</td>
<td>Greenfields</td>
<td>Thornwood / Madiba Valley</td>
<td>14</td>
<td>Western</td>
<td>500</td>
<td>Approved</td>
<td>Complete</td>
<td>251486</td>
</tr>
<tr>
<td>Bottlebrush Greenfield</td>
<td>Greenfields</td>
<td>Demat / Savannah Park</td>
<td>72 / 17</td>
<td>Western</td>
<td>0</td>
<td>Approved</td>
<td>Proposed-Progress place, Demat, part of Katshi are incorporated within</td>
<td>0</td>
</tr>
<tr>
<td>Insizwakazi</td>
<td>Greenfields</td>
<td>Intake</td>
<td>17 / 13</td>
<td>Western</td>
<td>500</td>
<td>Approved</td>
<td></td>
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<td>Lusaka</td>
<td>Greenfields</td>
<td>Moorten</td>
<td>72</td>
<td>Southern</td>
<td>250</td>
<td>Approved</td>
<td>Complete</td>
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<td>Marianridge development</td>
<td>Greenfields</td>
<td>Marianridge</td>
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<td>Savanna Park</td>
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<td>Mazakhele</td>
<td>Greenfields</td>
<td>Marianridge</td>
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<td>Western</td>
<td>68</td>
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<td>Complete</td>
<td>52814</td>
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<tr>
<td>Nazareth Island &amp; Gcibe</td>
<td>Greenfields</td>
<td>AMT Industrial /Nazaerth</td>
<td>16</td>
<td>Western</td>
<td>760</td>
<td>Approved</td>
<td>Complete</td>
<td>1492467</td>
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<tr>
<td>Savanna Park Phase 1 Stage 3</td>
<td>Greenfields</td>
<td>Savanna Park / St Wendolins</td>
<td>17</td>
<td>Western</td>
<td>463</td>
<td>Approved</td>
<td></td>
<td>361564</td>
</tr>
<tr>
<td>Tshelimnyama Phase 3</td>
<td>Greenfields</td>
<td>Tolgate / Tshelimnyama -mpola</td>
<td>15</td>
<td>Western</td>
<td>1220</td>
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<tr>
<td>Welbedagt West</td>
<td>Greenfields</td>
<td>Demat / Welbedacht / Inwabi</td>
<td>72 / 77</td>
<td>Western</td>
<td>2933</td>
<td>Approved</td>
<td>08/2013: 2855 Houses complete. 55 houses still to be constructed</td>
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<tr>
<td>Welbedgat West phase 1</td>
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<td>Western</td>
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<td>Hostel - Klaarwater</td>
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<td>Dassenhoek Rural /Thornwood</td>
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<td>1008063</td>
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<td>Coffee Farm (Sandton) phase 1</td>
<td>Insitu Upgrade</td>
<td>Kwandengezi / Dassenhoek Rural</td>
<td>12</td>
<td>Western</td>
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### 7.4.5 Objectives Of Restructuring

Restructuring via social housing seeks to achieve three main dimensions of restructuring:

- **Spatial restructuring** by bringing lower income (and often black) people into areas where there are major economic opportunities (both with respect to jobs and consumption) and from which they would otherwise be excluded because of the dynamics of the land market on the one hand and the effects of land use planning instruments such as large-lot zoning (minimum erf sizes) on the other. Indirectly social housing as understood here contributes to spatial restructuring by increasing densities and compacting growth thereby ensuring that the poor are not pushed out to marginal locations at the edge of the city.
- **Social restructuring** by promoting a mix of race and classes.
- **Economic restructuring** by promoting spatial access to economic opportunity and promoting job creation via the multiplier effect associated with building medium density housing stock.

Ideally a restructuring zone should be motivated on the basis that it contributes to all three types of restructuring.

A new grant for metropolitan municipalities was introduced in the 2013/14 national budget. The Integrated City Development Grant (ICDG) provides incentives for participating municipalities to identify and establish integration zones within cities, including the establishment of measurable performance objectives, indicators and targets. The ICDG will also provide a strategic focal point for improved intergovernmental coordination, both within and between spheres of government. The objective of the ICDG is to support the development of more inclusive, liveable, productive and sustainable urban built environments in metropolitan municipalities. The grant provides a financial incentive for metropolitan municipalities to integrate and focus their use of available infrastructure investment and regulatory instruments to achieve a more compact urban spatial form.

In a South African context restructuring zones will often coincide with nodes and corridors of economic opportunity. Moreover as a general rule the townships will not be restructuring areas although almost all will be regeneration areas. Of course there may be economic nodes and corridors within or abutting townships which could qualify as restructuring areas.

### 8 SUMMARY OF ISSUES AND WAY FORWARD

In order to establish a tangible framework for the conceptualisation of the Pinetown South Local Area Plan during the next phase of the project, a number of emerging development issues will need to be considered and/or addressed as briefly highlighted in the sections below.

#### 8.1 Land Availability

From the environmental constraints already highlighted in previous sections, it is evident that although the total project areas has an extent of approximately 11909.80 Ha, when the areas affected by the various constraints are systematically subtracted from the total study area, 69% of the total area is deemed developable at first assessment.

As a number of the identified environmental encumbrances are defined and governed by national legislation, it is not anticipated that the findings will vary much during the study. However, EThekwini Municipality is currently conducting its own internal investigations into the localized nature of some of the identified environmental constraints and included within the final Local Area Plan.
## 8.1.1 ISSUES TO BE ADDRESSED

From the various sector inputs to the status quo report it is evident that there are few critical areas where tangible solutions will need to be formulated and negotiated during the following phases in order to unlock the potential for development and any other proposed land development within the project area. Following from both guidance from the higher order studies previously completed for the area, as well as the findings of the status quo investigations; the tables below provides a brief summary of the critical elements and issues which will need to be addressed during the further execution of the project.

## 8.2 ECONOMIC DEVELOPMENT CORE ISSUES

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<th>SECTOR</th>
<th>CORE ISSUE</th>
<th>IMPLICATIONS FOR PLANNING &amp; DESIGN</th>
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<td>ECONOMIC DEVELOPMENT</td>
<td>Lack of strategic economic development vision for Pinetown South.</td>
<td>A clear economic development vision should be established for the Study Area. The vision should feed into the debate on the economic development for the formerly disadvantaged sections of EThekweni.</td>
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<td>The future role of the Study Area in the regional economy</td>
<td>The future role of the Study Area will be a determining factor in decision-making around the location of industrial land, public transport, commercial and social service activities, this will guide future investment.</td>
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<td>There is a noted need to create an economic stimulus within the Pinetown South area.</td>
<td>The diversification of the local economy through the introduction of Industrial Potential, especially in support of other industrial activities found in Pinetown South should be explored.</td>
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<td>Limited job opportunities within a 10 kilometre radius of the Study Area.</td>
<td>Economic development opportunities in a variety of viable sectors should be considered.</td>
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<td>Economic development opportunities around the Industrial areas like Westmead and Marian Ridge Industrial Park must be considered.</td>
<td>Opportunities relating to the densification and optimisation of the Industrial areas must be investigated and accommodated in the Local Area Plan.</td>
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<td>Focus needed on improving quality of housing in traditional settlement areas in and surrounding Study Area.</td>
<td>Identify priority areas for upgrading of rural housing and infrastructure.</td>
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<td>Regional and Localised Economic Opportunities</td>
<td>Apart from the intention to establish a higher-order economic development within the Study Area, a focus must also be placed on protecting and growing local economic opportunities, and integrating these more effectively with the regional system.</td>
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<td>HOUSING</td>
<td>Limited social and government services available in the Study Area, mainly due to Past Planning practices.</td>
<td>Provide for the improvement of social and government services in and around the Study Area.</td>
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<td>SOCIO-ECONOMIC</td>
<td>The population within the Study Area will benefit from improved economic opportunities, as well as social and government service delivery in the Study Area.</td>
<td>When considering economic vision for the Study Area also consider the approaches to the improvement of service delivery</td>
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## 8.3 Spatial Planning Core Issues

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<td>Regional Restructuring Significance</td>
<td>The need for, and implications of, spatial restructuring in the Inner West Regional Context must be considered as a prelude to spatial intervention at the local level.</td>
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<td>Interface between formal urban and traditional peri-urban areas</td>
<td>Planning interventions within the Study Area must address the different roles served by the area, and must look beyond local boundaries and development trends.</td>
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<td>Disparate Administrative and Planning Context</td>
<td>Planning within the Study Area must respond to differing systems of administration (Municipal vs. National), yet seek to derive synergy for both systems through common spatial interventions.</td>
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<td>Strong Regional Connectivity</td>
<td>Need for balance between mobility needs of regional systems, and deriving developmental energies and opportunities from such systems.</td>
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<td>Under-developed District Connectivity</td>
<td>Need to strengthen district connector routes (MR 577 and MR 579) and reinforce their role in structuring development, not just within the study area, but also within the wider Pinetown area.</td>
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<td></td>
<td>Regional and Localised Economic Opportunities</td>
<td>Apart from the intention to establish a higher-order economic development within the Study Area, a focus must also be placed on protecting and growing local economic opportunities, and integrating these more effectively with the regional system.</td>
</tr>
</tbody>
</table>

## 8.4 Environmental Core Issues

<table>
<thead>
<tr>
<th>Sector</th>
<th>Core Issue</th>
<th>Implications for Planning &amp; Design</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Significant Regional Environmental Systems</td>
<td>Environmental systems must be reinforced as part of the spatial structuring systems guiding development, and reinforcing a positive relationship between built and unborn systems must become integral to intervening in the area.</td>
</tr>
<tr>
<td></td>
<td>Number of wetlands within the study area</td>
<td>Wetland Delineation and Functional Assessment will be required if an area containing a potential wetland is proposed for development. Exclusion of wetlands and buffer zones from development.</td>
</tr>
<tr>
<td></td>
<td>Poor condition of rivers / estuaries, associated riparian zones and cross catchment links</td>
<td>Rehabilitation program to be designed and budgeted for. Consideration need to be given to include valuable areas e.g. cross catchment link identified into DMOSS for protection (currently earmarked for housing development).</td>
</tr>
<tr>
<td></td>
<td>Regions containing natural vegetation in good / moderate health</td>
<td>No-go development zones (particularly associated with rivers and floodplain areas) will need to be identified and earmarked as such within the Local Area Plan.</td>
</tr>
<tr>
<td></td>
<td>D’MOSS and land use</td>
<td>All D’MOSS areas should be demarcated during planning and excluded from development or negotiated beforehand.</td>
</tr>
</tbody>
</table>
### 8.5 TRAFFIC AND TRANSPORT CORE ISSUES

<table>
<thead>
<tr>
<th>SECTOR</th>
<th>CORE ISSUE</th>
<th>IMPLICATIONS FOR PLANNING &amp; DESIGN</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Fragmented Local Movement and Accessibility</td>
<td>Local patterns of connectivity within the Study Area need to be strengthened, and a logical system of accessibility developed, particularly in the interface between formal and traditional settlement areas.</td>
</tr>
<tr>
<td></td>
<td>Road Alignment, Pavement and Intersection Capacities</td>
<td>The potential improvement of various road alignments, pavement and intersections in response to proposed land uses will need to be undertaken and considered as part of the Implementation Planning.</td>
</tr>
<tr>
<td></td>
<td>Relatively Poor Public Transport Accessibility</td>
<td>Improved public transport services access and improved service routes to be identified. This should align to the proposals from the Integrated Transport Plan and the Integrated Rapid Public Transport Network Implementation Plan.</td>
</tr>
<tr>
<td></td>
<td>Pedestrian Movement</td>
<td>Appropriate pedestrian amenities at high conflict zones</td>
</tr>
<tr>
<td></td>
<td>Regional Freight Movement</td>
<td>Clarify and define the regional freight function of rail and the implications for the study area. The linkage from Westmead and other Industrial nodes to the N3 and the proposed MR579 and its freight capabilities will also need to be addressed. Importance of freight with regard to Westmead and the M7 converging onto the N3 as a transit for freight.-</td>
</tr>
</tbody>
</table>

### 8.6 INFRASTRUCTURE CORE ISSUES

<table>
<thead>
<tr>
<th>SECTOR</th>
<th>CORE ISSUE</th>
<th>IMPLICATIONS FOR PLANNING &amp; DESIGN</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Bulk Water</td>
<td>Available infrastructure is currently adequate however in need of upgrade. Further development within the Study area will place pressure on the current infrastructure. The Western Aqueduct which is proposed to go on stream by 2016 may alleviate the current situation.</td>
</tr>
<tr>
<td></td>
<td>Inadequate Waste Water capacity.</td>
<td>A comprehensive regional strategy for the Waste Water is required in conjunction with localised (possibly on site) solutions for the study area.</td>
</tr>
<tr>
<td></td>
<td>Stormwater</td>
<td>The municipality requires all new developments to ensure that the post development flows emanating from the site are attenuated down to the 1 in 10 year and 1 in 50 year pre-development flows.</td>
</tr>
<tr>
<td></td>
<td>Electricity Capacity</td>
<td>Once the scope and category of proposed land uses and developments have been determined, an estimated electrical load needs to be communicated to the EThekwini Electricity Department to provide final assessments on available capacity.</td>
</tr>
<tr>
<td></td>
<td>Solid Waste Disposal</td>
<td>The Landfill site should have sufficient capacity for the development of the study area, but the volumes and nature of waste will need to be defined in order to assess suitability.</td>
</tr>
</tbody>
</table>
Section 2: Spatial Framework

As a result of the updated Status Quo; its findings and key issues identified and discussed with roleplayers, the broad development concept plan was formulated as described herein. The report provides a brief indication of the existing and potential regional functions of the Pinetown South area which is then translated into a series of associated development Goals and Objectives. These goals and objectives are further linked to performance criteria which guide the spatial development concept illustrated herein.

Each identified functional sub region is also described in terms of its potential land use accommodation and yields. The proposed associated land use controls and infrastructure implications for the development concept and each individual district will be addressed within the next phase of the study.

9 REGIONAL FUNCTIONS OF PINETOWN SOUTH

9.1 ROLE OF THE PINETOWN SOUTH AREA WITHIN THE REGION AND LARGER ETHEKWINI AREA

The eThekwini Municipality Spatial Development Framework (SDF) has identified Pinetown South as a Strategic Priority area. Currently the Pinetown South Area forms an integral part of the Metropolitan area and is well situated in relation to major industrial and employment centres. Pinetown is identified by the SDF as an Investment Opportunity Area. Pinetown South traditionally has been referred to as a dormitory Township and the Economic analysis within the Status Quo illustrates that the Pinetown South Area is has a low earning population. The linkage between Pinetown and Pinetown South offers opportunities to the earning population within Pinetown South that may improve in its economic status.

Pinetown South has four (4) regional functions which include: an industrial, commercial, residential and environmental function.

**The industrial function:** Pinetown has been identified within the Central Spatial Development Plan (CSDP) as an area that has existing Industrial nodes. These areas include Mariaan Industrial Park; the industrial hub for Durban is connected by higher order roads to the surrounding areas including the railway line which extends from Isipingo in the south to the northern residential areas of KwaMashu, Ntuzuma, Inanda and Phoenix in the north.

**The commercial function:** The commercial side of the Pinetown South area is divided into different services and specialized services. The specialized services include that of the manufacturing firms which produce and sell in bulks. Other commercial activities included that of retail stores, motor mechanics, warehousing, take-away’s, restaurants and general dealers. However, the existing commercial developments are in need of upgrading thereby acting as a catalyst to attract more investment. Appropriate development frameworks need to be established to guide the future development of the Pinetown South area. The informal commercial activities found within the Pinetown South area are relevant to improvement economic opportunities for the community. According to the Economic analysis, 1 informal job is created for every 4 formal jobs. Since the Pinetown South population is a low earning population, informal activity provides an avenue to supplement household incomes. Therefore, appropriate LED strategies and relevant actions needs to be identified to harness the emerging employment and convenience opportunities and to link appropriate activities into support and management mechanisms, to establish appropriate opportunities and manage existing and future formal commercial centres.

**Residential function:** the majority of the Pinetown South area has a residential function. The northern and eastern portion of the study area is composed of middle to high income housing, within areas like Queensburgh, Shallcross, Caversham Glen and Savanna Park. The southern and western areas, as well as the north western area
comprises of low to middle income housing. As per the status quo, a large portion of the Pinetown South area was once considered dormitory housing. Many of the housing upgrades in the area post 1994, were either in-situ upgrading or RDP type housing. A few Hostels, as well as Greenfield developments have also been developed, however these also belong to the low income groupings. Existing informal settlements within the project area are in dire need of upgrading.

**Environmental conservation function:** The Pinetown South area contains significant natural assets. This includes Marionwood, Roosfontein and North Park Nature Reserve, the Umlaas, Umhlatuzana, and Umbilo Rivers, wetlands, grasslands, and forest / woodland areas. It is acknowledged that these assets are not only important at a local level, but also at a provincial and national level, particularly the grasslands. These natural assets are not only important for conservation of biodiversity, but also for provision of ecosystem services, such as food, fibre and fuel, water purification, and natural hazard protection. There are three protected areas in Pinetown, namely North Park Nature Reserve, Marion Wood Nature Reserve and a portion of Roosfontein Nature Reserve. Only North Park Nature Reserve enjoys formal Protected Area status in terms of having been gazette under the National Environmental Management: Protected Areas Act (No. 57 of 2003). Note that the eThekwini Environmental Planning and Climate Protection Department is in the process of proclaiming the other two reserves as protected areas. Thus, in total some 106ha or less than 1% of the study area falls within formally protected and conservation areas. The Marianhill Landfill Site (which includes the buffer area) is registered as an urban conservancy.

Figure 32: Regional and Local Functions of Pinetown South

![Diagram of regional and local functions of Pinetown South](image)

The diagram above further identifies other regional and local functions within the Pinetown South area.

**Regional Accessibility:** The study area for the Pinetown South LAP is located in the Inner West area of eThekwini Municipality, which falls under the Central region. It includes ward 12, 13,14,15,16,17,61,72 and73. At a regional level, access to the study area is provided by the N3, which runs through the Northern portion of the study area. The road network within the study area is heterogeneous and comprises of roads with different classifications, cross sections and ownership. The east-west links provide mobility and access to the study area, whilst the north-south links are limited to providing mobility. Accessibility in the north-south direction is limited. The following five major transport routes exist within the Pinetown South study boundary: National Route 3 (N3); MR85/M1/
Richmond Road; MR559/ Milky Way; M34/ Hans Dettman Highway and the MR518/MR468/ Old Richmond Road. The N3 between Durban and Gauteng runs in an east west direction at the northern part of the study area providing regional accessibility. M1 and M7 serve as the regional mobility routes. MR85 (M1) links Pinetown with the southern portion of eThekwini via the Higginson Highway, providing the major access road between the study area and Pinetown. MR468 (Old Richmond Road) and Wiltshire Road provide a high level of accessibility in an east-west direction. M1, M34 and M48 provide a high level of mobility within the study boundary. Internal circulation is supported by MR518, St Wendolins Road, and Umhlatuzana Road etc.

Manufacturing/industrial Hub: The study area includes key industrial areas like: Westmead Industrial Park, Marian Industrial Park and the Wiltshire Road Industrial area. The industrial areas, cater for logistics, chemical processing, plastic manufacturing, dairy milk production (Clover) , packaging (NAMPAK), brick and block making and trailer manufacturing, to name but a few. There is a need for alignment between the economic opportunities created and provision of housing for the future housing developments.

Regional Infrastructure Facilities: The city is growing continuously and requires regional infrastructure solutions for water, sanitation, energy and waste especially. The compacted nature of a metropolitan city often does not allow for large scale regional facilities to be developed and hence, where such land is available, it needs to accommodate and reserve land for future regional infrastructure facilities which serve the larger needs of the city, beyond just the local area. Comments from the water and sanitation department at eThekwini Municipality intimate that all infrastructure including pump stations are in need of upgrade. The Treatment Works for the study area have no spare capacity, therefore all new developments within the area need additional infrastructure. The Western Aqueduct which should come on line in 2016/2017 may alleviate the issues surrounding water supply in the area, however there are areas like Mpola and KwaLinda that do not have adequate water provision. Stormwater in the study area is a cause for concern, since the inappropriate developments (expansion of properties outside their boundaries and along cliff edges) that take place, especially in areas where there is insufficient stormwater infrastructure creates problems with regard to river water quality and pollution. Furthermore, in terms of stormwater, the Municipality has not captured all stormwater infrastructure therefore the Geographic Information Systems data is incomplete.

Environmental Services: The environmental service provided by the natural environment and the DMOSS areas have been well documented within the eThekwini Municipality. The significant wetlands and other protected reserves found within the study area thus contribute to the wider regional and local environmental services and would need to be protected and utilised as part of the regional function of the study area. River water quality is a cause for concern especially on those parts of the river that is closest to the Sewer Treatment Works. River water is contaminated and of low quality, which seems to be the result of untreated sewer running off from the sewer treatment works.

Tourism attraction: the North Park Nature Reserve and other reserves in close proximity to the study area as well as the Rivers and the Mariannhill Mission area, which includes the Monastery- Cathedral within the Pinetown South area offer tourism potential and opportunities to enhance tourism in the area. These areas need to be well defined and upgraded to enhance their tourism potential, thereby acting as a catalyst for investment as well as creating opportunities for Local Economic Development and jobs.
9.2 DEVELOPMENT PRINCIPLES

The following provides an overview of principles, approaches and concepts forming the basis for the strategic assessment and the subsequent Spatial Development Concept for the Pinetown South LAP. While the IDP identifies a wide range of guiding principles, the following represents a selection of the most important guiding aspects:

- Promoting an Equitable City
- Promoting an Efficient City
- Promoting a Sustainable City

9.2.1 PROMOTING AN EQUITABLE CITY

- Reducing infrastructure and services 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
- Making the city work better for the disadvantaged

9.2.2 PROMOTING AN EFFICIENT CITY

- Promoting more compact development
- Reducing the separation between where people live and work
- Optimising development in areas of greatest opportunity
- Encouraging effective use of infrastructure and facilities
- Promoting cost effective movement systems
- Promoting accessibility through improving relationships between people, places and activities
- Promoting a well-managed spatial form

9.2.3 PROMOTING A SUSTAINABLE CITY

- Promoting optimal use of remaining land opportunities
- Promoting the inherent value of the natural and built environment and introducing environmentally sensitive management of development
- Alleviating environmental health hazards
- Promoting total living environments
- Retaining and enhancing positive qualities and productive assets of the eThekwini.

9.3 SPATIAL DEVELOPMENT DIRECTIVES

9.3.1 EMERGING SPATIAL STRUCTURE OF eTHEKWINI

The spatial structure of the eThekwini Municipal Area (EMA) is changing. Whereas previously the structure was focused primarily around the CBD and Port related South Durban Basin and the Pinetown New Germany node, the structure is reforming and new key strategic zones/hubs are emerging outside of these hubs on the outskirts of the Municipality. A per the eThekwini Municipality Spatial Development Framework (SDF), Pinetown South has identified as Strategic Priority area as well as an Investment area.

The EMA needs to provide for local residents in terms of lifestyle choices, residential opportunities and environmental and social amenity. The desirableness and attractiveness of the EMA as a destination of choice for doing business, for living and for visiting should be protected and enhanced. All of the above should be contemplated within a sustainable spatial and physical development framework that protects scarce resources i.e. environmental and agricultural assets.
As per Figure 2, the South Durban Basin and planned redevelopment of the old Durban International Airport site will serve as major investment hub within the southern portions of the Municipality and provides an opportunity in terms of employment for residents within the Pinetown South study area. Hans Dettman Road which adjoins the Higginson Highway allows the Pinetown South area to access opportunities in the South of Durban. The continued development within Pinetown and New Germany also serves as an accessible point for employment. Discussions with the Inner West Council suggests that there is increased activity in the Stockville area - an emerging Industrial Hub, which offers further opportunities for residents and the emerging Industrial enclaves in the Outer West, further provide opportunities for people in the Study area. Therefore, Old Richmond Road, Milkyway Road and Stockville Road all become important regional access and mobility routes.

The transportation, water and sanitation systems and their capacities will be greatly impacted on, and will greatly impact the future development and success of the above-mentioned areas. At a metropolitan and regional level, the linkage between the zones/hubs and service and employment zones is important for ensuring that regional and national imperatives with regards to logistics systems and networks operate efficiently. The EMA needs to provide for local residents in terms of lifestyle choices, residential opportunities and environmental and social amenity. The desirableness and attractiveness of the EMA as a destination of choice for doing business, for living and for visiting should be protected and enhanced.

All of the above should be contemplated within a sustainable spatial and physical development framework that protects scarce resources i.e. environmental and agricultural assets.

Figure 33: Emerging Spatial Structure of eThekwini
9.4 SPATIAL DEVELOPMENT CHALLENGES

9.4.1 TRANSPORT

Public Transport – Onsite site observations indicate: loading and off-loading of passengers at undesignated locations, illegal “car taxis”, informal taxi and unused taxi rank located at the corner of Milky Way/MR559 & Neptune Road.

Non Motorised Transport (NMT)- Inadequate pedestrian infrastructure along Richmond Road, Abbot Francis Road, Wiltshire Road, Hans Dettman Highway which were identified to be the core pedestrian movements; Scholars and pedestrians observed crossing busy streams of traffic along Richmond Road and Hans Dettman Highway.

Traffic Volumes and Network Operations- Queuing and congestion occurred at intersections including:
• Stockville Road/ Richmond Road
• Abbot Francis Road/ Richmond Road
• Old Richmond Road/ Richmond Road
• Higginson Highway/ Hans Dettman Highway
• Wiltshire Road/ Hans Dettman Highway

These were identified based on on-site observations and inspection of the 2015 60x60 matrices (see AM Peak Hour Volume and PM Peak Hour Volume map in chapter 13 of this report).

Accidents- The areas of greatest concern were identified to be:
• Stockville Road/ Richmond Road On N3 in the vicinity of the Toll Plaza
• Mariannhill Road/Henry Pennington Road/ Alexander Road/MR85
• N3/MR 85(North)
• Wiltshire Road/Milky Way
• Old Richmond Road/MR85
• Hans Dettman Highway/MR85/Facet Crescent

Accident Statistics for the study area were obtained from the ETA database for 2012 to 2014. The locations of these accident locations were spatially represented to determine where the current hotspots are (see accident stats map in chapter 13).

9.4.2 ENVIRONMENT

The Pinetown South study area contains significant natural assets. This includes Marionwood, Roosfontein and North Park Nature Reserves, the Umlaas, Umhlatuzana, and Umbilo Rivers, wetlands, grasslands, and forest / woodland areas. Paradise Valley Nature Reserve borders the Pinetown South study area in the west, and is the site of a flagship municipal project which is restoring ecological infrastructure as a climate change adaptation intervention. It is acknowledged that these natural assets are not only important at a local level, but also at a provincial and national level, particularly the grasslands. The following environment concerns were identified:

• Steepness of land limits extent of land available for residential, commercial and retail land uses;
• Increased risk to houses built on slope greater than 1:3;
• Steep slopes limit linkages and accessibility;
• Soils generally poor for pit latrines and septic tank systems – non-point source pollution of rivers and wetlands;
• Moderate erodibility of soils;
• Competition between retention of bushland and urban development needs;
• High flooding potential on low-lying, valley bottoms;
• Development encroachment into riparian zone;
• Umhlatuzana River traverses the study area.
9.4.3 Quality of Place

As part of the planning exercise of the project area the quality of urban environment, especially around the nodes will need to be considered. Apart from public realm conditions, the type of housing does not meet the needs and densities of the area. The housing provided has been monotonous and lacks qualities of good livable neighbourhoods. Current residential areas lack variety of housing typologies and activities resulting in a monotonous urban landscape not conducive to quality urban environments. The challenge is to bring into Pinetown South places of quality and places of choice. This would imply not only a variety of housing typologies and densities, but also a range of mixed activities in areas currently functioning as residential towns.

9.4.4 Quality of Life

The ultimate intention of a quality urban environment is to ensure a quality of life to residents. This is however not only achieved through variety of land uses and housing typologies, but also through sufficient infrastructure and social services.

During the sector studies it was highlighted that there is insufficient social facilities present in certain portions within the Study area, example: Tshelimnyama when compared to the population thresholds. Due to the limited number of social facilities and limited infrastructure there is a lack of a quality of life. The area does not fulfill the guidelines required for social facilities within an area of its population.

The challenge will thus be to ensure that any regeneration or future planning of the identified nodes include sufficient social infrastructure and accommodate a mixture of not only commercial activities, but social facilities too. It is believed that the balance between economic and social functions is vital to ensure vibrant nodes and areas where the quality of life is enhanced.

9.4.5 Outflow of Economy

The ultimate challenge is really a culmination of all these challenges and results in the economy leaving Pinetown South. The economy is here defined as all economic production resources including finances as well as human capital as people seek employment opportunities elsewhere. Pinetown South still serves the function of a dormitory township, where skills are applied elsewhere within the City and/or region. Pinetown South is still dependent on areas like Pinetown, Durban and the SBD.

It will be vital to ensure that the current dependency is addressed during the development of the identified nodes. Activities aimed at providing local opportunity for economic investment and the retention of household incomes should be promoted.
10 DEVELOPMENT GOALS, OBJECTIVES AND FRAMEWORK

Following from both guidance from the higher order studies previously completed for the area as, well as the findings of the status quo investigations, the tables below provides an indication of the goals, objectives and performance criteria for the further development of the study area.

The eThekwini Integrated Development Plan-2014/2015 (IDP) outlines an eight point delivery plan which includes:

1. Develop and Sustain our Spatial, Natural and Built Environment.
2. Developing a Prosperous, Diverse Economy and Employment Creation.
3. Creating a Quality Living Environment.
4. Fostering a Socially Equitable Environment.
5. Creating a Platform for Growth, Empowerment and Skills Development
6. Embracing our Cultural Diversity, Arts and Heritage.
7. Good Governance and Responsive Local Government.
8. Financially Accountable and Sustainable City.

The Pinetown South LAP has envisioned 6 goals which include:
- Goal 1: Promote and Enhance Regional Accessibility
- Goal 2: Economic Expansion and Industrial Development
- Goal 3: Social, Tourism and Educational Services
- Goal 4: Higher Density Residential Development
- Goal 5: Regional Infrastructure Provision
- Goal 6: Sustained Environmental Services

The table bellows outlines the eThekwini IDP eight point plan, paving the way forward in terms of how the Pinetown South LAP Goals interfaces with the eThekwini Municipality’s eight point plan. Plan 7 and 8 are an overarching component that will ensure sustainability and financial accountability.

Table 14: eThekwini IDP eight point plan

<table>
<thead>
<tr>
<th>Key Performance Area</th>
<th>8 point plan</th>
<th>Strategic Focus Area</th>
<th>Pinetown South LAP Goals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic Service Delivery</td>
<td>1. Develop and Sustain our Spatial, Natural and Built Environment</td>
<td>Develop, manage and regulate the Built and Natural Environment; Climate protection planning</td>
<td>Goal 6: Sustained Environmental Services</td>
</tr>
<tr>
<td></td>
<td>3. Creating a Quality Living Environment</td>
<td>Meet infrastructure and household service needs and backlogs; Address community service backlogs</td>
<td>Goal 5: Regional Infrastructure Provision</td>
</tr>
<tr>
<td></td>
<td>4. Fostering a Socially Equitable Environment</td>
<td>Promoting the safety of citizens; Promoting the health of citizens</td>
<td>Goal 5: Regional Infrastructure Provision</td>
</tr>
<tr>
<td>Local Economic Development (LED)</td>
<td>2. Developing a Prosperous, Diverse Economy and Employment Creation</td>
<td>Facilitating development in priority nodes and corridors; Developing a competitive tourism sector; Facilitating sustainable livelihoods;</td>
<td>Goal 1: Promote and Enhance Regional Accessibility Goal 2: Economic Expansion and Industrial Development Goal 5: Regional Infrastructure Provision Goal 3: Social, Tourism and Educational Services</td>
</tr>
<tr>
<td>Key Area</td>
<td>Performance Area</td>
<td>8 point plan</td>
<td>Strategic Focus Area</td>
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</tr>
<tr>
<td>6. Embracing our Cultural Diversity, Arts and Heritage</td>
<td>Access and inclusivity; An enabling environment for gainful economic participation through socio-cultural empowerment</td>
<td>Goal 3: Social, Tourism and Educational Services</td>
<td></td>
</tr>
</tbody>
</table>

10.1.1 **Goal 1: Promote and Enhance Regional Accessibility**

Intervention within the Pinetown South LAP study area should improve accessibility to local and regional opportunities and facilities/activities.

Given the dispersed settlement pattern of the study area, this should be based not only on the movement network that exists in the area, but will also include additional accessibility route proposed (MR579). It is however key that the interceptory points within the existing network (eg. N3, M1, MR559, M34 and MR468), and the public transport systems that operate within the wider study area and adjacent areas, need to be considered and enhanced.

Although the nature of the emerging development concept is to accommodate freight (N3) and vehicular movement, the framework should further seek to establish a basic level of service that operates at the lowest level of accessibility for pedestrian as well.

The Objectives towards achieving this goal as well as the suggested performance criteria and spatial implications for the framework is summarized in the table below:

Table 15: Goal 1: Promote and Enhance Regional Accessibility

<table>
<thead>
<tr>
<th>OBJECTIVES</th>
<th>PERFORMANCE CRITERIA</th>
<th>SPATIAL IMPLICATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. To improve regional accessibility via N3.</td>
<td>• Measurable increase in public transport capacity and utilisation; and • Higher levels of connectivity in the physical movement network (Measured through axial mapping) • Improvement of Key intersection and routes to accommodate increase traffic volumes. <strong>Accessibility:</strong> Public transport facilities or routes should be accessible by commuters within 10min. <strong>Safety:</strong> Pedestrian facilities (sidewalks, crossings and lighting) should be provided along the major public transport routes. <strong>Reliability and Effectiveness:</strong> Public transport operators should service routes at appropriate and predictable frequencies (5-10 minutes).</td>
<td>• Making connections in the movement network at different levels (neighborhood, local, regional)-Provide connections between Old Richmond Rd, Milky Way and Tshelimnyama as well as the proposed MR579 which links the southern end of the study area to Hans Dettman Rd; • Build on the generative capacity of movement systems at different levels within the structure; and • Identifying a hierarchy of nodal points based on levels of accessibility and connectivity to the regional network.</td>
</tr>
<tr>
<td>2. To improve localized connectivity and movement for both vehicles and pedestrians.</td>
<td></td>
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<tr>
<td>3. To improve road alignments, pavement and intersection capacities.</td>
<td></td>
<td></td>
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<tr>
<td>4. To improve the general Public Transport Accessibility and utilization.</td>
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<tr>
<td>5. To ensure that Regional Freight Movement associated with the N3 and the Rail are accommodated.</td>
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</tbody>
</table>
10.1.2 GOAL 2: ECONOMIC EXPANSION AND INDUSTRIAL DEVELOPMENT

As per the eThekwini Municipality Spatial Development Framework (SDF) which has identified Pinetown South as a Strategic Priority area and a key investment area; there is an urgent need to create opportunities within the study area which will culminate into increasing Local Economic Development, Private Investment Opportunities and the creation of jobs. Pinetown as well as Pinetown South, both have opportunities to increase Industrial Opportunity and expand Industrial development within the study area.

The Objectives towards achieving this goal as well as the suggested performance criteria and spatial implications for the framework is summarized in the table below:

Table 16: Goal 2: Economic Expansion and Industrial Development

<table>
<thead>
<tr>
<th>OBJECTIVES</th>
<th>PERFORMANCE CRITERIA</th>
<th>SPATIAL IMPLICATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. To create an economic stimulus within the Pinetown South area linked to industrial activity and manufacturing.</td>
<td>• Land availability: Avail Land especially for industrial and manufacturing purposes. • Jobs created: Temporary and permanent job opportunities created in the study area as well as in surrounding supportive services. • Business opportunities: Business opportunities (industrial and commercial) created for local entrepreneurs. • Economic Sectors Active: Improvement in the mix of economic sectors accommodated within Pinetown south. • Number of users: Visitors from local areas and wider rural region making use of facilities within Pinetown South.</td>
<td>• Industrial Area: The Existing Industrial areas (Westmead Industrial Park and proposed extension along the N3, Mariaan Industrial Park and Wilshire Rd Industrial area will create the most significant spatial restructuring within the study area. • Proposed expansion of Industrial area: Manufacturing, logistics, Warehousing and service industries as well as commercial activities focused on regional and national needs. • Development Corridors: Commercial opportunity linked to Milkyway, Old Richmond Road and Wiltshire Road. • Commercial development: Expand the existing commercial activities and allow mixed use development in land that is not yet developed. • General: Construction and related opportunities.</td>
</tr>
<tr>
<td>2. To strengthen the future role of the Study Area in the regional economy.</td>
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</tr>
<tr>
<td>3. To contribute to related job opportunities outside of the direct study area.</td>
<td></td>
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</tr>
<tr>
<td>4. To develop the economic opportunities around Pinetown South in support of the larger study area development.</td>
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</tr>
<tr>
<td>5. To ensure that industrial growth is expanded and focused within existing industrial and commercial areas in sympathy with Pinetown, and to attract high-employment activities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. To focus on Local Economic Development, particularly in nodes and along corridors.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

10.1.3 GOAL 3: SOCIAL, TOURISM AND EDUCATIONAL SERVICES

The Objectives towards achieving this goal as well as the suggested performance criteria and spatial implications for the framework is summarized in the table below:

Table 17: Goal 3: Social, Tourism and Educational Services

<table>
<thead>
<tr>
<th>OBJECTIVES</th>
<th>PERFORMANCE CRITERIA</th>
<th>SPATIAL IMPLICATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. To create opportunities for communities toward social and economic development.</td>
<td>• Measurable increase in basic levels of service provision; • Measurable increase in range of facilities and activities within defined threshold areas; • Appropriate level of service provision based on current and</td>
<td>• Concentration of regional social and educational facilities within the associated areas like: Tshelimnyama, Mpola, Tollgate South etc. • Upgrade regional road linkages within the study area.</td>
</tr>
<tr>
<td>2. To create an appropriate gradation of activities from the Primary nodal areas to the peripheral areas.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. To create linkages from outlying</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

...
OBJECTIVES | PERFORMANCE CRITERIA | SPATIAL IMPLICATIONS
---|---|---
areas to educational facilities. 4. To foster Tourism opportunities and potential. | future population; | • Creation of Tourism potential enclaves- Signage and upgrades to environment (Mission area, linkage from North Park Nature Reserves to surrounding Reserves and Riverine systems)

10.1.4 GOAL 4: HIGHER DENSITY RESIDENTIAL DEVELOPMENT

As part of the municipality’s housing development strategy, the need for areas to accommodate higher density residential development has been identified as key component towards housing delivery. The Objectives towards achieving this goal as well as the suggested performance criteria and spatial implications for the framework is summarized in the table below:

Table 18: Goal 4: Higher Density Residential Development

<table>
<thead>
<tr>
<th>OBJECTIVES</th>
<th>PERFORMANCE CRITERIA</th>
<th>SPATIAL IMPLICATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. To establish more sustainable settlements though densification. 2. To provide more housing options within the study area for local and surrounding residents. 3. To increase residential settlement densities in line with infrastructure capacity and development priorities 4. To formalise Informal settlements and use the process toward increased densification within Pinetown South, 5. Integrate housing typologies and income levels across the Pinetown South area to provide a variety of housing options.</td>
<td>• Reduction in regional housing backlogs; • Increase in localized accommodation where workers who are employed locally also live locally; • Measurable increase in densities within appropriate areas of the LAP Area; • Measurable increase in overlap of activities in identified nodal areas • Measurable decrease in space utilisation of key facilities and activities.</td>
<td>• Increased variety of housing opportunities within the study area; • Progressive network/structure of public space relative to activity intensities and location, • Improve accessibility of housing opportunities, • Close proximity of residential and employment option to each other as well as residential to transport corridors including the Cato Ridge Rail line.</td>
</tr>
</tbody>
</table>

10.1.5 GOAL 5: REGIONAL INFRASTRUCTURE PROVISION

The following observations towards regional infrastructure provision should be addressed under this goal:

- Available infrastructure is currently adequate, but might need reassessment as land uses are proposed.
- A comprehensive regional strategy for the Waste Water is required in conjunction with localised (possibly on site) solutions for the study area.
- The Municipality requires all new developments to ensure that the post development flows emanating from the site are attenuated down to the 1 in 10 year and 1 in 50 year pre-development flows.
- Once the scope and category of proposed land uses and developments have been determined, an estimated electrical load needs to be communicated to the eThekwini Electricity Department to provide final assessments on available capacity.
- The Mariannhill Landfill site should have sufficient capacity for the development of the study area, but the volumes and nature of waste will need to be defined in order to assess suitability.
The Objectives towards achieving this goal as well as the suggested performance criteria and spatial implications for the framework is summarized in the table below:

Table 19: Goal 5: Regional Infrastructure Provision

<table>
<thead>
<tr>
<th>OBJECTIVES</th>
<th>PERFORMANCE CRITERIA</th>
<th>SPATIAL IMPLICATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. To fully utilize and upgrade bulk water capacity within the study area.</td>
<td>• Maximising Infrastructure: New infrastructure to be connected with existing infrastructure to allow for ease of construction, operation and maintenance.</td>
<td>• Reserve areas for bulk regional infrastructure requirements eg. Any new proposed Landfill Sites, Industrial expansion and residential areas within the study area including the formalisation of informal settlements.</td>
</tr>
<tr>
<td>2. To upgrade regional bulk sanitation systems and identify short term localized solutions.</td>
<td></td>
<td>• These development should be strategically located to maximize the use of existing infrastructure thereby reducing infrastructure spend.</td>
</tr>
<tr>
<td>3. To ensure sufficient bulk electricity provision for the further development of the study area.</td>
<td>• Service delivery: Existing backlogs should be identified and phased service delivery should be planned and progress monitored.</td>
<td>• Development layouts and approaches must be consolidated and dandified in order to reduce urban sprawl, infrastructure spend and accelerate service delivery.</td>
</tr>
<tr>
<td>4. To upgrade stormwater infrastructure in areas where flooding is persistent.</td>
<td>• Formal settlements: Identified informal settlements to be formalized and provided with services.</td>
<td></td>
</tr>
<tr>
<td>5. To ensure that all infrastructure is mapped in GIS.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. To consolidate settlements within existing Sewage Treatment Works Catchments,</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. To expand services where appropriate, particularly in Informal settlements with high densities.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

10.1.6 Goal 6: Sustained Environmental Services

The Objectives towards achieving this goal as well as the suggested performance criteria and spatial implications for the framework is summarized in the table below:

Table 20: Goal 6: Sustained Environmental Services

<table>
<thead>
<tr>
<th>OBJECTIVES</th>
<th>PERFORMANCE CRITERIA</th>
<th>SPATIAL IMPLICATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. To protect sensitive ecosystems and regional environmental resources i.e. North Park Nature Reserves; Wetlands (more especially off the Umhlatuzana River) Umlaas, Umbilo and Umhlatuzana Rivers and its tributaries.</td>
<td>• Quality of Estuaries and wetland functionality maintained;</td>
<td>• Creation/ preservation of “green lungs” in built up areas especially around the Industrial areas like Westmead, Mariaanhill and Wiltshire Road;</td>
</tr>
<tr>
<td>2. To maintain the functionality of key wetlands within the study area.</td>
<td>• Inclusion of additional land parcels into formal D’MOSS system for protection;</td>
<td>• Rehabilitation and protection of the North Park Nature Reserve as an important ecosystem and habitat;</td>
</tr>
<tr>
<td>3. To create and maintain productive / sustainable landscapes through the encouragement of sustainable resource use;</td>
<td>• Creation of open spaces for recreational use within built areas (protects against dumping of waste/ informal settlement etc.); and</td>
<td>• Maintain wetland functionality levels as local environmental services.</td>
</tr>
<tr>
<td>4. To contribute to the City’s Carbon sequestration / rainfall harvesting programmes.</td>
<td>• Number of opportunities to the City’s Greening Programme i.e. Planting trees to offset increased carbon emissions.</td>
<td>• Active and continued agriculture in areas which are not deemed for development.</td>
</tr>
</tbody>
</table>
11 SPATIAL CONCEPT

The Pinetown South area developed at a distance of approximately 15-25km away from the main Pinetown CBD. Due to the distance from the main place of employment and economic nodes, Pinetown South suffers from the alienation of economics. This implies that not only are opportunities located a distance away from outer lying areas of Pinetown South, but household income flows out of the study area towards areas of opportunity within the Pinetown CBD. The result is that many areas within Pinetown South are forced to function as an island to the “main land”. There is a dependency between Pinetown South and the Pinetown CBD. The key challenge is to manage this dependency while Pinetown South is spatially separate to the surrounding context.

The development concept for the local areas expresses a confluence of the various existing structuring elements and their interaction with each other. For the purposes of illustrating this, the framework is discussed by:

Defining the Movement System,
Defining Environmental Service Areas
Defining Key Economic Opportunities
Defining Key Land Use Reservations, and a
Differentiation between Functional Districts and Broad Land Uses.

11.1 DEFINING THE MOVEMENT SYSTEM

The strategic locality of the study area in relation to the N3 route makes it an ideal area to promote the potential regional logistics function of the M1 and M34. The N3 between Durban and Gauteng runs in an east west direction at the northern portion of the study area providing regional and national accessibility. M1 and M7 serve as the regional mobility routes. MR85 (M1) links Pinetown with the southern portion of eThekwini via the Higginson Highway, providing the major access road between the study area and Pinetown. MR468 (Old Richmond Road) and Wiltshire Road provide a high level of accessibility in an east-west direction. M1, M34 and M48 provide a high level of mobility within the study boundary. Internal circulation is supported by MR518, St Wendolins Road, Umhlatuzana Road etc.

The road Hierarchy map on the next page illustrates the core components of the regional accessibility framework for the study area.

The Road Hierarchy Map illustrates that the following planning and design elements would need to be considered and/or addressed:

- Potential access to the N3 via either additional interchange or existing interchange and its upgrading requirements will need to be addressed.
- Potential linkage through Tshelimnyama, Milkyway and Old Richmond road may enhance regional accessibility.
- Upgrade of Old Richmond road may be necessary to facilitate movement from the South of Durban into the Western regions and inland.
- Local patterns of connectivity within the Study Area need to be strengthened, and a logical system of accessibility developed, particularly in the interface between formal and traditional settlement areas.
- The potential improvement of various road alignments, pavement and intersections in response to proposed land uses will need to be undertaken and considered as part of the Implementation Planning.
- Improved public transport services access and improved service routes to be identified. This should align to the proposals from the Integrated Transport Plan and the Integrated Rapid Public Transport Network Implementation Plan.
- Upgrades to informal taxi ranks as well as bus and taxi stops are required to improve safety and accessibility for all public transport users.
- The potential improvement to the location of train stations, or accessibility to train stations, especial;y the Cato Ridge Line.
• Appropriate pedestrian amenities at high conflict zones and along the core pedestrian movements were identified to be along M1 Richmond Road, Abbot Francis Road, Wiltshire Road, M34 Hans Dettman Highway.

• Upgrades to existing roads: N3 upgrade from N2 interchange to M1 Richmond Road, N3 upgrade from M1 Richmond Road to Cato Ridge, Truck Stop in the vicinity of Richmond Road/N3 interchange, C7 IRPTN corridor passes through study area along M1, MR579 new link from Umlazi to Pinetown via M34 Hans Dettman Highway.

Investment in transport infrastructure within the Pinetown South LAP Area must seek to integrate with these existing systems, but at the same time address the shortcomings of the existing network.

Map 39: Road Hierarchy
11.2 DEFINING ENVIRONMENTAL SERVICE AREAS

The Environmental Services Map illustrates the core components of the regional accessibility framework for the study area.

From the Environmental Services Map the following planning and design elements would need to be considered and/or addressed.

- Environmental systems must be reinforced as part of the spatial structuring systems guiding development, and reinforcing a positive relationship between built and inbuilt systems must become integral to intervening in the area.
- Wetland Delineation and Functional Assessment will be required if an area containing a potential wetland is proposed for development. Exclusion of wetlands and buffer zones from development.
- Rehabilitation program to be designed and budgeted for. Consideration need to be given to include valuable areas e.g. cross catchment link identified into DMOSS for protection. Rehabilitation of the Riverine systems and portions of the river in close proximity to the Waste Water Treatment Works needs to be budgeted for.
- No-go development zones (particularly associated with rivers and floodplain areas) will need to be identified and earmarked as such within the Local Area Plan.
- D’MOSS areas should be demarcated during planning and excluded from development or negotiated beforehand.

11.3 DEFINING KEY ECONOMIC OPPORTUNITIES

The mentioned regional accessibility, combined with the availability of undeveloped vacant land, potential nearby labour forces and the wider city vision to diversify the regional economy within Inner West Region of the Municipality suggests that the study area should serve as a catalytic manufacturing/Industrial hub. The interest for industrial development already expressed by developers for the area, further underpins this potential contribution the regional economy.

The Economic Opportunity Areas illustrates the core components of the Key Nodes and Industrial Nodes and for the study area.

From the Economic Opportunities Map, the following planning and design elements would need to be considered and/or addressed:

- A clear economic development vision should be established for the Study Area. The vision should feed into the debate on the economic development for the Central and Inner West Regions of eThekwini.
- The future role of the Study Area will be a determining factor in decision-making around the location of industrial land, public transport, commercial and social service activities which will guide future investment.
- The diversification of the local economy through the introduction of Industrial Potential/Expansion, especially in support of other industrial activities found in the Pinetown South area should be explored.
- Economic development opportunities in a variety of viable sectors should be considered.
- Identify priority areas for upgrading of rural housing and service infrastructure.
- Apart from the intention to establish a higher-order economic development within the Study Area, focus must also be placed on protecting and growing local economic opportunities and local nodes, whilst integrating these more effectively with the regional system.
- Budget should be prioritized to upgrade existing service infrastructure (Water, Sanitation and Electricity)
Map 41: Economic Opportunity Areas
11.4 DEFINING KEY LAND USE RESERVATIONS

The study area has a significant role to play with the associated undeveloped areas which could accommodate the regional facilities and functions required within the municipality, such as social services, higher density housing development and regional bulk infrastructure and service facilities.

As part of the municipality's housing development strategy, the need for areas to accommodate higher density residential development must be identified as key component towards housing delivery. With the topography of Pinetown South and limited vacant land available, the eThekwini Department of Human Settlements has identified key portions of land especially the central to northern areas of the Study area as key housing development areas. It is also believed that higher density housing delivery within the study area would contribute towards an integration and a sustainable mix of land uses.

Pockets of undeveloped land in close proximity to commercial and industrial nodes should allow for a mixture of land uses by promoting commercial or mixed use development, including housing densification.

From the above the following planning and design elements would need to be considered and/or addressed:

- The potential for extending the role served by the potential commercial and/or industrial nodes in the Study Area must be explored with reference to longer term regional connectivity and development trends.
- Provision must be made for the improvement of social and government services in and around the Study Area.
- A definitive reservation should be put in place for high density housing units, extension of commercial areas and the extension of industrial areas, as well as any reservation required for bulk infrastructure facilities.

The conceptual framework represents a combined development vision for the Pinetown South Local Area and should be considered in conjunction with the earlier research conducted as part of this study. The proposed associated land use controls and infrastructure implications for the development concept and each individual district will be addressed within the next phase of the study. This will contribute to the refinement of this development concept into the final Pinetown South Local Area Plan.

11.5 CONCEPTUAL FRAMEWORK

The conceptual framework represents a combined development vision for the Pinetown South area, and should be considered with all other research conducted in the area. The culmination of the afore-mentioned elements provides a complete conceptual framework for the Pinetown South area which can be seen in the map on the following page. Due to the size of the study area, the necessary elements are broken into separate land use concepts, as will be discussed briefly hereafter. The proposed associated infrastructure implications and land use controls for the development concept will be addressed in the next phase of the study.
12 FRAMEWORK OF FUNCTIONAL AREAS

12.1 DELINEATION OF FUNCTIONAL AREAS

As part of the further planning, the physical delineation of functional areas is important toward determining the core intervention area as well as to engage key roleplayers of the further development of the concept.

These functional areas have been geographically identified and are physically connected. Topographical features, natural systems such as rivers and valleys and major transport routes such as main roads have been used as elements to distribute the Pinetown South Study area into functional regions.

Each functional area has its own inherent character and presents unique opportunities for development which need to be managed and planned accordingly. The objective in the case of these districts is to encourage local activity systems which provide a range of facilities, opportunities and services required by local residents.

These local areas also play an important role with respect to the achievement of the broader based growth and development objectives of the municipality. As an important spatial structuring device these districts have a role to perform in respect to living, employment, economic opportunity, tourism and recreation areas.

The role, key characteristics, spatial development concepts and key actions are outlined for each of the Functional Areas in the foregoing sections.

The Conceptual Framework map provides a concept and hierarchy of nodes which will guide the further design and planning of each functional area. It is important to approach each functional area not in isolation, but as its function and position as part of the larger Pinetown South region and the promotion of certain development corridors or intervention areas.

From the Status Quo analysis it is evident that the Pinetown South does not currently have a clear and defined hierarchy of nodes, but rather functioning in a cellular way with a suggested even spread of activity. This situation is however not sustainable and does not contribute towards the creation of a functional urban area.

The conceptual framework thus suggests that there are development corridors as well as a few commercial nodes which should be promoted and developed as such. These include the Milkyway Corridor and associated mixed use node, Old Richmond Road Corridor and associated mixed use node, as well as Wiltshire Road and associated Industrial and mixed use activity.

It is believed that the successful development of these functional areas will ensure a structured hierarchy of functions as well as nodes within Pinetown South. The access routes between the functional areas will thus also need to be addressed as part of the overall restructuring of the area.

The result would be series of connectivity proposed as well as an accompanying hierarchy of nodes. These functional areas will be planned and designed in more detail within the following phase of the project and ultimately lead to a set of urban design plans and associated project to improve the structure, urban quality and functioning towards the overall revitalization of Pinetown South.

A functional area can be defined as an area that has a strategic thrust for one or more of the following uses:

- Economic activity
- Transport
- Social/community uses
- Political/administrative activities and;
- Educational activities
Each of these functions either has the characteristics of an urban centre or a focal point, or they have the potential to become an urban centre or focal point within that area.

The boundary delineation of any functional area and or node cannot (because of the organic nature of urban growth) be fenced-in absolutely, and forsaking any specific areas. By its very nature nodes are meant to interact with its surrounding environment and to a certain degree grow naturally. It is however possible to delineate an initial design boundary of a functional area to ensure potential growth. The five key elements to consider in defining such boundaries are briefly discussed herein:

Table 21: Boundary Elements

<table>
<thead>
<tr>
<th>CRITERIA</th>
<th>DESCRIPTION AND RATIONALE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Regional Gravitational Pull</td>
<td>Any functional area is usually part of a larger strategic spatial framework and as such has a ranking in terms of its anticipated function and threshold areas. In order to implement any strategic direction, it is imperative that each functional area fulfills its anticipated function within the hierarchy or continuum of nodes and at the locality required. This means that a node should not compete with a node of larger gravitational pull (Attraction value) than itself. This is practically achieved by ensuring that a) nodes are not positioned too close to each other and b) the functions and activities offered at a particular node does not require a threshold which overlaps with that of the larger node. Specifically in the case of study nodes the areas included within each node should not compete with higher order nodes or even each other. Due to the relatively close proximity of all these planned nodes to each other, the specific function of the node will more likely determine this.</td>
</tr>
<tr>
<td>2. Key Catalyst Activities</td>
<td>In most cases functional areas are identified in areas where there is good accessibility, open land and existing or potential catalyst activities which could serve as anchors to further investment or attraction (gravitational pull). This either includes existing businesses centres or facilities or areas with natural and infrastructural characteristics which might attract specific catalyst activities. It is important that any boundary is identified as inclusive of these functions or areas as possible.</td>
</tr>
<tr>
<td>3. Transport linkage</td>
<td>A functional area in isolation, which is accessed with difficulty, could never function optimally. It is therefore important to include the major access routes and intersections. Firstly these areas tend to naturally attract activity and secondly any potential increase in activity around a node will impact back onto the transport network as well. In certain cases proposal will include upgrading of the transport network to either increase or decrease traffic flow or providing specific attention to pedestrian traffic.</td>
</tr>
<tr>
<td>4. Public resources</td>
<td>As functional areas are usually planned as areas where public effort and investment would stimulate a desired function, the availability of public resources within the defined functional areas would greatly enhance the efficiency of such developmental efforts. Such public resources do not only include public land, but also existing public facilities and infrastructure which could be used toward the stimulation of the node. Furthermore, such resources are also not always under the ownership or authority of the local municipality, but often under state authority. It is important to note that it may be a prerequisite that public resources are already available, but would be beneficial.</td>
</tr>
<tr>
<td>5. Planning boundaries</td>
<td>It often happens that a suite of developmental plans in an area does not link up or correspond with each other. This could firstly be in terms of actual proposals which conflict at cross boundary areas and secondly by leaving unplanned areas on the landscape with no direction. It is therefore vital that all available plans for surrounding areas and activity systems are placed in context to the node to ensure proper integration and an inclusive boundary.</td>
</tr>
</tbody>
</table>

12.2 OVERVIEW: FUNCTIONAL AREA DELINEATION

As a basis for more detailed elaboration of the Local Area Plan Spatial Framework, and as a structure for the preparation of action plans, the overall Pinetown South LAP Study area has been structured into a number of distinct functional precincts:

1- Westmead Industrial 7- Shallcross
2- Tshelimnyama          8- Demat Road
3- Mariannhill           9- St. Wendolins
4- Hatton Estate         10- Old Richmond Road
5- Mariaan Industrial    11- Klaarwater
6- Queensburgh
Map 43: Functional Area
## 12.3 FUNCTIONAL AREAS

### 12.3.1 WESTMEAD INDUSTRIAL FUNCTIONAL AREA

<table>
<thead>
<tr>
<th>1. Westmead Industrial Northern Area</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Role</strong></td>
</tr>
<tr>
<td>Mahogany Ridge Industrial Park is situated in the heart of Westmead and often referred to as Westmead Industrial Park. It is predominantly industrial in character and integral to eThekwini Municipalities service and manufacturing industrial sectors.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Access</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Westmead is bordered by the N3 freeway leading to Gauteng, the M 13 leading to Kloof and the M19 leading to the South Coast.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Environmental constraints</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Riparian areas and tributaries associated with the Umhlatuzana River run through this functional area in the South, with the Umbilo River traversing the North end. The DMOSS sits in large pockets South, West and North of the functional area. The Central area has a small pocket of DMOSS and since this is an existing Industrial area, care has been taken to develop the industrial area considering all the environmental elements.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Social facilities in this functional area include:</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>- Library (1)</td>
</tr>
<tr>
<td>- Municipal Office (1)</td>
</tr>
<tr>
<td>- Education facility (1)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Housing</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>There is a proposed Insitu Upgrade in the heart of the Industrial area as well as to the North of the Functional Region, located in Motala farm. There is also a proposed relocation of residents in the north of the functional area.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Key Interventions and LED Opportunities:</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>- Focus in this functional area will be on promoting industrial development.</td>
</tr>
<tr>
<td>- Focus by the Human Settlements department on the relocation of people in the Motala Farm area will be essential to promoting a better lifestyle for these people.</td>
</tr>
<tr>
<td>- Pockets of environmentally sensitive land need to be conserved and programmes aimed at identification of these areas and a stewardship approach will be necessary to balance the industrial activities with the environment.</td>
</tr>
<tr>
<td>- Retain the existing Industrial usage within Westmead and Mahogany Ridge.</td>
</tr>
<tr>
<td>- A proposed clean-up operation is required in Motala Farm: Enforcement issue.</td>
</tr>
</tbody>
</table>
## 12.3.2 Tshelemyama Functional Area

### 2. Tshelemyama- Western Area

<table>
<thead>
<tr>
<th>Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Tshelemyama functional area is situated in the west and has a residential character with pockets of mixed use and commercial activity. This functional region is composed of the following suburbs:</td>
</tr>
<tr>
<td>Southern portion of Tollgate South, Kwalinda, Emansenseni- A, Angola Block E, Cutshwayo, Dassenhoek, Kwandengezi-A, Lusaka Block-D, Mozambique-B, Namibia-C, Coffe Farm, Zilweleni, Birchwood Park, a portion of Marian Park Madiba Valley, MpolaSinqobile and Thornwood.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Access</th>
</tr>
</thead>
<tbody>
<tr>
<td>The northern portion of the functional area is accessed via the MR559 route, which is also referred to as Milkyway and the southern portion is accessed by the Mr518 route, which becomes Old Richmond Road. The Railway line traverses and bisects this area and is composed of at least 4 train stations: Kwandengezi Station (north west), Dassenhoek Station, Sithundu Hills Station and Thornwood Station (south east ).</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Environmental constraint</th>
</tr>
</thead>
<tbody>
<tr>
<td>This area’s terrain is composed of undulating hills. Riparian areas and tributaries associated with the Umhlatuza River which borders the northern and western boundary, with the Umlazi River bordering the southern boundary and the Cutswayo River bisecting the functional area in a North South direction. DMOSS pockets appear on the boundary of the functional area.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Social facilities in this functional area include</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Library (3)</td>
</tr>
<tr>
<td>- Municipal Office (3)</td>
</tr>
<tr>
<td>- Education facility (16)</td>
</tr>
<tr>
<td>- Community Hall (19)</td>
</tr>
<tr>
<td>- Fixed Clinic (3)</td>
</tr>
</tbody>
</table>

Social -Housing: There is a proposed Insitu Upgrade in the majority of the study area. There are also proposed greenfield housing project proposed- Bekisiwe Thornwood, Mazakhele, Marianridge development and Tshelemyama Phase 3. The Western portion contains a proposed rural housing upgrade for Kwalinda.
Key Interventions and LED Opportunities:

- Focus in this functional area will be on promoting residential densification.
- The provision of educational facilities and a range of services to the North of the functional area (Tshelimnyama) will make residential development feasible.
- Densification for housing at approximately 40 dwelling units per hectare.
- Promote commercial and mixed use activities in the Kwandengezi area, to enhance Local Economic Development and promote employment opportunities.
- Pockets of agricultural production and agri-business activities, like an Agri-Hub to be preserved or initiated where possible.
- Upgrade Node- public realm upgrades. Taxi Rank Upgrade as well as intersection upgrade.
- Make the centre more accessible, create parking areas.
- Scheme amendments to include service industry, commercial and administration zones or to rezone portions of land.

Milkyway

- Upgrading- Sidewalks and lighting to improve security
- Upgrading of intersections at Milkyway and 201191 Street, as well as the intersection between Richmond Road and Milkyway.
- Access routes proposed to create accessibility or ease of access.
- Upgrading of Infrastructure- increases capacity required for water, sanitation and electricity.
3. Mariannhill – North Central

Role

The Mariannhill Functional area is situated in the North of the study area and has a cultural character. This functional region is composed of the Cathedral which forms a part of a Cathedral route (cultural tourism). There’s is a significant amount of green areas with the only hospital for the entire Pinetown South Study area.

Access

This functional area is traversed by the M1- North to South (Class 2), Rudloff Road (Class 4) toward the East and Umhlatuzana Road (Class 4) toward the North East.

Environmental constraints

Riparian areas and tributaries associated the Umhlatuzana River which traverses the functional area as well as runs along the Southern and Western boundary. DMoss pockets are located along the river and floodplains, as well as the south eastern portion of the functional area.

Social facilities in this functional area include:

- Hospital (1)
- Social Welfare (1)
- Education facility (3)

Social Housing

There are no proposed housing projects in this functional area, except a Greenfields project that has been completed. Although the housing plan indicates that a portion of this project falls within this functional area, the reality is that that portion is undevelopable and has environmental constraints.

Key Interventions and LED Opportunities:

- Focus in this functional area will be on promoting cultural, agricultural and environmental activities.
- Pockets of environmentally sensitive land need to be conserved and programmes aimed at identification of these areas and a stewardship approach will be necessary to balance the industrial activities with the environment.
- Agricultural production and agri-business activities, like an Agri-Hub to be preserved or initiated where possible.
4. Hatton Estate Functional Area

**Role:** Predominantly residential area, with some support facilities and local commercial opportunities.

**Access**

M7 and N3 are the primary routes through the study area, providing primary access to the site. M1 serves as the western boarder for Hatton Estate and M1 adjoins from this route. Underwood road and Stapleton road serves as secondary access roads connecting the neighbourhood to the M7 and N3. The railway line is passing through the study area to the far east with Sarnia Railway station.

**Environmental constraints**

Riparian areas and tributes associated with UMhlathuze River include a 100 year flood plain that prohibits any development within the designated area.

**Social facilities in this functional area include:**

- Educational facilities (5)
- Fire Station (1)

**Social Housing**

There are no housing projects that are currently being proposed under Hatton estates functional area.

**Key Interventions and LED Opportunities:**

- Pockets of environmentally sensitive land need to be conserved and introduce programmes aimed at identification of these areas.
- Encourage commercial development in areas of greater potential
- Identification of areas with densification potential.
- Upgrade and maintain existing service infrastructure to ensure on-going capacity is maintained.
5. Mariaan Functional Area

Role

The Mariaan functional area has a diverse land use types, these includes social, residential, commercial and industrial land uses. Southmead Industrial Park is an area of investment as there is still more land for further development.

Access

Mariaan is accessed via the N3 providing primary access into the study area. It is also serves as the northern border of the study area. Wiltshire road connects the residential area to the industrial area, providing an easy access to the working opportunity and for those who reside and work within Mariaan.

Environmental constraints

Because of the topography of Mariaan functional region, large portions of land fall within the DMOSS system.

Social facilities in this functional area include:

- Educational facilities (2)
- Community halls (2)

Social Housing

The proposed housing projects within this function area includes the Greenfields development in Nazareth and the in-situ upgrade in areas noted yellow in the map.

Proposed Concept and Key Interventions and LED Opportunities:

- Focus in this functional area will be on promoting cultural, agricultural and environmental activities.
- Pockets of environmentally sensitive land need to be conserved and programmes aimed at identification of these areas and a stewardship approach will be necessary to balance the industrial activities with the environment.
- Agricultural production and agri-business activities, like an Agri-Hub to be preserved or initiated where possible.
- Upgrade and maintain existing service infrastructure to ensure on-going capacity is maintained.
- Split the Industrial area, and create two separate yet inter-related Precincts: Industrial Precinct and a Mixed Use Precinct.
- This concept allows for greater differentiation for land use and activities surrounding Wiltshire Road.
- Proposed upgrade of train station into an intermodal facility.
12.3.6 QUEENSBURG FUNCTIONAL AREA

6. Queensburg Functional Area

Role
The character of Queensburg is mainly residential in nature with a mixture of industrial, social and commercial activities. It also plays an important role of environmental conservation (North Park Nature Reserve).

Access
Queensburg functional area is accessed via the M7 which runs through the study area from west to east providing a clear access and public transport route. The railway station runs parallel to the M7 with 5 passenger’s railway station (Northdale, Escombe, Malvern, Poet’s corner and Moseley train stations).

Environmental constraints:
UMhlathuze river runs on the south west of the Queensburg functional area. The North Park Nature Reserve consists of 52 hectares of natural forest, adjacent to the Umhlatuzana River. It is home to many bird species and a large number of butterfly species. The established ponds are a haven for water birds. Some of the smaller mammals that can be found there are blue and grey duiker, mongoose and cane rats. Umbilo river runs along the north of the study area and serves as the northern border of the study area.

Social facilities in this functional area include:
- Educational Facilities (9)
- Social Welfare Facilities (4)
- Fire Station (1)
- Municipal Office (1)
- Community Hall (1)
- Police Station (1)

Social housing
Currently, Queensburg does not have any planned housing projects, however, the areas situated in unsuitable land are to be relocated.

Key interventions and LED Opportunities:
- Focus in this functional area will be on promoting cultural, agricultural and environmental activities.
- Pockets of environmentally sensitive land need to be conserved and promote tourism development at the North Park Nature Reserve and also includes facilities that accommodate people with disabilities.
- Agricultural production and agri-business activities, like an Agri-Hub to be preserved or initiated where possible.
- Encourage mixed use development along activity corridors and around activity nodes.
- Upgrade of Intersections at the train stations since accident rates are high according to the status quo analysis.
- Upgrade of mixed use nodes that allow for better accessibility, parking and landscaping- public realm upgrades.
- Proposed upgrade to train station into intermodal hub facility.
### 12.3.7 SHALLCROSS FUNCTIONAL AREA

#### 7. Shallcross Functional Area

**Role**

Shallcross functional area is mainly residential in nature with distinguishing types of residential units, these include medium to high residential and lower income houses and a mix of informal settlements. Other features are the social and commercial facilities across Shallcross. It is also characterised by a diverse society of blacks, coloureds and Indian communities interacting with one another.

**Access**

Shallcross functional area is accessed via the m1 (Higginson highway) which is also a public transport route. Shallcross and Klaarwater roads as well as Marton Drive serves as secondary access routes. Two railway lines running at the north and south of Shallcross study area has two railway stations (Shallcross and Crossmoore).

**Environmental constraints**

UMhlathuze River runs on the north of the study area and also serving as a northern border of Shallcross functional area. The terrain is undulating with streams flowing towards the UMhlathuze catchment.

**Social facilities in this functional area include:**

- Educational Facilities (23)
- Municipal Offices (3)
- Social Welfares (3)
- Library (1)
- Community Halls (2)

**Social Housing**

A number of settlements have been identified for relocation especially those along the UMhlathuze River. In addition to that, there is also a proposed Greenfields housing development.

**Key Interventions and LED Opportunities:**

- Prioritising proposed housing projects and formalisation of all informal settlements.
- Upgrading and extending internal roads.
- Pockets of environmentally sensitive land need to be conserved.
- Agricultural production and agri-business activities, like an Agri-Hub to be preserved or initiated where possible.
### 12.3.8 Demat Road Functional Area

#### 8. Demat Road Functional Area - Southern Area

**Role:** The Demat Road Functional area has a residential character.

<table>
<thead>
<tr>
<th>Access</th>
</tr>
</thead>
<tbody>
<tr>
<td>Currently this area is accessed via Demat Road (Class 4). However there is a proposed Class 2 Road that joins Higginson Highway in the North, traverses the functional area and adjoins Mangosuthu Highway in the South (outside the study area) and connects this functional area to areas like Umlazi and Ehlanzeni.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Environmental constraints</th>
</tr>
</thead>
<tbody>
<tr>
<td>Riparian areas and tributaries associated with the Umlazi River run alongside the south and western boundary, with the Umlaas River running along the eastern boundary and the uMlaza River running along the north eastern boundary. DMoss pockets coincide with the river catchment. The terrain is gentle to undulating in areas of settlement with steep drops to the surrounding river.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Social Facilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>There is an absence of social facilities in this functional region.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Social Housing</th>
</tr>
</thead>
<tbody>
<tr>
<td>There is a proposed greenfield development for this functional area. According to eThekwini Municipality Human Settlements GIS database, 2855 houses have already been constructed, with 55 remaining. This project is therefore virtually complete.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Key Interventions and LED Opportunities:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Focus in this functional area will be on promoting residential densification. Commercial and mixed use activities will be promoted on the top end of Demat Road.</td>
</tr>
</tbody>
</table>
9. St Wendolins Functional Area - Central Region

Role

This functional area is predominantly residential in character, with portions of commercial and mixed use activity.

Access

Richmond Road (M1) (Class 2) borders the Western boundary and bisects the area. Hans Dettman: P455 (M34) (Class 2) borders the eastern boundary. St Wendolins road (M42) (Class 4) traverses the northern portion and adjoins Wilshire road and Richmond Road to the West. Ngena Road takes direct access of. Westmead is bordered by the N3 freeway leading to Gauteng, the M 13 leading to Kloof and the M19 leading to the South Coast.

Environmental constraints

Riparian areas and tributaries associated with the Umhlatuzana River runs through this functional area in the North, with the Umlaas River traversing the South end. DMOSS pockets coincide with the rivers that run through the functional area. Terrain composed of undulating hills.

Social facilities in this functional area include:

- Library (1)
- Fixed Clinic (1)
- Education facility (2)
- Community Hall (3)

Social Housing

According to the eThekwini Municipality’s Human Settlements database there is a proposed Insitu Upgrade in the south of the study area and a proposed Greenfields project in the south of the functional area. Google Earth aerial photography indicates that these projects may have already been completed.

Key Interventions and LED Opportunities:

Focus in this functional area will be on promoting residential densification wherever possible.

Pockets of environmentally sensitive land need to be conserved and programmes aimed at identification of these areas.
Old Richmond Road functional area is predominantly residential with a mix of commercial and mixed use activities.

Access
Area is accessed via Milkyway (Class 2) in the north east, Old Richmond Road (Class 3) east to west and Intake Road in the South (Class 4). The railway line borders the Northern portion of the functional area and has two train stations: Marianhill station (north east) and Thornwood station (north).

Environmental constraints
Riparian areas and tributaries associated with the Sithundu stream (which forms part of the Umlazi river) runs through this functional area in the North, with the Umlaza River (which forms part of the Umlazi river) traverses the south end. The DMOSS sits in large pockets within the central portion of the functional area, as well as coincides with the rivers and streams that run through the functional area.

Social facilities in this functional area include:
- Library (2)
- Municipal Office (2)
- Education facility (7)
- Fixed Clinic (1)
- Fire Station (1)
- Community Hall (1)

Social Housing
There is a proposed Insitu Upgrade to the North and West of the functional area as well as a greenfield project in the east. There are also two relocation projects.

Key Interventions and LED Opportunities:
- Focus in this functional area will be on promoting residential densification and student accommodation.
- Promote commercial and mixed use activities on Old Richmond Road, to enhance Local Economic Development and promote employment opportunities.
- Upgrade Node- public realm upgrades. Taxi Rank Upgrade as well as landscaping. Make the centre more accessible, create defined parking areas.
- Provision of infrastructure services for the proposed light industrial services. Located along the Old Richmond Road is an advantage.
- Establishment of recreational facilities such as multi-purpose sport fields.
Old Richmond Road

- Upgrading- Sidewalks and lighting to improve security
- Upgrading of intersections at Old Richmond Road, Chestnut Crescent and Acorn Road, as well as the intersection between Richmond Road and Old Richmond Road.
- Green areas: Parks, piazza etc- beautification.
- Scheme amendments to include service industry, commercial and administration zones or to rezone portions of land from their current to proposed zones.
- Densification for housing at approximately 40 dwelling units per hectare.
- Access routes proposed to create accessibility or ease of access.
- Upgrading of Infrastructure- increases capacity required for water, sanitation and electricity

12.3.11 KLAARWATER FUNCTIONAL AREA

<table>
<thead>
<tr>
<th>Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>This functional area is predominantly residential in character and composed of low income housing.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Access</th>
</tr>
</thead>
<tbody>
<tr>
<td>There are no Class 1, 2 or 3 roads that traverse this functional area. This area is accessed by Intake Road in the North which splits into Impangele Road(west) and Ndwandwe Street (east). The area can be accessed via Demat road from the south east and Intake road from the south west.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Environmental constraints</th>
</tr>
</thead>
<tbody>
<tr>
<td>Riparian areas and tributaries associated with the Umlaza River (part of the Umlazi River) runs borders the south and west boundary and the Umlaza river (part of the Umlaza river) from the eastern boundary into the interior. The DMOSS sits in large pockets coinciding with all rivers and streams creating a buffer for development (no go areas). The terrain is mountainous.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Social facilities in this functional area include:</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Library (1)</td>
</tr>
<tr>
<td>- Municipal Office (1)</td>
</tr>
<tr>
<td>- Education facility (6)</td>
</tr>
<tr>
<td>- Fixed Clinic (2)</td>
</tr>
<tr>
<td>- Community Hall (5)</td>
</tr>
</tbody>
</table>
Social Housing
There is a proposed Insitu Upgrade in the north and central area and greenfields projects in the east. There is also a relocation project for those that live in the south west end of the functional area.

Key Interventions and LED Opportunities

- Focus in this functional area will be on promoting residential densification where appropriate and relocation of people as per the Housing Plan.
- The provision of educational facilities and a range of services will make residential development feasible.
- Pockets of agricultural production and agri-business activities, like an Agri-Hub to be preserved or initiated where possible.

This Conceptual Development Framework Report illustrates 11 functional areas. Each functional region indicates the potential regional functions of the Pinetown South Area. This is then translated into a series of associated development interventions and possible LED opportunities. The proposed associated land use controls and infrastructure implications for the development concept will be addressed within the following phase of the study.
13.1.1 Introduction

The current residential and commercial usage of water is 10kl/Ha/d, however this figure can most likely fluctuate up to 40kl/Ha/d depending on the actual industries (especially if a wet industry) established. The Pinetown system as well as Durban heights has for a number of decades efficiently provided the Pinetown region with adequate water but, be that as it may, capacity issues has urged the need to develop the Western Aqueduct which will be on-line by the year 2016, to ensure the continuous provision and improvement of the current water systems.

13.1.2 Water Supply System

The Durban heights Waterworks which provides water to the Inner West, Pinetown South region has reached its maximum treatment capacity, hence why the EThekwini Water Services Development Plan has been formulated as a directive to solving this issue.

According to the EWSDP, the Pinetown South Area will be augmented through the linkage of the Western Aqueduct Pipeline which has been planned to be completed by the year 2016. The proposed Western Aqueduct Pipeline will be supplied by water from the Midmar Dam treatment works which entails it, will traverse the Western supply area, Ntuzuma, Mount Moriah, KwaDabeka and Pinetown South Area. This is known as “Shed Demand” because the demand from the aforementioned areas will be shed from the Durban Heights waterworks to the Western Aqueduct Pipeline.

It’s imperative to note that the construction of the first phase from Umlaas Road to Inchanga has already been completed, which therefore leaves the second and last phase of the project to be initiated and completed within the proposed timeframe.

13.1.3 Water Storage Systems

Each particular supply district has its own reservoir, which serves the function of storing and supplying the area with water. According to the information gathered after the discussions with the EThekwini Municipality, a shortage of water storage has become a critical issue in the Klaarwater Reservoir site, which necessitates the provision of a new site to be found before the reservoir reaches capacity.

The attempt to redress the imbalances of the past, through consolidating the segregated homesteads and Townships that were demarcated in the Apartheid city, will require an efficient upgrade in the current bulk infrastructure to sustain and provide for the area as the cities become denser. The provision of the Western
Aqueduct pipeline should be a stepping stone to greater and innovative bulk infrastructure projects which will ensure a more sustainable environment for the present and most importantly the future generation.

### 13.1.4 Reticulation

The distribution system of the Western Aqueduct project is identified as the most significant load-shifting operation, where the aforementioned areas which are currently being served under pumping from the lower Mgeni System (Durban Heights WTP) are to be transferred onto the upper Mgeni System. Furthermore, ounce implementation is complete; the Western Aqueduct will be stretched to the Northern Aqueduct, with the intentions of extending the municipalities supply to areas in the north such as the Dube Trade Port development zone.

The overall reticulation network, especially in the traditionally urban areas appears to be adequate; however most of the organically established areas might not fall within the reticulation system, especially in areas such as Klaarwater and KwaNdengezi. On that notion, Klaarwater is currently initiating projects to upgrade their Reticulation system, while areas such as eMmause is in critical need of an upgrade. On the hand KwaNdengezi

### 13.1.5 Overview Summary

There current lower Mgeni Water system is supplying water adequately; however it has reached capacity therefore requiring the implementation of the Western Aqueduct project to undergo a load shifting exercise. The extension of the Western Aqueduct to the northern areas will put pressure on the Midmar Dam water resources; hence the available water will decrease over time as the demands upstream increase.

Further water resource developments will be required to serve the increasing demand of the eThekwini Municipality.

### 13.1.6 Estimated Water Demand

<table>
<thead>
<tr>
<th>Type of Development</th>
<th>Required Service Capacity per day</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td>10 kl/ha</td>
</tr>
<tr>
<td>Commercial</td>
<td>5 kl/ha</td>
</tr>
<tr>
<td>Administration</td>
<td>20 kl/ha</td>
</tr>
<tr>
<td>Industry</td>
<td>15 kl/ha</td>
</tr>
<tr>
<td>Education</td>
<td>11 kl/ha</td>
</tr>
<tr>
<td>Transport</td>
<td>5 kl/ha</td>
</tr>
<tr>
<td>Traders</td>
<td>5 kl/ha</td>
</tr>
<tr>
<td>Park/ Sports field</td>
<td>8 kl/ha</td>
</tr>
</tbody>
</table>
13.2 STORM WATER MANAGEMENT

Stormwater is the water which is accumulated from natural precipitation, such as rainwater, ground water and springwater. Stormwater Management is the relevant qualitative and quantitative methods used to regulate and efficiently operate the functions associated with planning, designing, constructing, operating, maintaining and financing stormwater systems. Stormwater Management Systems are either man-made or natural mechanisms used to collect, convey, store, control, treat, use and dispose of stormwater.

The increase in urbanisation, migration and integration between townships and cities has exerted pressure on the drainage systems, especially in local municipalities which are currently financially constrained to maintain them. It’s essential to take greater cognisance of natural hydrological patterns and processes, to develop stormwater management systems in a manner that reduces these potentially negative impacts. Such impacts can include activities known as: Downstream flooding; stream bank erosion; increased turbidity (muddiness created by stirred up sediment) from erosion; habitat destruction and Changes in the stream flow hydrograph (a graph that displays the flow rate of a stream over a period of time).

It is imperative to raise the awareness of stormwater management and the adverse effects that result from inefficient stormwater networks in cities. Heavy precipitation levels lead to strong flows of surface runoff, which eventually collects and transfers litter to water bodies, endangering aquatic life. For example, studies have been conducted which reveal that chemicals from one cigarette filtered butt had the ability to kill fish living in a one-litre bucket of water. In conclusion, this reveals that Storm water management requires everyone to participate, especially the public, in order to ensure that the natural systems which intend to regulate don’t end up exacerbating existing issues.

To regulate the impacts of surface runoff, the municipality enforced regulations whereby only 40% of a residential area is allowed to be hardened. If however a developer exceeds this percentage, he/she is liable to providing a stormwater management system to manage the efficiency of stormwater in the area. An advisable and efficient stormwater system is the soak pit, which requires maintenance every 5-15 years depending on the weather conditions in the area. Furthermore, it’s essential to ensure that impervious surfaces are provided with sufficient stormwater infrastructure, to ensure that runoff flows into the correct catchment area.

The current state of the storm water management system in the Pinetown South region is inadequate, mostly due to the extension of dwelling units beyond the proposed cadastral boundaries, which therefore causes erosion of banks and increases the flow of surface runoff. Areas which are mostly affected are Klaarwater, Dassenhoek and Savanna Park, while on the other hand Thornwood and Kwandengezi experience limitations. This issue can only be resolved through the formulation of management principles to the illegal expansion of dwelling units, where legal implications will be enforced to those who disobey the law.

13.3 SEWER INFRASTRUCTURE

The Bill of Rights, set out in Chapter 2 section 24 of the Constitution states that, everyone has the right to an environment that is not harmful to their health or well-being and 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 (iii) secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.

According to the Health Act (63 of 1977) section 34 and 38 the National Minister of Health has to make regulations which impact directly on waste management, such as the provision of sewerage and drainage systems to prevent the development at such place of conditions dangerous or detrimental to health.

The Pinetown South area is currently serviced by four treatment systems, which are namely the Dassenhoek, Kwandengezi, Umhlatuzana and Southern treatment system.
13.4 WASTE WATER TREATMENT WORKS

- **Dassenhoek Treatment Works**

The Dassenhoek Treatment system consists of a trunk which is situated north of Dassenhoek and east of KwaNdangezi, mostly permeating through the Dassenhoek rural areas. Furthermore, the Reticulation of the trunk will include areas such as Thornwood, Nagina and Luganda areas. The Current Annual Average Daily Flow (AADF) of the Dassenhoek Works is 2.2 ML/day and its optimal flow is estimated to be about 11ML/day.

- **KwaNdangezi Treatment Works**

The currently informal areas to the immediate west of KwaNdangezi will require a trunk network in the long term. The areas further west, viz. Salem and Ntshongweni, are considered not suitable for off-site treatment at the KwaNdangezi Works as they are separated from KwaNdangezi by a significant gorge. KwaNdangezi Works has a current AADF of 1.5ML/day. It is anticipated that the ultimate flow at the works will be of the order of 5ML/day.

- **Umhlatuzana Treatment Works**

EWS have planned to decommission Hillcrest Works in the medium term and transfer it’s flows to Umhlatuzana Works. This will necessitate the construction of a trunk sewer from Tshelimnyama to Hillcrest Works, with some upgrades to the existing trunk between the Umhlatuzana Works and Tshelimnyama.

The proposed trunk route, however, necessitates the pumping of Hillcrest Works flows in order to decommission Hillcrest Works. Whilst their consultants would have investigated this in more detail than the desktop nature of this master planning exercise, the necessity to pump Hillcrest Works flows should be established prior to detail design of the trunk. Umhlatuzana Works has a current AADF of 9.4ML/day. It is anticipated that the ultimate flow at the works will be of the order of 40ML/day, including the transfer of flows from Hillcrest Works.

Table 23: Current Waste Water Treatment Works

<table>
<thead>
<tr>
<th>Name</th>
<th>Design capacity MI</th>
<th>Current DWF MI</th>
</tr>
</thead>
<tbody>
<tr>
<td>KwaNdangezi</td>
<td>2.4</td>
<td>1.0</td>
</tr>
<tr>
<td>Dassen Hoek</td>
<td>5.0</td>
<td>2.0</td>
</tr>
<tr>
<td>Umhlatuzana</td>
<td>15.0</td>
<td>10.5</td>
</tr>
</tbody>
</table>

13.4.1 Estimated Sanitation Demand

Table 24: Estimated Sanitation Demand

<table>
<thead>
<tr>
<th>Type of Development</th>
<th>Required Service Capacity per day</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td>9 kl/ha</td>
</tr>
<tr>
<td>Commercial</td>
<td>4.5 kl/ha</td>
</tr>
<tr>
<td>Administration</td>
<td>18 kl/ha</td>
</tr>
<tr>
<td>Industry</td>
<td>13.5 kl/ha</td>
</tr>
<tr>
<td>Education</td>
<td>9.9 kl/ha</td>
</tr>
<tr>
<td>Transport</td>
<td>4.5 kl/ha</td>
</tr>
<tr>
<td>Traders</td>
<td>4.5 kl/ha</td>
</tr>
<tr>
<td>Park/ Sports field</td>
<td>7.2 kl/ha</td>
</tr>
</tbody>
</table>
13.5 ELECTRICITY

The Electricity Unit has the following existing electrical infrastructure in the study area:

- 275/132 kV Klaarwater Substation (intake substation from Eskom)
- 132/11 kV Marriannridge Substation
- 132/11 kV Shallcross Substation
- 132/11 kV Northdene Substation
- 33/11 kV Underwood Substation

Within the developed areas of the study area there is currently a 11 kV Distribution network, 400/220 volt reticulation as well as street lighting.

13.5.1 ELECTRICITY UPGRADES

The Electricity Unit is currently busy with the following upgrades in the study area:

1. Upgrade of Underwood Substation to 132/11 kV
2. Upgrade of 4 transformers at Klaarwater Substation - 250 MVA to 315 MVA
3. New Stockville Switching Station

There is currently no electrical infrastructure in undeveloped sections of the study area and the nature of the developments, once more detail is available, will be used to forecast the end state electrical loads for the study area. At that stage, electrical infrastructure gaps will be identified and capital plans developed for building the new infrastructure. All expansion plans will be subject to Eskom being able to supply the additional power.

13.6 TRAFFIC AND TRANSPORTATION

The western and southern parts of the study area are characterized by a relatively high unemployment rate, economically inactive and Student/Scholar population. A larger portion of the study area can be classified as being a low income area based on the low car ownership level and high public transport modal split.

There is a large amount of commuters living and working in the study area. A large proportion of trips coming into or leaving the study area are approaching/departing to the east, towards Durban CBD and the N2 which gives onwards access to Umhlanga and South Durban Basin areas.

13.6.1 ROAD BASED PUBLIC TRANSPORT

This section provides an overview of the public transport operations for the study area, with focus on the south and western portions of the study area as this is the location of the Functional Area Plans

13.6.1.1 AREAS SERVED

The main focus areas for public transport facilities and passenger feeding areas are KwaNdengezi, Dassenhoek, Mariannridge, St. Wendolins, Klaarwater, Savannah Park and the small industrial areas along Wiltshire Road. Three main public transport corridors were identified stemming from the identification of the two functional areas which were identified as part of this study:

- MR 559 – Milky Way;
- MR518 – Old Richmond Road;
- South of Old Richmond Road and Milky Way – St. Wendolins, Klaarwater and Savannah Park areas.
The above-mentioned routes are the largest feeding routes which cover a vast portion of the study area. It has been observed that road-based public transport mostly cover the high-lying areas such as MR518, MR559 and the M1. Road-based public transport do not travel along the valley areas as these roads are narrow, winding and not conducive to public transport vehicles.

13.6.1.2 Taxi Associations

Officially there are four taxi associations serving these regions:

- KwaNdengezi/Zwelibomvu and Mtamengavu Taxi Owners Association;
- Dassenhoek Taxi Owners Association;
- St. Wendolins & Klaarwater Taxi Association;
- Mariannridge Taxi Owners Association.

It would appear that their routes on their operating licences start from the designated ranks.

Site observations revealed that a number of illegal “car taxis” operate in the Klaarwater, St. Wendolins, KwaNdengezi and Dassenhoek areas. Small private vehicles offer services to the community over short distances to feed into the official public transport operations. These “car taxis” operate without permits/operating licences and some vehicles appear to be in an unroadworthy condition.

13.6.1.3 Buses

The only major bus operator to provide a service to the Pinetown South community is Marianpine Transport (Pty) Ltd trading as Olympic Bus Lines. Olympic bus services depot is located in Pinetown South, approximately 3.5 km from the M1. The area is serviced by 40 buses.

MR 559 – Milky Way PT Corridor

The following taxi ranking activities have been observed along the MR559/Milky Way corridor:

- Informal ranking by Mariannridge Taxi Association at the Milky Way/Central Crescent roundabout.
- Formal rank for Dassenhoek Taxi Association located just off a roundabout at the intersection of mr559/Un-named Road (approximately 3.7 kilometers from the M1).

Photo: Mariannridge Taxi Association – informal rank
The following table summarises the ranking facilities along the MR559/Milky Way corridor:

<table>
<thead>
<tr>
<th>Name of Association</th>
<th>Informal/ Formal Rank</th>
<th>In Use</th>
<th>Adequate Space</th>
<th>Adequate Signage</th>
<th>Shelter</th>
<th>Ablutions</th>
<th>Surface Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marriannridge</td>
<td>Informal</td>
<td>yes</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Dassenhoek</td>
<td>Formal</td>
<td>yes</td>
<td>no</td>
<td>no</td>
<td>yes</td>
<td>yes</td>
<td>Tarred</td>
</tr>
</tbody>
</table>

**MR518 – Old Richmond Road PT Corridor**

The following taxi ranking activities have been observed along the MR518 – Old Richmond Road corridor:

- Informal ranking by KwaNdengezi/ Zwelibomvu & Mtamengavu Taxi Association located next to Engen garage on Old Richmond Road
- Olympic bus depot located on MR468 in the vicinity of Acorn Road
- Formal ranking by KwaNdengezi/Zwelibomvu & Mtamengavu Taxi Association at the corner of intersection of MR518/Tom Tom Road

Photo: Dassenhoek Taxi Association – formal rank

Photo: KwaNdengezi/ Zwelibomvu & Mtamengavu Taxi Association - informal rank
Site observations revealed a high amount of public transport loading and off-loading activities in the vicinity of the intersection of MR518/Un-named road. Some public transport vehicles were observed making unsafe u-turns at this point in order to travel back in the direction of approach.

The following table summarises the ranking facilities along the MR518/Old Richmond Road corridor:

<table>
<thead>
<tr>
<th>Name of Association</th>
<th>Informal/ Formal Rank</th>
<th>In Use</th>
<th>Adequate Space</th>
<th>Adequate Signage</th>
<th>Shelter</th>
<th>Ablutions</th>
<th>Surface Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>KwaNdengezi/Zwelibomvu &amp; Mtamengavu</td>
<td>Informal (used as a transfer station)</td>
<td>yes</td>
<td>yes</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>Largely unpaved.</td>
</tr>
<tr>
<td>KwaNdengezi/Zwelibomvu &amp; Mtamengavu</td>
<td>Formal</td>
<td>yes</td>
<td>yes</td>
<td>n/a</td>
<td>n/a</td>
<td>yes</td>
<td>tarred</td>
</tr>
<tr>
<td>Olympic Bus Depot</td>
<td>Formal</td>
<td>yes</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
</tbody>
</table>
St. Wendolins/ Klaarwater/ Savannah park PT Corridor

The following taxi ranking activities have been observed along the St. Wendolins/Klaarwater/ Savannah Park corridor:

- Formal ranking by St. Wendolins/Klaarwater Taxi Association located at the corner of M1/St. Wendolins intersection.
- Informal ranking by St. Wendolins/ Klaarwater Taxi Association at the corner of Luganda/Zwelethu Roads in Klaarwater.
- Informal ranking by St. Wendolins/ Klaarwater Taxi Association at the corner of Demat Road/Isibane Grove and Grasend Road.
- Formal Rank for the Marriannridge Taxi Association located at the corner of Milky Way/MR559 and Neptune Road.

Photo: St. Wendolins/Klaarwater formal rank - Potholes at entrance and exit to rank

Photo: St. Wendolins/ Klaarwater Taxi Association – informal rank in vicinity of Luganda Road/ Zwelethu Road

Photo: St. Wendolins/ Klaarwater Taxi Association – informal rank in vicinity of Demat Road/Isibane Grove/ Grasend Road
The following table summarises the ranking facilities along the St. Wendolins/Klaarwater/Savannah Park corridor:

<table>
<thead>
<tr>
<th>Name of Association</th>
<th>Informal/Formal Rank</th>
<th>In Use</th>
<th>Adequate Space</th>
<th>Adequate Signage</th>
<th>Shelter</th>
<th>Ablutions</th>
<th>Surface Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>St. Wendolins/ Klaarwater (M1/St. Wendolins int.)</td>
<td>Formal</td>
<td>yes</td>
<td>no</td>
<td>n/a</td>
<td>yes</td>
<td>yes</td>
<td>Tar surface in need of repairs (potholes)</td>
</tr>
<tr>
<td>St. Wendolins/ Klaarwater (Luganda/ Zwelethu Rd)</td>
<td>Informal</td>
<td>yes</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>St. Wendolins/ Klaarwater (Demat Rd/Isibane Grove/ Grasend Rd)</td>
<td>Informal</td>
<td>yes</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Mariannridge</td>
<td>Formal</td>
<td>no</td>
<td>yes</td>
<td>no</td>
<td>no</td>
<td>no</td>
<td>Tarred surface</td>
</tr>
</tbody>
</table>

*Note: The Public Transport information contained within Section 13.6.1 is based on on-site observations and conversations with local residents.*
Map 44: Public Transport Operations
### 13.6.2 Integrated Rapid Public Transport Network (IRPTN)

The EThekwini Municipality’s IRPTN Network was assessed to determine the extent of services in the area. The assessment indicates that the C7 corridor which commences in Hillcrest and ends in Chatsworth via the Pinetown CBD, will pass through the study area along the M1. Feeder services from the western and eastern parts of the study area will transport passengers to the C7 corridor.

Map 45: Integrated Rapid Transport Network

### 13.6.3 Rail Public Transport

The following rail stations are located within the study area:

- KwaNdengezi
- Dassenhoek
- Situndu Hills
- Thornwood
- Mariannhill
- Klaarwater
- Shallcross
- Sarnia
- Moseley
- Northdene
- Escombe
- Malvern
- Poet’s Corner
- Crossmoor

The above-mentioned stations are located along three lines, namely Cato Ridge Line, Old Main Road line and Chatsworth line. The major rail line i.e. Cato Ridge runs along the valley area, where roads leading to the rail stations are very narrow and winding. For this reason there appears to be no real competition between road and rail services.
The 2008 Rail Census data was inspected and the boarding and alighting volumes for different periods of the day are contained in the table below. Note, these volumes are outdated and is presented for indicative purposes only.

The Cato Ridge line is by far the busier line passing through the study area as it passes through low income areas where the public transport modal split is high. The Old Main line is less busy as it passes through middle income area where the overall public transport split is lower. Among the Cato Ridge Line, the daily passenger volumes show that Thornwood is by far the busiest station with some 6400 passengers passing through it in 2008. Klaarwater (5205 passengers) and Situndu Hills Stations (4754 Passengers) are the next two busy stations.

Along the Old Main line, Malvern Station (1771 passengers) and Northdene (1228 passengers) are the two busiest stations.

At the inception meeting, a decision was made that no additional rail surveys will need to be undertaken.

Map 46: Rail Transport
13.6.4 Non Motorised Transport

13.6.4.1 Pedestrian Infrastructure
Data on pedestrian infrastructure was gathered from the eThekwini Municipality GIS Database. The data included the location of pedestrian sidewalks within the municipality. Majority of the roads within the study area do not have existing sidewalks, with few roads having sidewalks on both sides.

Map 47: Sidewalks

13.6.4.2 Pedestrian Desire Lines
On-site observations were undertaken during the peak hours to gain an understanding of the pedestrian movement patterns within the study area.

The following is a summary of pedestrian issues observed during the site observations:

- Stockville Road/ Richmond Road: Significant pedestrian activity observed (during fieldwork exercise on the 03/02/2015) at this intersection. Public Transport vehicles were observed stopping along Richmond Road to load passengers during the morning peak hour.
- Abbot Francis Road/ Richmond Road: Pedestrian activity comprising of scholars was observed in the vicinity of this intersection.
- Milky Way/ Wiltshire Road/ Richmond Road: A significant amount of pedestrian activity was observed on all approaches of this intersection.
- Old Richmond Road/ Richmond Road: A significant amount of pedestrian activity occurs at this location. Scholars were observed crossing the large volumes of traffic along Richmond Road. No sidewalks are located at this intersection. Mini-bus taxis were observed loading and driving along the emergency lane.
Higginson Highway/ Hans Dettman Highway: a significant amount of pedestrian movements occur along Higginson Highway. Illegal taxi operations (which includes taxis illegally stopping on road to pick up and drop off passengers) occur on the west approach of this intersection.

Wiltshire Road/ Hans Dettman: A significant amount of pedestrian activity occurs along Wiltshire Road during the morning peak hour.

13.7 ROAD NETWORK

The road network within the study area is heterogeneous and comprises of roads with different classifications, cross sections and ownership.

The east-west links provide mobility and access to the study area, whilst the north-south links are limited to providing mobility. Accessibility in the north-south direction is limited.

The following five major transport routes exist within the Pinetown South study boundary:

- National Route 3 (N3);
- MR85/M1/ Richmond Road;
- MR559/ Milky Way;
- M34/ Hans Dettman Highway;
- MR468/MR518/ Old Richmond Road;

The N3 between Durban and Gauteng runs in an east-west direction at the northern part of the study area providing regional accessibility. M1 and M7 serve as the regional mobility routes. MR85 (M1) links Pinetown with the southern portion of eThekwini via the Higginson Highway, providing the major access road between the study area and Pinetown.

Mr468 (Old Richmond Road) and Wiltshire Road provide a high level of accessibility in an east-west direction. M1, M34 and M48 provide a high level of mobility within the study boundary. Internal circulation is supported by MR518, St Wendolins Road, Umhlatuzana Road etc.

13.7.1.1 Road Network Classification

The study area consist of all classes of roads. The N3 and M7 are class 1 roads, whilst the M48, M1 and M34 are class 2 roads. MR468, M5 and Wiltshire road are class 3 roads. The remainder of the roads within the study area are class 4 and 5.

13.7.1.2 Road Ownership

An inspection of the road ownership within the study boundary indicates that majority of the roads are under the control of the eThekwini Municipality. The N3 is under the authority of SANRAL, whilst the M48, M7, Richmond Road, Higginson Highway and Hans Dettman Road are under the authority of the KZN Department of Transport (KZN DOT).
13.7.2 TRAFFIC VOLUMES AND NETWORK OPERATIONS

This revision of the report contains an overview of the traffic operations within the study area based on on-site observations during the morning peak hour and assessment of historical traffic counts. The next revision will contain a more detailed analysis of the network operations.

13.7.2.1 Movement Patterns
An assessment was undertaken to determine the main traffic movement patterns within the study area. These were identified based on on-site observations and inspection of the 2015 60x60 matrices (see AM Peak Hour Volume and PM Peak Hour Volume map).

13.7.2.2 Operational Issues

On-site observations were undertaken during both the morning peak hour to identify some of the key operational issues being experienced within the study area.

The assessment indicated that the following intersections experience some level of congestion:

- Richmond Road/ Stockville Road: queuing observed on all approaches of this intersection.
- Richmond Road/ Abbot Francis Road: queuing observed on the south approach of this intersection.
- Richmond Road/ Old Richmond Road: queuing observed along Richmond Road on the south approach extending to the Impangele Road/St Wendolins/ Richmond Road intersection.
- Hans Dettman Highway/ Wiltshire Road: excessive queuing occurs along Hans Dettman Highway in the vicinity of this intersection.
Map 50: AM Peak Hour Volume
13.7.3 FREIGHT

The Westmead/Mahogany industrial area and the Mariann Industrial Park are the two industrial nodes. The Westmead/Mahogany industrial area is located in the north-west quadrant of the study areas and is approximately ten times the size of Mariann Industrial park which is located close to the centre of the study area. These two developments will generate the highest amount of freight traffic.

13.7.3.1 Freight Routes

The N3 and M7 are two main freight routes within the study area, linking Durban with Gauteng. The N3 is the backbone of the SIP 2 corridor, hence the study area plays and will play a vital role in ensuring that the objectives of SIP 2 are met.

At a local level, the M1 Richmond Road (between the M13 and Wiltshire Road), Wiltshire Road and M34 Hans Dettman Highway (between M7 and Wiltshire Road) are the three routes supporting the bulk of road based traffic.

13.7.4 ACCIDENT STATISTICS

Accident Statistics for the study area were obtained from the ETA database for 2012 to 2014. The locations of these accident locations were spatially represented to determine where the current hotspots are (see accident stats map).

The results indicate that the accident hotspots are located along N3, Old Richmond Road and M1.

The areas of greatest concern along this corridor are:

- On N3 in the vicinity of the Toll Plaza
- Mariannhill Road/Henry Pennington Road/ Alexander Road/MR85
- N3/MR 85(North)
- Wiltshire Road/Milky Way
- Old Richmond Road/MR85
- Hans Dettman Highway/MR85/Facet Crescent

Traffic calming measures need to be put in place to mitigate the accident rate. Intersection upgrades more especially at the intersections of Old Richmond Road and Richmond Road, Milkyway and Richmond Road and Wilstshire and Richmond Road.

13.7.5 FUTURE ROAD UPGRADES

- Upgrade of the Mr518 Route (west end of study area- Kwandengezi) from Class 4 to Class 3.
- New Class 4 routes:
  - from Milky Way/ Mr559 route extending from Umhlatuzana Road (Tshelimnyama) through Dassenhoek to Old Richmond Road/ Mr 518 route
  - from Milky Way/ Mr559 route using Bhekiiszwe road to Old Richmond Road/ Mr 518 route
  - from Milky Way/ Mr559 route through Thornwood to Old Richmond Road/ Mr 518 route
- New link from Mercury Crescent (off Milky Way) across the railway line (bridge) to Old Richmond Road/ Mr 518 route.
- Upgrade to Umhlatuzana road to increase accessibility of the Tshelimnyama and surrounds to the interior.

The above is an indication of the proposed infrastructure required for the Pinetown South Study area. It is evident that the Water Storage systems (reservoirs and pump stations) as well as the existing infrastructure are in need of upgrade. In terms of Sanitation, the Waste Water Treatment Plants are also in need of upgrade, and all sanitation systems need to be upgraded to at least VIP’s or Urine diversion systems within the less formal areas. Storm water is also a cause for concern and the inclusion of more concretised and industrial
developments will need more efficient storm water management systems. There is a definite need to provide additional linkages to the N3 as has been indicated by the future road upgrades.

Map 52: Accident Stats

13.7.6 OPERATIONAL ISSUES

This section contains a summary of all the transport operational issues that were identified during the on-site observations. This is not an exhaustive list and is merely presented to highlight some of the key issues. A number of these issues are discussed in greater detail in previous sections.

13.7.6.1 Public Transport

- The loading and off-loading of passengers at undesignated locations along M1 Higginson Highway/Richmond Road;
- A number of illegal “car taxis” operating in Klaarwater, St. Wendolins and Dassenhoek;
- A number of informal taxi ranks identified during on-site observations;
- The formal rank for the Mariannridge Taxi Association located at the corner of Milky Way/MR559 & Neptune Road is unused.

13.7.6.2 NMT

- Inadequate pedestrian infrastructure along M1 Richmond Road, Abbot Francis Road, Wiltshire Road and M34 Hans Dettman Highway which were identified to be the core pedestrian movements;
- Scholars and pedestrians observed crossing busy streams of traffic along M1 Richmond Road and M34 Hans Dettman Highway.
13.7.6.3 Traffic Volumes and Network Operations
During the morning peak hour the demand on the south to north movement, along the M1 Richmond Road and M34 Hans Dettman Highway is high and operating at or close to capacity resulting in slow journey times and long queues at intersections. Queuing and congestion occurred at the following intersections:

- Stockville Road/ Richmond Road
- Abbot Francis Road/ Richmond Road
- Old Richmond Road/ Richmond Road
- Higginson Highway/ Hans Dettman Highway
- Wiltshire Road/ Hans Dettman Highway

13.7.6.4 Freight
The N3 and M7 were identified as the two main freight routes with local support from M1 Richmond Road, Wiltshire Road and M34 Hans Dettman Highway.

13.7.6.5 Accidents
The areas of greatest concern were identified to be:

- Stockville Road/ Richmond Road on N3 in the vicinity of the Toll Plaza
- Mariannhill Road/Henry Pennington Road/ Alexander Road/MR85
- N3/MR 85(North)
- Wiltshire Road/Milky Way
- Old Richmond Road/MR85
- Hans Dettman Highway/MR85/Facet Crescent
Map 53: Operational Issues for PEDS, Traffic Etc.
### 13.7.7 Summary of Findings and Key Issues

The Pinetown South study area consists of low income residential areas to the west and south. Large industrial activities are located to the north of the study area with a smaller industrial development located in the center of the study boundary. Medium income residential with limited commercial occur in the east of the study area.

A review of the past studies has shown that there are a number of land use and transportation proposals for the study area. Some of the key transportation projects include:

- N3 upgrade from N2 interchange to M1 Richmond Road
- N3 upgrade from M1 Richmond Road to Cato Ridge
- Truck Stop in the vicinity of Richmond Road/N3 interchange
- C7 IRPTN corridor passes through study area along M1
- MR579 new link from Umlazi to Pinetown via M34 Hans Dettman Highway.

An inspection of the travel behaviour of residents within the study area indicates that the low car ownership and high public transport modal split is indicative of a low income area.

A large amount of commuters live and work within the study area. A large proportion of trips approach or depart to the east towards the Durban CBD and the N2 which gives access to the areas of Umhlanga and South Durban Basin.

The main public transport corridors were identified to be:

- MR 559 – Milky Way;
- MR518 – Old Richmond Road;
- South of Old Richmond Road and Milky Way – St. Wendolins, Klaarwater and Savannah Park areas

The following four taxi associations serve this region:

- KwaNdengezi/ Zwelibomvu and Mtamengavu Taxi Owners Association;
- Dassenhoek Taxi Owners Association;
- St. Wendolins & Klaarwater Taxi Association;
- Mariannridge Taxi Owners Association.

Marianpine Transport (Pty) Ltd trading as Olympic Bus Lines is the only major bus operator within the area with a depot located within the study area.

The informal, formal and un-used taxi ranks were identified based on on-site observations. Surveys which will be undertaken by the Public Transport Planning Department will be included in the next revision of the status quo assessment.

The Cato Ridge rail line is by far the busier line passing through the study area as it passes through low income areas where the public transport modal split is high. Along the Cato Ridge line the daily passenger volumes show that Thornwood is by far the busiest station.

The core pedestrian movements were identified to be along M1 Richmond Road, Abbot Francis Road, Wiltshire Road, M34 Hans Dettman Highway. Pedestrian infrastructure along these routes is limited.

The road network traversing the study area is heterogenous comprising of all classifications, cross sections and ownership. The east-west links provide mobility and accessibily, whilst the accessibilty to north-south alignment is limited.

The traffic demand during the morning peak is generally from south-north, towards the N3, Westmead and Pinetown. Observations indicate that the M1 Richmond Road and M34 Hans Detmann Highway is currently
operating at or close to capacity during this period and is in need of capacity enhancements. Traffic operational issues (conflict/congestion) were observed at the following intersections during the morning peak hour:

- Stockville Road/ Richmond Road
- Abbot Francis Road/ Richmond Road
- Old Richmond Road/ Richmond Road
- Higginson Highway/ Hans Dettman Highway
- Wiltshire Road/ Hans Dettman Highway

In conclusion, there are a number of issues being experienced within the study area. It is believed that if the transport network upgrades identified in previous studies are implemented, then a number of these issues will be automatically addressed.

### 13.8 TRANSPORT ISSUES TO BE ADDRESSED

#### 13.8.1 Traffic And Transport Core Issues

This section contains a summary of all the transport operational issues that were identified during the on-site observations. This is not an exhaustive list and is merely presented to highlight some of the key issues. A number of these issues are discussed in greater detail in previous sections.

#### 13.8.2 Public Transport

- The loading and off-loading of passengers at undesignated locations along Higginson Highway and Richmond Road;
- A number of illegal “car taxis” operating in Klaarwater, St. Wendolins and Dassenhoek;
- A number of informal taxi ranks identified during on-site observations;
- The formal rank for the Marianridge Taxi Association located at the corner of Milky Way/MR559 & Neptune Road is unused.

#### 13.8.3 NMT

- Inadequate pedestrian infrastructure along Richmond Road, Abbot Francis Road, Wiltshire Road, Hans Dettman Highway which were identified to be the core pedestrian movements;
- Scholars and pedestrians observed crossing busy streams of traffic along Richmond Road and Hans Dettman Highway.

#### 13.8.4 Traffic Volumes and Network Operations

- Queuing and congestion occurred at the following intersections:
  - Stockville Road/ Richmond Road
  - Abbot Francis Road/ Richmond Road
  - Old Richmond Road/ Richmond Road
  - Higginson Highway/ Hans Dettman Highway
  - Wiltshire Road/ Hans Dettman Highway

#### 13.8.5 Freight

- The N3 and M7 were identified as the two main freight routes with local support from Richmond Road, Wilshire Road and Hans Dettman Highway.
13.8.6 Accidents

The areas of greatest concern were identified to be:

- Stockville Road/ Richmond Road On N3 in the vicinity of the Toll Plaza
- Mariannhill Road/Henry Pennington Road/ Alexander Road/MR85
- N3/MR 85(North)
- Wiltshire Road/Milky Way
- Old Richmond Road/MR85
- Hans Dettman Highway/MR85/Facet Crescent
SECTION 4: LAND USE GUIDELINES

14 DEFINING LAND USE MANAGEMENT

Land use management encapsulates the following activities:

- The regulation and management of land-use changes;
- The regulation and management of ‘green fields’ land development, i.e. the development of previously undeveloped land;
- The regulation of the subdivision and consolidation of land parcels;
- The regulation and management of the regularization and upgrading process of informal settlements, neglected urban centres and other areas requiring such processes; and
- The facilitation of land development through the more active participation of the municipality in the land development process, especially through public-private partnerships. Land use management plays an important role by responding to a range of impacts and concerns relating to the transformation of the natural and built environment, including:
  - Impacts on the natural environment and environmental systems, including loss of open space and natural habitat, catchment management and water quality, soil erosion, loss of agricultural land, food production and food security, access to open spaces for recreation, cultural and educational purposes;
  - Health and safety concerns including access to sufficient ventilation and light, the provision of adequate water and sanitation services, safe building construction, noise and air quality, adequate access for fire and ambulance services, safe traffic conditions, site and building design that can minimise crime.
  - Efficiency of infrastructure provision and traffic management, including the provision of adequate facilities for loading, parking, pedestrians and public transport, and consideration of development on traffic movement.
  - Promotion of amenity in development, including landscape quality and built form aesthetics, privacy and views.
  - Social considerations including the impact of development on women, children, the elderly and disadvantaged people, and the adequate provision of social facilities.
  - Protecting architectural, historical, cultural and environmentally important land and buildings. Land use management also promotes specific social, economic and environmental objectives of government that may be neglected by the private land development market.

Government interventions to achieve such objectives can include investment promotion, public-private partnerships, relaxing of development controls in certain areas, rating policy, development levies, etc. The desirability of an area for economic development can be maximised by land use management interventions, for example by managing adjoining and ancillary uses, protecting important view sheds and by controlling traffic and access.
14.1 GENERIC LAND DEVELOPMENT PRINCIPLES

The following land use management principles should be used to guide site development planning and design, and the assessment of development proposals in the area.

14.1.1 SUSTAINABILITY

The resources making up the natural and built environment should be sustainably managed and used. Land use and development decisions must promote a harmonious relationship between the built and the natural environment. The long-term availability of physical, social and economic resources to support development should be thoroughly investigated. The life cycle costs of land development and its likely side effects on the environment, community, and the economy need to be understood and taken into account to sustain its benefits, while minimising or mitigating any likely negative impacts. Land use management norms based on this principle are:

- The use and development of land should promote the protection, enhancement and management of the natural environment in the interests of long term sustainability;
- Environmentally sustainable land development practices and processes should be employed in all developments.
- Land development should promote the establishment and maintenance of viable communities;
- Land development should meet the basic needs of all citizens;
- Land may only be used or developed in accordance with legal processes;
- Decisions affecting land development and land use should firstly take into account national, provincial or local interests as recorded in approved policy and legislation;
- Land development and planning processes must integrate disaster prevention, management or mitigation measures;
- Decision-making must ensure the safe utilisation of land by taking into consideration risk factors such as unstable geological conditions and flood lines;
- Land which is currently in agricultural use should only be reallocated to other uses where real need exists and prime agricultural land should remain in production.

14.1.2 EQUALITY

Everyone affected by land use management and land development actions or decisions must enjoy equal protection and benefits. In the past the planning and management of land use has been characterised by extreme inequality. Land use management decision-making must be equitable and must address the inequitable legacy inherited from decades of planning in the interests of a racial minority.

Land use management norms based on this principle are:

- Members of communities affected by land development should actively participate in the process of land development;
- Public involvement in land use planning and development processes must be inclusive of all persons and groups with an interest in the matter being decided;
- Land use regulators and planning authorities must ensure that benefits and opportunities flowing from land development are received by previously disadvantaged communities and areas;
- The appropriateness of land use must be determined on the basis of its impact on society as a whole rather than only the applicant or immediate neighbours.
• Each development proposal should be judged on its own merits and no particular use of land should in advance or in general be regarded as being less important or desirable than any other use of land.
• Land development should result in security of tenure, provide for the widest possible range of tenure alternatives, including individual and communal tenure;
• Where land development takes the form of upgrading an existing settlement, it should not deprive beneficial occupiers of homes or land or, where it is necessary for land or homes occupied by them to be utilised for other purposes, their interests in such land or homes should be reasonably accommodated in some other manner.

### 14.1.3 Efficiency

*The desired result of land use and/or development must be produced with the minimum expenditure of resources.*

Optimising land use management and development opportunities requires efficiency in institutional arrangements and operations, adopted procedures, the settlement form or pattern, and the utilization of man-made or natural resources during land planning and development.

Land use management norms based on this principle are:

• Land use planning and development should promote the development of compact human settlements, combating low density urban sprawl;
• The areas in which people live and work should be close to, or integrated with, each other;
• Land development should optimise the use of existing resources including resources such as bulk infrastructure, roads, transportation and social facilities;
• Land development should take place within the fiscal, institutional and administrative means of the municipality;
• The contributions of all sectors of the economy (government and non-government) to land development must be encouraged and optimised so as to maximise the municipality’s capacity to undertake land development;
• The municipality should co-ordinate the interests of the various sectors involved in or affected by land development so as to minimise conflicting demands on scarce resources.

### 14.1.4 Integration

*The separate and diverse elements involved in development planning and land use should be combined and coordinated into a more complete or harmonious whole.* The principle of integration reflects the need to integrate systems, policies and approaches in land use planning and development, in two areas. Firstly it requires that the planning process is integrated, taking into account the often disparate sectoral concerns, policies and laws and their requirements, and reaching conclusions that are efficient and sustainable from a management and governance point of view. Secondly it requires an integrated spatial outcome, one that breaks down not only the racial and socio-economic segregation that characterises our city, but which also strives for the integration of different land uses, places of living with places of working and shopping and relaxing.

Land use management norms based on this principle are:

• Land use planning and development decisions should take account of and relate to the sectoral policies of other spheres and departments of government;
Land development should contribute to the correction of the historically distorted spatial patterns of settlement in the Republic and to the optimum use of existing infrastructure in excess of current needs;

- Land use and development should promote efficient, functional and integrated settlements;
- Residential and employment opportunities should be located in close proximity to, or integrated with, each other;
- Land use and development should promote racial integration;
- Land use and development should promote mixed use development.
- A diverse combination of land uses, also at the level of individual erven or subdivisions of land, should be promoted;
- Land use and development should be determined by the availability of appropriate services and infrastructure, including transportation infrastructure;
- Land development in rural and urban areas should be promoted in support of each other.

Large gated estates (business park or residential) tend to have a negative impact on city form, connectivity and integration.

### 14.1.5 Fair and Good Governance

*Land use management must be democratic, legitimate and participatory.* Land use management is a centrally important government function, directly affecting the lives of all people. It is therefore particularly important that it is characterised by fairness and transparency and that people are afforded a meaningful right to participate in decisions. Where land development projects are initiated by the private and nongovernmental sectors, there must be procedures that ensure that interested parties have an opportunity to express their views or to object. In the interests of good governance it is essential that there be effective coordination between the different sectors and spheres involved in land use and development. The greater the coordination, cooperation and transparency of the planning process within government the greater will be the prospects of members of the public being able to engage with the decision making in a constructive manner.

Land use management and land development norms based on this principle are:

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

The following set of general land use and planning guidelines are also provided to assist in guiding sustainable developments within the LAP area and within the context of the environmental services found therein:

- **Aim for consolidation of land uses/densification of existing settlements** within districts to avoid fragmented development or sprawl, which may necessitate creating infrastructure or road linkages through sensitive environments.
- **Aim to improve the positioning of land uses** - for example commercial or office space adjacent to industrial areas (buffer residential areas), high density residential areas adjacent to commercial uses, low density residential adjacent to agricultural or ecological/conservation areas - certain land uses act as buffers between non-compatible land uses.
- **The type of transportation network and road hierarchy** has an influence in terms of attracting or discouraging certain land uses.
- **Setback distances between residential areas and industrial areas** depends on nature of industrial activity and associated health and safety risks, use of open spaces as buffer zones.
- **Maintenance of open spaces** in residential areas, identification of open space linkages to ensure connectivity and to facilitate ecological function, wildlife corridors.
- Given that a large proportion of the developable land slopes towards the estuary and flood line areas, **management of storm water emanating from industrial/commercial sites would need to be strictly controlled** in terms of volumes and quality.
- **Vegetation belts in sensitive areas will need to be maintained where possible**, to prevent erosion, limit direct impacts on the estuarine system and maintain ecological function.

14.3 BROAD ENVIRONMENTAL GUIDELINES

This section aims to outline the environmental reporting requirements relating to the proposed land uses, specific projects (where available), the proposed approach and other reporting requirements, based on the intended development framework and the associated proposed land uses.

1. **Rivers**, 100 year floodplains and delineated wetlands to be either zoned as public or private open space, or subject to the registration of a Non-user Conservation Servitude thereon.
2. **Protected areas** (nature reserves) to be appropriately zoned as nature reserves, public or private open space.
3. **Core and Secondary ecosystem services supply areas** (see Table 1 and Map 1) to be incorporated into the Open Space System Overlay, within which development is to be limited and controlled as follows:
   a. Core Ecosystem Service Supply Areas should not be developed or transformed, and rather prioritised for rehabilitation/restoration.
   b. All development proposals within the Open Space System Overlay must be subject to an environmental impact assessment and development options analysis, the purpose of which is to determine whether/what type, form and scale of development is possible in the Open Space System Overlay without degrading local or regional ecosystems and ecosystem services supply, and to refine the development design for minimised ecological impact and optimised ecological benefit.
4. All proposed development in areas potentially containing **North Coast Grassland, forests, wetlands or other natural habitats**, including those important for the protection of scarce and threatened species, that are not contained within the Open Space System Overlay, must be subject to environmental impact assessment that includes a detailed delineation of natural habitats, determination of appropriate non-developable buffers of such habitats, an assessment of the impact of any proposed natural habitat transformation on local and regional ecosystems and ecosystem services, and if appropriate - mitigation measures and offsets.
5. **All new and existing developments** should be designed to attenuate stormwater runoff on site to mitigate flooding risk to downstream areas.

6. **All new potentially polluting land uses** must be subject to environmental impact assessment and options analysis, the purpose of which is to determine appropriate development design and technologies to prevent pollution of natural ecosystems and the atmosphere locally and regionally.

7. No new development should be permitted within the **200 year floodline**.

8. **All development approvals** must include a condition requiring landowners to remove invasive alien plants from the property prior to development, and to maintain the property free of invasive alien plants in perpetuity.

9. **Lower development densities** adjacent to sensitive environmental areas (including the Open Space System Overlay) e.g. wetlands, rivers, grasslands and forests.

Table 25: Datasets used to map the Ecosystem Services Supply Management Areas

<table>
<thead>
<tr>
<th>SOURCE</th>
<th>CORE ECOSYSTEM SERVICES SUPPLY AREAS</th>
<th>SECONDARY ECOSYSTEM SERVICES SUPPLY AREAS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nature Reserves</td>
<td>Nature Reserves</td>
<td></td>
</tr>
<tr>
<td>Durban Metropolitan Open Space System (D'MOSS)</td>
<td>D'MOSS</td>
<td></td>
</tr>
<tr>
<td>eThekwini Rivers</td>
<td>Rivers</td>
<td></td>
</tr>
<tr>
<td>eThekwini Wetlands</td>
<td>Wetlands</td>
<td></td>
</tr>
</tbody>
</table>
| Buffers | | 1:100 Year Floodline  
32m on rivers;  
32m on wetlands;  
50m on forests; |

Map 54: Ecosystem Services Supply
14.3.1 Environmental Reporting Requirements

Summary of main triggers under NEMA EIA regulations:

- Certain activities require environmental authorisation (regardless of land use/ nature of activity) based on proximity to environmental features:
  - Within 32m of watercourse, incl. wetland, river, dam, etc.
  - Within the estuaries
  - Within Critical Biodiversity Areas (CBAs)
  - Within DMoss areas, conservation areas or POS

- Certain types of activity require environmental authorisation (within certain thresholds):
  - Desalination Plant
  - Electrical Infrastructure
  - Roads
  - Desalination Plant
  - Storage/ handling and bulk transportation of dangerous goods
  - Activities requiring Atmospheric Emissions License (AEL)/ Waste Management License (WML) / Water Use License Application (WULA) or other permits

14.3.2 Specialist Study Requirements

The following guidelines with regards to specialist involvement have been made in relation to previous experience with similar projects. The competent authority or other relevant authority may request additional specialist studies through the EIA/ Basic Assessment process.

- For proposed sites greater than 0.5ha or sites which include known evidence or potential for cultural/ heritage sites or graves, a Heritage Impact Assessment would be required;
- In areas with steep slopes (greater than 1:5), it is recommended that a storm water management plan is compiled and erosion management measures are implemented;
- Wetland assessments may be required by DWA for proposed sites within 100m of National Freshwater Ecosystem Priority Areas (NFEPA) wetlands. In these cases, a functional wetland assessment may be required to support any applications. DWA may require delineation and functional assessment for any activity within 32m of any wetland;
- A social impact assessment may be required for sites in close proximity to existing developed areas; and
- A visual impact assessment may be required for sites which are highly visible from major routes/ developed areas or activities that are in contrast to existing surrounding land uses.

14.3.3 Additional Permitting/ Licenses

Additional permitting or licensing processes in terms of other environmental legislation may be required. These include:

- Permit application in terms of the National Forests Act for activities in natural forests, or activities that impact on protected tree species. Forests are also protected through a 40m buffer (EKZNW may require additional measures to be taken);
- Water uses under section 21 of the National Water Act, 1998, will require water use license processes to be undertaken. This includes authorisation for any development any activity closer than 500 metres upstream or downstream from the boundary of any wetland or estuary, which is considered to trigger activities 21 (c) and (i) in terms of the Water Use Authorisation – External Guideline, DWA, 2007);
- Activities related to the storage and handling of liquid and solid waste, including sewage treatment plants, may require a Waste Management License in terms of the Waste Act. General waste requires Basic Assessment while hazardous waste requires a full EIA process;
With regards to potential for discharge of storm water into estuaries, it should be noted that in terms of the Integrated Coastal Management Act, 2008 (Act No. 24 of 2008), no person may discharge effluent that originates from a source on land into coastal waters except in terms of a general authorisation contemplated in subsection (2) or a coastal waters discharge permit issued under this section by the Minister after consultation with the DWA in instances of discharge of effluent into an estuary; and

- Certain listed industrial processes require application for an Atmospheric Emissions License in terms of the Air Quality Act.

15 NORMS & STANDARDS FOR PROVISION OF FACILITIES

The Pinetown South Area is characterised by high unemployment levels, low levels of income and low levels of basic services.

There are interrelationships or linkages between the facilities and they can be located close to, or clustered with, one another as indicated in Figure 34. Based on this matrix, public facilities will be clustered which should increase accessibility to required services, maximise on the available infrastructure as well as prevent the duplication of facilities.

Source: CSIR Guidelines for Human Settlement Planning and Design

Public facilities serve different purposes and therefore the location of a public facility will depend on the specific function that it performs and the size of the area that they serve. It is not always feasible to provide
facilities based on settlement clusters because of the sparsely populated landscape. This is why it is important to determine the order of facilities which assists in establishing what is feasible.

Table 26: Category of public Facilities identifies the required public facilities and the level in which they should be provided, this gives a clear indication as to where these facilities should be located.

The following elements should be taken into consideration when

- Population size and number of households
- Areas characteristics and community aspirations
- Location of the area concerned
- the usage rates of nearby community halls;
- accessibility of nearby community halls to subject area; and
- availability of alternative accommodations for community activities and their ease of access.
- availability of existing community halls or similar facilities nearby;

Public facilities can be classed as higher-order, middle order, lower-order and mobile, depending on the size of the area that they serve, the population and population density.

<table>
<thead>
<tr>
<th>CATEGORY OF FACILITIES</th>
<th>REQUIRED FACILITIES</th>
</tr>
</thead>
</table>
| Higher-order public facilities | Tertiary facilities  
These facilities serve entire regions and are located in major centres. |
| Middle-order public facilities | Primary school  
These facilities serve a number of communities and should be located in high density areas (minimum population of 5000). |
| Lower-order public facilities | Crèche/nursery school  
These are facilities which are utilised by a single or a limited number of residential communities on a more frequent basis. |
| Mobile public facilities | Mobile clinics  
These are facilities which move from one location to another, serving a large number of communities where it is not feasible to have the required facilities on a permanent basis. |

It is not always feasible to provided facilities for each settlement, mainly because of low population and sparse settlements, in this case the following elements should be taken into consideration:

- Higher- and middle-order public facilities should be located in dominant positions relative to open space and movement systems - especially those that cater for public transport. This has the effect of
strengthening their importance and significance for the community as they become symbolic focal points within settlements.

- Higher-order and middle-order public facilities should be located on stop-start activity streets, in order to create thresholds high enough to support facilities and also ensure that the people can gain direct and easy access to facilities.
- Public facilities should be placed in positions of maximum exposure along major transportation routes. The exposure of these facilities enables complex patterns of facility use between different neighbourhoods and serves to integrate rather than isolate residential neighbourhoods.
- Public facilities that need to be visible and accessible to the greatest number of people, but located in a safe, quiet environment require easy access to public transportation stops and interchanges, but should be locate a block or two back from intense activity routes (i.e. primary and secondary schools, day-hospitals and clinics).
- Public facilities that need to be accessible to pedestrians and that need safe and quiet surroundings should be located within the residential area within walking distance of the resident’s homes (i.e. crèches and churches).

The preceding table indicates the required facilities and required minimum erf size. The table also the best location for such facilities based on the population that can access the facility as well as proximity to public transport routes and bus stops.

### Table 27: Public Facilities Allocation

<table>
<thead>
<tr>
<th>PUBLIC FACILITY</th>
<th>LOCATION</th>
<th>MINIMUM SIZE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Educational Facilities</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crèche</td>
<td>These are community-specific facilities which should be within walking distance of residential units.</td>
<td>130 m$^2$</td>
</tr>
<tr>
<td>Primary school</td>
<td>Should be located within easy reach of the local areas which it is intended to serve. As a result it needs to be located close to, but not necessarily along, a public transport route.</td>
<td>2.4 ha</td>
</tr>
<tr>
<td>High School</td>
<td>Schools should be situated on a major transport route with public transport stops.</td>
<td>4.6 ha</td>
</tr>
<tr>
<td><strong>Health Facilities</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mobile clinic</td>
<td>Mobile facilities which move from community to community - therefore there is no fixed location, but must be accessible by foot</td>
<td>n/a</td>
</tr>
<tr>
<td>Clinics</td>
<td>Clinics should be accessible to the greatest number of people and as such should be located close to public transport stops.</td>
<td>0.1 ha per 5000 people</td>
</tr>
<tr>
<td><strong>Cultural Facilities</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Library</td>
<td>Should be easily accessible, preferably on main thoroughfare convenient to main traffic and transportation routes.</td>
<td>130 m$^2$</td>
</tr>
<tr>
<td>Community centres</td>
<td>A community centre provides a variety of services to a number of residential communities and, as such, it should be easily accessible to these communities, preferably on a main thoroughfare in close proximity to public transport stops.</td>
<td>5 000 m$^2$</td>
</tr>
<tr>
<td>Religious Facilities</td>
<td>The location will generally depend on the community being served and the existing facilities in the area surrounding the site</td>
<td>150 m$^2$ - 3 000 m$^2$</td>
</tr>
<tr>
<td><strong>Administrative facilities</strong></td>
<td>These facilities require high levels of exposure and must be easily accessible by public transport with a maxim travel time of 30min</td>
<td>3 000 m$^2$</td>
</tr>
<tr>
<td>Municipal offices/pay points</td>
<td>As such, they should be located along activity</td>
<td>500m$^2$</td>
</tr>
<tr>
<td>Post offices</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Police stations  | Where possible, people should be able to access their community police station on foot - a walking distance of 1.5 km is recommended | 0.1 ha

Recreational Facilities

Sports field  | These can be provided for in the same vicinity as schools and should be located within 500 m to 1,500 m of other user groups | 0.8 ha (accommodating mixed activities i.e. soccer, netball)

Parks  | As smaller parks are likely to be used on a daily basis by children, elderly people and workers, and are accessed by foot, they should be located within 300 m to 700 m of users. | 450m²

Source: CSIR Guidelines for Human Settlement Planning and Design

The standards for the provision of community facilities recommended in this document are also based upon the growth or concentration of population in a given area. The standards have been formulated in the light of conditions in existing urban areas or envisaged for new towns, where large population is or will be concentrated. Special consideration must also be given to the provision of community facilities in the less densely populated areas. Many of these are unlikely to reach a population which would warrant the provision of facilities on the basis of the standards recommended. In these areas, certain facilities such as clinics must be provided at a smaller scale and clustered with a number of other facilities. The table below is an indication of the required number of facilities within the study area, and the actual number of facilities within the study area. There is a shortage of educational facilities, the most prevalent shortage within the early childhood schooling years. There is also a significant shortage of health care facilities, 52 in total.

<table>
<thead>
<tr>
<th>WARD NUMBER</th>
<th>POPULATION</th>
<th>CRECHE</th>
<th>PRIMARY SCHOOL</th>
<th>SECONDARY SCHOOL</th>
<th>LIBRARY</th>
<th>COMMUNITY HALL</th>
<th>CLINICS</th>
<th>POST OFFICE</th>
<th>FIRE STATION</th>
<th>POLICE STATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>27055</td>
<td>5</td>
<td>7</td>
<td>2</td>
<td>1</td>
<td>3</td>
<td>5</td>
<td>2</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>13</td>
<td>35708</td>
<td>7</td>
<td>9</td>
<td>3</td>
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<td>2</td>
<td>1</td>
<td>3</td>
<td>5</td>
<td>2</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>15</td>
<td>39344</td>
<td>8</td>
<td>10</td>
<td>4</td>
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<td>4</td>
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<td>4</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>16</td>
<td>36576</td>
<td>7</td>
<td>9</td>
<td>3</td>
<td>1</td>
<td>4</td>
<td>7</td>
<td>3</td>
<td>1</td>
<td>1</td>
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<td>17</td>
<td>36731</td>
<td>7</td>
<td>9</td>
<td>3</td>
<td>1</td>
<td>4</td>
<td>7</td>
<td>3</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>63</td>
<td>34023</td>
<td>7</td>
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<td>3</td>
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<td>3</td>
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<td>71</td>
<td>36394</td>
<td>7</td>
<td>9</td>
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<td>7</td>
<td>3</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>72</td>
<td>39324</td>
<td>8</td>
<td>10</td>
<td>4</td>
<td>1</td>
<td>4</td>
<td>8</td>
<td>4</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>TOTAL POPULATION</td>
<td>311984</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| REQUIREDSHORTEAGE | 62   | 78   | 28  | 10  | 31  | 62  | 28  | 5  | 12 |
| EXISTING FACILITIES | 5    | 51   | 20  | 12  | 35  | 10  | 10  | 2  | 3  |
| SHORTAGE     | 57   | 27   | 8   | -2  | -4  | 52  | 18  | 3  | 9  |
16 PROPOSED LAND USE CONTROLS WITHIN THE FUNCTIONAL AREA

The Pinetown South area falls under the Inner West Region; hence it is incorporated into the Consolidated Inner West Scheme for eThekwini. Since this scheme is a consolidated of previous schemes, there are different zonings for different area. The Pinetown South area incorporates the following area zonings:

- Pinetown
- Savannah Park 2 & 3
- Burlington Station
- Burlington Greenfields
- Mazakhele
- Queensburgh
- Mariaanhill
- Mozambique
- Ekuphumuleni
- Sinqobile
- Umbhедula
- Atlantis
- Klaarwater
- Tshelimnyama
- St Wendolins
- Mawelewele
- Mpola
- Sandton
- Sithundu Hills
- Pumpele
- Nsizwakazi
- Bhekisizwe
- Kwandengezi
- Shallcross
- Luganda
- Lower Tnornwood
- Welbedagt

There are still some areas within the study area that are still under LFTEA and have no zoning attached to them. Although there is no zoning applicable within the LFTEA for the Pinetown LAP area for the time being, the development interest anticipated within the identified districts may require further guidance to the intended development controls for various land use in order to both guide developers as well as the assessment of application by the eThekwini Planning Department. For this purpose the zonings and associated controls within the Consolidated Inner West Scheme for eThekwini were considered for each of the districts in order to determine whether it would assist in guiding and control the intended broad land uses, or whether additional areas specific zoning controls need to be formulated.

The Consolidated Inner West Scheme is notably efficient, as it already has existing zones, and land use controls that could be extended onto the areas that are not zoned. The assessment and proposed main zonings per functional area is discussed below:

16.1 FUNCTIONAL AREA 1: WESTMEAD INDUSTRIAL

Functional area 1 has a scheme covering the whole functional area. This area has an important function as it is the main Industrial centre in the Pinetown South Region. The predominant land use is Industrial and is aptly zoned as General Industry or Light Industry. There is a combination of other zones which includes Residential, Conservation Reserve as well as Public Open Space.

The salient points of this functional area are that:

- Its highly accessible: N3 and M13 and M19
- It is characterised as and industrial hub
- Contains adequate bulk Infrastructure

The combination of the above factors provides an opportunity to extend the Industrial zone through certain portions of the Functional area (north of the existing industrial area and south of the N3).

Key Interventions and LED Opportunities:
• Focus in this functional area will be on promoting industrial development.
• Focus by the Human Settlements department on the relocation of people in the Motala Farm area will be essential to promoting a better lifestyle for these people.
• Pockets of environmentally sensitive land need to be conserved and programmes aimed at identification of these areas and a stewardship approach will be necessary to balance the industrial activities with the environment.
• Retain the existing Industrial usage within Westmead and Mahogany Ridge.
• A proposed clean-up operation is required in Motala Farm: Enforcement issue.

16.2 FUNCTIONAL AREA 3: MARIANNHILL

The Mariannhill Functional area is situated in the North of the study area and has a cultural character, and falls within the Mariannhill and Pinetown zoning area. Mariannhill contains one of the only areas within the whole of Pinetown South to have a dedicated agricultural zone. This functional region is composed of the Cathedral which forms a part of a Cathedral route (cultural tourism). There's is a significant amount of green areas with the only hospital for the entire Pinetown South Study area.

This functional area is traversed by the M1- North to South (Class 2), Rudloff Road (Class 4) toward the East and Umhlatuzana Road (Class 4) toward the North East.

Key Interventions and LED Opportunities:

• Focus in this functional area will be on promoting cultural, agricultural and environmental activities.
• Pockets of environmentally sensitive land need to be conserved and programmes aimed at identification of these areas and a stewardship approach will be necessary to balance the industrial activities with the environment.
• Agricultural production and agri-business activities, like an Agri-Hub to be preserved or initiated where possible.

16.3 FUNCTIONAL AREA 4: HATTON ESTATE

Functional area 4 is predominantly residential area, with some support facilities and local commercial opportunities, and falls within the Pinetown zoning area. The M7 and N3 are the primary routes through the study area, providing access to the site.

Key Interventions and LED Opportunities:

• Pockets of environmentally sensitive land need to be conserved and introduce programmes aimed at identification of these areas.
• Encourage commercial development in areas of greater potential (towards the western boundary of Functional area 4)
• Upgrade and maintain existing service infrastructure to ensure on-going capacity is maintained.
16.4 FUNCTIONAL AREA 5: MARIAAN

The Mariaan functional area has a diverse land use types, these includes social, residential, commercial and industrial land uses and falls within the Pinetown zoning area. Southmead Industrial Park is an area of investment as there is still more land for further development.

Mariaan is accessed via the N3 providing primary access into the study area. It is also serves as the northern border of the study area. Wiltshire road connects the residential area to the industrial area, providing an easy access to the working opportunity and for those who reside and work within Mariaan.

Key Interventions and LED Opportunities:

- Focus in this functional area will be on promoting cultural, agricultural and environmental activities.
- Pockets of environmentally sensitive land need to be conserved and programmes aimed at identification of these areas and a stewardship approach will be necessary to balance the industrial activities with the environment.
- Agricultural production and agri-business activities, like an Agri-Hub to be preserved or initiated where possible.
- Upgrade and maintain existing service infrastructure to ensure on-going capacity is maintained.
- Split the Industrial area, and create two separate yet inter-related Precincts: Industrial Precinct and a Mixed Use Precinct.
- This concept allows for greater differentiation for land use and activities surrounding Wiltshire Road.

16.5 FUNCTIONAL AREA 6: QUEENSBURGH

The character of Queensburg is mainly residential in nature with a mixture Industrial, social and commercial activities and falls within the Queensburgh and a small extent on the west of the functional area falls within the Pinetown zoning area. It also plays an important role of environmental conservation (North Park Nature Reserve).

Queensburg functional area is accessed via the M7 which runs through the study area from west to east providing a clear access and public transport route. The railway station runs parallel to the M7 with 5 passenger’s railway station (Northdale, Escombe, Malvern, Poet’s corner and Moseley train stations).

Key Interventions and LED Opportunities:

- Focus in this functional area will be on promoting cultural, agricultural and environmental activities.
- Pockets of environmentally sensitive land need to be conserved and promote tourism development at the North Park Nature Reserve and also includes facilities that accommodate people with disabilities.
- Agricultural production and agri-business activities, like an Agri-Hub to be preserved or initiated where possible.
- Encourage mixed use development along activity corridors and around activity nodes
- Upgrade of Intersections at the train stations since accident rates are high according to the status quo analysis.
- Upgrade of mixed use nodes that allow for better accessibility, parking and landscaping- public realm upgrades.
16.6 FUNCTIONAL AREA 7: SHALLCROSS

Shallcross functional area is mainly residential in nature with distinguishing types of residential units, these include medium to high residential and lower income houses and a mix of informal settlements with social and commercial facilities across Shallcross. This functional area is unique in that the northern portion falls in the Inner West Town Planning Scheme area and the southern portion falls within the Central Town Planning Scheme area. The portion that falls within the Inner West Scheme is zoned according to the Shallcross zoning.

Shallcross functional area is accessed via the M1 (Higginson highway) which is also a public transport route. Shallcross and Klaarwater roads as well as Marton Drive serve as secondary access routes. Two separate railway lines traverse both the north and south of Shallcross study area with the inclusion of two railway stations (Shallcross and Crossmoore).

Key Interventions and LED Opportunities:

- Prioritising proposed housing projects and formalisation of all informal settlements.
- Upgrading and extending internal roads.
- Pockets of environmentally sensitive land need to be conserved.
- Agricultural production and agri-business activities, like an Agri-Hub to be preserved or initiated where possible.

16.7 FUNCTIONAL AREA 8: DEMAT ROAD

The Demat Road Functional area has a residential character. This functional area falls within the Welbedagt zoning area. Currently this area is accessed via Demat Road (Class 4). However there is a proposed Class 2 Road that joins Higginson Highway in the North, traverses the functional area and adjoins Mangosuthu Highway in the South (outside the study area) and connects this functional area to areas like Umlazi and Ehlanzeni.

Key Interventions and LED Opportunities:

- Focus in this functional area will be on promoting residential densification.
- Commercial and mixed use activities will be promoted on the north end of the functional area as well as proposed commercial activity in the south end.

16.8 FUNCTIONAL AREA 9: ST WENDOLINS

This functional area is predominantly residential in character, with portions of commercial and mixed use activity. This functional area falls within the Pinetown zoning area, with the southern end falling within the Welbedagt zoning. Richmond Road (M1) (Class 2) borders the Western boundary and bisects the area. Hans Dettman: P455 (M34) (Class 2) borders the eastern boundary. St Wendolins road (M42) (Class 4) traverses the northern portion and adjoins Wiltshire road and Richmond Road to the West. Ngena Road takes direct access of. Westmead is bordered by the N3 freeway leading to Gauteng, the M 13 leading to Kloof and the M19 leading to the South Coast.

Key Interventions and LED Opportunities:

Focus in this functional area will be on promoting residential densification wherever possible. Pockets of environmentally sensitive land need to be conserved and programmes aimed at identification of these areas.
17 FAP DEVELOPMENT GUIDELINES

17.1 LAND USE OBJECTIVES

- To designate desirable land uses and provide clarity on what may or may not occur on a property, and what may be considered at the discretion of the municipality
- To promote the certainty of land use which protects property values and creates investor confidence
- To promote and protect the amenity within areas and neighbourhoods
- To resolve conflict between different land uses, and to control negative externalities
- To enable the coordinated and efficient use of land
- To promote the economy
- To protect natural resources (ecosystem services), including agricultural resources (high potential agricultural land)
- To protect unique areas or features such as cultural resources and places of religious and cultural significance
- To manage land generally, including change of land.
- To ensure the retention of land for future uses the need for location and extent of which is not presently certain.

17.2 DEVELOPMENT GUIDELINES

Figure 35: Development Guidelines
17.2.1 Sustainable Residential Development

- Prioritise walking, cycling and public transport, and minimise the need to use cars;
- Deliver a quality of life which residents and visitors are entitled to expect, in terms of amenity, safety and convenience;
- Provide a good range of community and support facilities, where and when they are needed and that are easily accessible;
- Present an attractive, well-maintained appearance, with a distinct sense of place and a quality public realm that is easily maintained;
- Are easy to access for all and to find one’s way around;
- Promote the efficient use of land and of energy, and minimise greenhouse gas emissions;
- Provide a mix of land uses to minimise transport demand;
- Promote social integration and provide accommodation for a diverse range of household types and age groups;
- Enhance and protect the green infrastructure and biodiversity; and
- Enhance and protect the built and natural heritage.

17.2.2 Integrated Street Network

- The provision of well-designed on-street parking bays where the road width is in excess of 8.5m for 1 lane traffic in a two way street and where the road width is in excess of 14.5m for a two traffic in a two way street and not in close proximity to any major intersections;
- The provision of well-designed pedestrian sideways; and
- Enforcement of speed limits on local roads.

17.2.3 Built Form

- Building design within the nodes should promote and encourage passive surveillance through reduced setback lines.
- Buildings are to be street facing to increase surveillance on public and semi-private spaces especially within the nodes.
- Mixed-use buildings where commercial activities occur on the ground floor and residential uses on the upper floors should be encouraged within the nodes and in zones where commercial activities are allowed.
- Design of buildings should contribute to regeneration of area.
- Buildings should be orientated appropriately to allow for natural lighting through windows and other openings.
- Buildings and public spaces should be designed at a human scale to promote intimacy between users and the built environment.

17.2.4 Pedestrian Prioritisation

- Sidewalks should be paved with appropriate material to allow for safe and ease of movement.
- Pedestrian crossings are to be clearly marked to encourage pedestrians to cross the street at such designated pedestrian crossings.
- Strategic and effective use of barriers and bollards, especially need transport facilities and commercial activities.

17.2.5 Public Spaces and Public Realm

- Landscaping is to be done in such a way as to prevent pedestrians from crossing the streets at random points.
- Landscaping should be carried out in a way which does not obstruct sightlines.
- Public open spaces should be designed to promote interaction by clustering outdoor elements in an appropriate manner. This increases visibility and consciousness of being in a public space.
- Opaque and long fencing should be avoided unless for land uses requiring such special privacy requirements.

17.2.6 Informal Trading
- Informal traders are to operate only from permanently erected shelters erected in designated zones.
- These trader zones are to be located in nodal areas, mainly along main streets and public transport points and areas associated with high pedestrian flows.

17.2.7 Maintenance and Management
- Proposed storm-water drainages should be well-maintained to avoid deterioration of roads.
- All nodal area roads should be maintained, upgraded and rehabilitated to promote better mobility and attract investment opportunities in the town.
- Public areas have to be adequately maintained to make them attractive for use.
Figure 36: Inner West Scheme
17.3 GENERAL COMMENTS ON THE SCHEME

- Currently the LFTEA areas are not included in the Scheme document.
- The Inner West Scheme needs to set a clear distinction between land uses and zones. i.e. Section 4 of the scheme identifies chalet development as a zone instead of a land use that is permitted under certain zones.
- The scheme has a high number of zones which could be combined to make the scheme more user friendly to the general public. Zones which can be combined include the following:
  - a) Residential zones
  - b) Education and place of public assembly
- The terms used on the scheme map and clauses i.e. Environmental Protection Reserve (Marianhill zoning) is indicated on map and referred to as Environmental Conservation Reserve within the clauses.
- For the LFTEA areas, a broad range of zones have been identified and need to be refined together with Land Use Management Branch.
- Individual areas proposed for rezoning have been identified as part of this document.
### Table 28: Generic Land Use Controls

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18 KEY NODAL AREAS

18.1 Functional Area 2: Tshelimyana

The Tshelimnyama functional area is situated in the west and has a residential character with pockets of mixed use and commercial activity.

18.1.1 Composition

This functional region is composed of the following suburbs:

Southern portion of Tollgate South, Kwalinda, Emansenseni -A, Angola Block E, Cutshwayo, Dassenhoek, Kwandengezi-A, Lusaka Block-D, Mozambique-B, Namibia-C, Coffe Farm, Zilweleni, Birchwood Park, a portion of Marian Park Madiba Valley, Mpola, Sinqobile and Thornwood.

18.1.2 Accessibility

The main accessible routes of this functional area are the MR559 route, which is also referred to as Milkway and the southern portion is accessed by the Mr518 route. The added advantage of this area is the Railway line which traverses and bisects this area and is composed of at least 4 train stations: Kwandengezi Station (north west), Dassenhoek Station, Sithundu Hills Station and Thornwood Station (south east).

18.1.3 Zoning

This functional area is composed of various area zonings which form part of the Consolidated Inner West Scheme and includes:

Mazakhele, Kwandengezi, Mpola, Tshelimnyama, Madiba Valley, Bhekisizwe, Sandton Phase 1, Tshelimnyana Phase 1 & 2, Pinetown and Thornwood Zoning (see map 38) The areas that appear white on the map are presently LFTEA areas and are predominantly residential in character.
Figure 37: Aerial view of Milkyway Section 1
Figure 39: Aerial view of Milkyway Section 2
Figure 40: Concept Plan Milkyway Section 2
18.2 Functional Area 10: Old Richmond Road

Old Richmond Road functional area is predominantly residential with a mix of commercial and mixed use activities.

18.2.1 Composition

Functional area 10 is composed of: portions of Mariaan Park, Nagina, Sithundu Hills, Pineview, Luganda, Regency Park, Nsiswakazi, Marianridge, Marianheights and Luganda.

18.2.2 Accessibility

Area is accessed via Milkyway (Class 2) in the north east, Old Richmond Road (Class 3) east to west and Intake Road in the South (Class4). The railway line borders the Northern portion of the functional area and has two train stations: Marianhill station (north east) and Thornwood station (north).

18.2.3 Zoning

This area falls completely under the Pinetown Zoning and includes

Key Interventions and LED Opportunities:

- Focus in this functional area will be on promoting residential densification and student accommodation.
- Promote commercial and mixed use activities on Old Richmond Road, to enhance Local Economic Development and promote employment opportunities.
- Upgrade Node- public realm upgrades. Taxi Rank Upgrade as well as landscaping. Make the centre more accessible, create defined parking areas.
- Provision of infrastructure services for the proposed light industrial services. Located along the Old Richmond Road is an advantage.
- Establishment of recreational facilities such as multi-purpose sport fields

Old Richmond Road

- Upgrading- Sidewalks and lighting to improve security
- Upgrading of intersections at Old Richmond Road, Chestnut Crescent and Acorn Road, as well as the intersection between Richmond Road and Old Richmond Road.
- Green areas: Parks, piazza etc- beautification.
- Scheme amendments to include service industry, commercial and administration zones or to rezone portions of land from their current to proposed zones.
- Densification for housing at approximately 40 dwelling units per hectare.
- Access routes proposed to create accessibility or ease of access.
- Upgrading of Infrastructure- increases capacity required for water, sanitation and electricity
Map 58: Functional Area 10 Existing Zone
Map 60: Functional Area 10 Concept
Figure 41: Proposed Land Use Old Richmond Road
Figure 42: Concept Old Richmond Road
Map 61: Functional Area 10 Rezoning
Map 62: Old Richmond road Aerial Illustration
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**Map Reference**

**Additional notes**

1. General Residential 2
   - No actual need to change the zoning except the surrounding properties if rezoned will have a more commercial/industrial character.

9. Public Open Space
   - Currently ShishNyama-proposed park type activities that do not affect the sensitive ecosystems.

6 & 7 Public Open Space and Administration
   - Currently nothing on the properties however there is a need for increasing residential density and providing student accommodation.

The above is an indication of the broad Land Use Management guidelines envisaged for the broader Pinetown South Area, as well as an illustration and explanation of the key functional intervention areas which includes Functional area 2 (Milkyway) and Functional area 10 (old Richmond Road).
SECTION 5: IMPLEMENTATION FRAMEWORK AND BUDGETING

This section of the report is focused on developing programmatic strategies towards not only the implementation of proposed interventions within Pinetown South, but also the sustainable future functioning of the area. The key focus of this phase would be the development of an implementation programme and a funding strategy.

19 PRIORITY PROJECT IDENTIFICATION

The Development Plan is translated into specifically defined actions which are required to assist the Municipality in initiating the development process in Pinetown South. These actions take the form of projects with catalytic effects in an attempt to further stimulate public and private sector investment towards building a self-sustaining regenerative momentum.

The objectives of the identification of catalytic projects and their successful implementation thereof are intended to bring about economic and social development of the people of Pinetown South and its hinterland. The physical improvements resultant of these projects are intended to create an environment that is more conducive to everyday living, local investment and encouraging residents to appreciate and discourage migration from the settlement.

A number of catalytic projects (see table 29- project list) have been identified that will initiate the development process for Pinetown South. These projects can be implemented in any order as and when funding is secured, land acquisition processes completed and legal procedures finalised. By their nature, they are independent projects and do not rely on the completion of others before they can be started.

19.1 PROJECT TYPES

In order to define the specific role of the Municipality in the design and implementation of each project, three categories of action have been defined. These are for the Municipality to:

- design and deliver;
- plan and promote; or
- Illustrate and facilitate.

A. Design and Deliver Projects

These are projects that the Municipality initiate, fund, design, implement and project manage.

Projects under this category include:

- Preliminary bulk service
- Upgrading of bulk service such as: Water; Storm water and Sanitation
- Public realm upgrading
- Formulation of planning strategy

B. Plan and Promote Projects

These projects are those that are not necessarily directly funded or implemented by the Municipality but are to be planned and promoted to secure external funding. The Municipal role is also to ensure that these projects
projects are implemented in accordance with the approved Development Plan. Projects under this category include:

- Formulation of other planning projects which deal with: Scale, Commercial, Residential densification
- In-situ-upgrading on existing residential sites
- Provision of Water Bourne Sanitation to all areas
- Evaluation and upgrading of transport network

C. Illustrate and Facilitate Projects

These projects are not funded or implemented by the Municipality. Rather, they are planned, funded and implemented by the land owner or private sector. The Municipality’s role is to illustrate and facilitate the opportunities for the site and assist the land owner to remove restrictions, obtain rights and facilitate the development of the project as quickly as possible. Projects under this category can only be identified once the settlement development process commences.

It should be noted that although the above priority projects have been identified others may be added over time and some may change to different categories.

19.2 PHASED SEQUENCE OF DEVELOPMENT

An overall phasing plan for the development of Pinetown South is essential to provide direction over the long term (see table 29). The basis of the phasing would be to maximize the use of existing infrastructure and to adequately prepare for significant capital expenditure in the settlement. The main factors influencing the phasing of development will be:

- capacity of existing infrastructure and social facilities
- cost of new infrastructure as part of the development of the settlement
- access to public transportation

Annexure A is a schedule of prioritised projects with associated phasing and cost implications.

19.3 IMPLEMENTATION ACTION PLAN

In this part of the report, a plan is outlined to inform the short, medium and long terms priorities to the overall framework as well as the individual precincts will be proposed. Critical phasing and sequencing of actions documented and mapped for clear communication will be provided and critical project dependencies and key success factors identified. The implementation phases of the Pinetown South Precinct Plan may follow the stages outlined below.

19.4 RELOCATION STRATEGY

This strategy is intended to ensure that a smooth process of relocation of communities from their current places of abode to the earmarked Pinetown South Settlement. The relocation strategy would include institutional arrangements to facilitate the relocation process, negotiations with the affected communities, any applicable compensation, and the implications and conditions for those unwilling to relocate to the new settlement.

19.5 INSTITUTIONAL DEVELOPMENT STRATEGY

In order to facilitate the implementation of the proposed development strategies, proper and functional institutional arrangements will have to be put in place to oversee and steer the various processes. Below are the stages and ideas which can be employed to this effect.
19.5.1 **Stage 1: Establish a Development Coordination Forum**

The first step in initiating the implementation process will be the establishment of a Development Coordination Forum, spearheaded by the EThekwini Municipality.

This body is not responsible for project implementation but is instead responsible for overseeing the implementation process and coordinating the actions of all role-players active in the development of Pinetown South.

The EThekwini Municipality will remain responsible for all development within Pinetown South and is the sole custodian of the settlement’s Development Plan. The role of the Development Coordination Forum is to ensure that all development taking place within the settlement is in accordance with the Development Plan.

As such the Forum would be chaired by a Municipal official but would have as its’ members the Development Agency, the Business Improvement District Association, the Technical Task Team, the marketing team etc. Private developers, service providers such as Eskom, Transnet and Telkom and officials from various municipal departments and other spheres of government would be required to make representations on the Forum on an ad-hoc basis as and when needed.

Generally councillors would not sit on this Forum but would regulate its activities through its requests for resolution approval and report backs to Full Council, the Executive Committee or Portfolio Committees.

The Development Coordination Forum should meet on a regular basis, act as the central collation point for all documents and instructions and should keep and distribute minutes of all decisions taken. Any expenditure incurred by it would have to be done in accordance with the normal procurement policies of the Municipality.

It is also recommended that at least some level of decision making responsibility is delegated to the Forum by the Municipality. This is to increase efficiency, reduce bureaucracy, streamline processes and be able to act speedily and timeously.

19.5.2 **Stage 2: Prepare and Adopt Appropriate Development Control Policies**

As many of the actions and developments taking place in the settlement will be undertaken by the public sector, it is important for the Municipality to take ownership and appropriately manage these actions to ensure that they comply with their overall vision of the settlement.

Whilst the Municipality has control over these actions through its by-laws, building control and settlement planning processes, it will be necessary to adopt additional policies specifically tailored to Pinetown South. The intention is to ensure that sector developments are of an exceptionally high standard so that over time the collective actions of individual developers translate into a higher standard of development and an overall improvement in the appearance of the settlement in terms of standards and appearance. This will ensure that the development does not detract from the vision of the Municipality.

19.5.3 **Stage 3: Prepare and Adopt Guiding Plans**

To ensure the effectiveness of the Pinetown South Development Coordination Forum the Development Agency need to ensure relevant, efficient regeneration of the CBD actually takes place the Municipality should prepare and adopt the following plans:

- A Management Plan;
- A Financial Plan; and
- A Communication Plan.

A. **The Management Plan**

It has become increasingly evident that Management Plans are crucial to the successful implementation of development projects. The Municipality has a central role to play in shaping the way in which this occurs as well as providing the political and administrative climate to facilitate the process.
It is therefore vital that a Management Plan is prepared and adopted by the Municipality through the Pinetown South Development Coordination Forum, that provides the basis for managing the development process and ensuring the vision of the Development Plan is adhered to. A Management Plan would include:

- an outline of the required management structure;
- chains of command and lines of communication, both internal and external;
- decision making powers and delegated authorities;
- monitoring, evaluation and reviewing requirements;
- methods of coordinating the activities of Municipal departments, services providers, other government departments, developers, etc.
- methods to ensure alignment with the IDP and other municipal programmes and strategic initiatives;
- a performance management system;
- reporting structures; and
- financial aspects; and
- Communication aspects.

The financial and communication aspects of the Management Plan are worthy of more detailed planning. These are discussed below.

**B. The Financial Plan**

The Financial Plan establishes the feasibility and procedures for managing and implementing the Pinetown South Development Plan. This Plan should include:

- the legislative framework;
- income (grants, subsidies, tariffs, service charges etc);
- expenditure (operating and capital);
- investments, loans and losses;
- assets and liabilities;
- costs of services;
- potential sources of income;
- potential risks;
- potential benefits;
- a capital investment programme; and
- Business plans for specific projects.

The components of the Financial Plan should be packaged in such a way that they can be seamlessly incorporated into the Municipal IDP and budget. The incorporation of the budget and the IDP will ensure that projects identified in the IDP are actualised and people’s lives are improved.

**C. The Communication Plan**

Communication is concerned with both internal and external communication and the Communication Plan will need to address both aspects.

Internal communication is concerned with ensuring that organisational harmony for those involved in the management and implementation of the Pinetown South Development Plan is achieved. The Internal Communication Plan will ensure staff is kept informed of project progress and decisions taken, information is disseminated timeously, awareness of duties and responsibilities is created, problems are detected and dealt with, all of which creates a culture where informed decisions are taken and quality is improved.

External communication is more concerned with marketing, promotion and garnering support. This is to attract investment, limit opposition and boost confidence in the work of the Municipality.
19.6 FUNDING STRATEGY

A funding strategy is a plan that sets out the funding need, identifies actions timescales and possible funding resources to meet the developmental needs. The strategy is to enable the EThekwini Municipality to identify prospective funding sources and also motivate for more funding from existing funders.

This strategy makes suggestions to who could be identified as potential funders based on project type, when the funding is likely to be needed based of the priority and phasing, and lastly, how funding can be secured for the proposed projects identified. The funding strategy is only a guide to funding possibilities and not prescriptive. The EThekwini Municipality has discretion to secure funding from sources it deems fit.

19.7 POTENTIAL FUNDING SOURCES

Funding may be sourced from varies entities depending on the project nature. For example, road upgrades or maintenance would largely attract funding from the Department of Transport or the Municipal Infrastructure Grant.

A. Who are the Potential Funders?

All government departments receive funding annually to spend on projects that are in line with their core functions. Medium Term Expenditure Framework is a modern ideal tool of budgeting that seeks to translate government policies and plans into an expenditure programme within a coherent multi-year macro framework.

Municipalities need to ensure that all the projects that need to be funded are listed in order of priority in the business plan and development frameworks such as (IDP, SDF and Precinct Plans) to allow for the departments to fund the project. Table 4 is a schedule of types of projects and prospective funders.

With regard to the projects identified, prospective funders could include:

- Department of Rural Development and Land Affairs
- Department of Co-operative Governance and Traditional Affairs
- Department Economic Development
- Department of Social Development
- Department Human Settlements
- Department of Transport
- Department of Agriculture
- Department of Arts & Culture
- Department of Public Works
- Department Health Unit

<table>
<thead>
<tr>
<th>Table 29: Funding Agents</th>
<th>Examples of Project Funded by Departments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Municipal Infrastructure Grant (MIG)</td>
<td>• Infrastructure</td>
</tr>
</tbody>
</table>
| 2. Department of Rural Development and Land Affairs | • Land Acquisition  
• Settlement Planning  
• Schemes  
• Precinct Plans |
| 3. Department of Co-operative Governance and Traditional Affairs | • Disaster Management Strategy  
• Providing Technical Support to Municipalities  
• Provision of Thusong/ MPCC centre |
### Funding Agent

| Department of Economic Development and Tourism | Trader Facilities | SMME projects | Parks |
| Department of Social Development and Welfare | Orphanages | Pension Collection Points |
| Department of Agriculture | Fencing Projects | Poultry Projects | Agricultural Massification | Assistance with local Co-operatives |
| Department of Health | Provision of Health Care Facilities |
| Department of Transport | Road Construction | Road Maintenance (Gravelling) |
| Department of Public Works | Construction of Public Facilities | Maintenance of Public Facilities |
| Department of Arts & Culture | Libraries | Museums |
| Department of Human Settlements | Low Cost Housing | Rural Housing | Gap Housing |

Source: Black Balance Projects, 2013

### 19.8 WHEN TO SECURE FUNDING

It is commonly recognised that better planning helps to avoid wasted time and resources. The development of a fundraising strategy should enable the Municipality to ensure that there is a shared understanding of the aims and priorities for the Municipality.

Municipalities need to prioritise their project list in terms of importance. The phasing of a project is determined by the scope of the project. The bigger the project, the more phases it will be.

In an attempt to secure funding, the Municipality would have to prepare a business plan which contains the project duration and phasing of such. This will assist possible funders to plan as such should they wish to provide funding.

**Benefits of phasing projects include:**

- ensuring project control;
- less capital or budget is used as opposed to financing a complete project;
- limits corruption as a progress report is required after every phase and if there are any irregularities, they can be addressed immediately.

### 19.9 HOW TO SECURE FUNDING

For prospective funders to be willing to secure funding, the EThekwini Municipality will have to be able to motivate strongly for such funding. A business plan needs to be put in place which will contain the projects details including milestones and the cost per milestone, as well as monitoring systems.

The Pinetown South Local Area Plan can be used to secure funding for the projects once the Report is approved by Council. It is also of importance that the identified projects be included as part of the Capital Projects in the EThekwini Municipality IDP and SDP to strengthen the prospect of securing funding given the legal status for these documents.
The development of uMlazi will not occur instantaneously as many of the components will only be addressed in the medium to long term. Some activities rely on the completion of others and will add further time to completion.

20 CONCLUSION

Development will also not occur without disturbing the existing situation. In fact the scale of proposed change is a challenge not only to identifying sufficient budget but in conducting development while creating as little disturbance to current residents and informal traders who currently trade on exceedingly thin margins. A good communication strategy is essential, together with an inclusive and multilayered participation structure.
Table 30: Pinetown South Project List

<table>
<thead>
<tr>
<th>No.</th>
<th>Area/ Road</th>
<th>Project Name</th>
<th>Description</th>
<th>Public/ Private</th>
<th>Total Budget</th>
<th>Funding source</th>
<th>SHORT</th>
<th>MEDIUM</th>
<th>LONG</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Dassenhoek Rural</td>
<td>New Road Link through Dassenhoek Rural</td>
<td>New class 4 links between Milky Way connecting to Old Richmond Road</td>
<td>Public</td>
<td>R 35 688 100.00</td>
<td>ETA</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Bhekukutulu</td>
<td>New Road Link through Bhekukutulu</td>
<td>New class 4 links between Milky Way connecting to Old Richmond Road</td>
<td>Public</td>
<td>R 46 540 900.00</td>
<td>ETA</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Thornwood</td>
<td>New Road Link through Thornwood</td>
<td>New class 4 links between Milky Way connecting to Old Richmond Road</td>
<td>Public</td>
<td>R 33 807 900.00</td>
<td>ETA</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Umhlatuzana Road</td>
<td>Upgrade of Umhlatuzana Road</td>
<td>Upgrade of Umhlatuzana Road from Abbot Francis Road to Mr559 Route</td>
<td>Public</td>
<td>R 9 000 000.00</td>
<td>ETA</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Old Richmond Road</td>
<td>New Pedestrian Bridge link from Old Richmond Rd to Chestnut Cr</td>
<td>From Old Richmond Road to Mercury Crescent (bottom end adjoining Milkyway)</td>
<td>Public</td>
<td>R 3 367 700.00</td>
<td>ETA</td>
<td></td>
<td></td>
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<tr>
<td>6</td>
<td>Old Richmond Road</td>
<td>Upgrading of MRS18</td>
<td>Upgrading of MRS18 from Class 4 to a Class 3 road</td>
<td>Public</td>
<td>R 81 158 000.00</td>
<td>DOT</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>7</td>
<td>Hans Dettman</td>
<td>Traffic Evaluation and Upgrading of Intersections along M1 and Hans Dettman</td>
<td>Upgrading of intersection to reduce traffic incidents and to curb accident rate</td>
<td>Public</td>
<td>R 6 000 000.00</td>
<td>DOT</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Wiltshire</td>
<td>Traffic Evaluation and Upgrading of Intersections along M1 and Wiltshire</td>
<td>Upgrading of intersection to reduce traffic incidents and to curb accident rate</td>
<td>Public</td>
<td>R 6 000 000.00</td>
<td>DOT</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>9</td>
<td>Milky Way</td>
<td>Traffic Evaluation and Upgrading of Intersections along M1 and Milky Way</td>
<td>Upgrading of intersection to reduce traffic incidents and to curb accident rate</td>
<td>Public</td>
<td>R 6 000 000.00</td>
<td>DOT</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>10</td>
<td>Old Richmond Road</td>
<td>Traffic Evaluation and Upgrading of Intersections along M1 and Old Richmond Road</td>
<td>Upgrading of intersection to reduce traffic incidents and to curb accident rate</td>
<td>Public</td>
<td>R 6 000 000.00</td>
<td>DOT</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Milkyway and Old Richmond Rd</td>
<td>Development of Bus and Taxi stops along Old Richmond Road and Milkyway</td>
<td>Design and development of Bus stops and taxi drop off points along Old Richmond Road and Milkyway</td>
<td>Public</td>
<td>R 5 000 000.00</td>
<td>ETA</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Old Richmond Rd</td>
<td>Design and Implementation taxi Rank along Old Richmond Road</td>
<td>Development and design of new Taxi Rank along Old Richmond Road Node</td>
<td>Public</td>
<td>R 12 445 498.00</td>
<td>ETA</td>
<td></td>
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</tr>
<tr>
<td>13</td>
<td>Milky Way</td>
<td>Evaluate and upgrade facilities along Milkyway Taxi Rank</td>
<td>Formalisation and Development of Taxi Rank on Milkyway</td>
<td>Public</td>
<td>R 6 088 926.00</td>
<td>ETA</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>14</td>
<td>All areas</td>
<td>Upgrading of Water Treatment Works</td>
<td>General upgrading of all Water Treatment works</td>
<td>Public</td>
<td>TBD</td>
<td>TBD</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>15</td>
<td>Ward 15</td>
<td>Water Reticulation in Ward 15</td>
<td>Upgrading all of Ward 15 (Tsheliminyama area) from stand points to water reticulation to homestead</td>
<td>Public</td>
<td>TBD</td>
<td>TBD</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>16</td>
<td>Old Richmond Rd &amp; Milkyway- Ward 15</td>
<td>Stormwater Upgrading, along Old Richmond Road</td>
<td>Construction of Stormwater drains along Old Richmond Road, Milkyway and in Tsheliminyama</td>
<td>Public</td>
<td>TBD</td>
<td>TBD</td>
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<td></td>
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</tr>
<tr>
<td>17</td>
<td>Ward 15, Ward 72</td>
<td>Sanitation reticulation in Ward 15</td>
<td>Ward 15: Upgrading of VIP systems to waterborne sewerage systems</td>
<td>Public</td>
<td>TBD</td>
<td>TBD</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>18</td>
<td>All areas</td>
<td>Upgrading of Waste water Treatment Works</td>
<td>General upgrading of all Waste Water Treatment Works</td>
<td>Public</td>
<td>TBD</td>
<td>TBD</td>
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<tr>
<td>19</td>
<td>Old Richmond Rd &amp; Milkyway</td>
<td>Sidewalk Development along Old Richmond Road and Milkyway</td>
<td>Upgrading and development of Pedestrian Sidewalks on Old Richmond Road and Milkyway</td>
<td>Public</td>
<td>R 870 000.00</td>
<td>ETA</td>
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<tr>
<td>No.</td>
<td>Area/ Road</td>
<td>Project Name</td>
<td>Description</td>
<td>Public/ Private</td>
<td>Total Budget</td>
<td>Funding source</td>
<td>SHORT</td>
<td>MEDIUM</td>
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<tr>
<td>20</td>
<td>Ward 15</td>
<td>Development of existing Pedestrian pathways within Ward 15</td>
<td>Development of existing Pedestrian pathways within Ward 15</td>
<td>Public</td>
<td>R 2 000 000.00</td>
<td>ETA</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>Milkyway</td>
<td>Park Regeneration along Milkyway</td>
<td>Improvement of Park on Milkyway</td>
<td>Public</td>
<td>R 4 500 000.00</td>
<td>EDU</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>22</td>
<td>Old Richmond Rd</td>
<td>New Park development along Old Richmond Road</td>
<td>Development of Park on Old Richmond Road</td>
<td>Public</td>
<td>R 2 400 000.00</td>
<td>EDU</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>Milkyway</td>
<td>Improved Lighting along Milkyway Taxi Rank</td>
<td>Improved lighting along Milkyway Taxi Rank (regeneration)</td>
<td>Public</td>
<td>TBD</td>
<td>EDU</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>24</td>
<td>Old Richmond Rd</td>
<td>Improved Lighting along Old Richmond Road Taxi Rank</td>
<td>Improved lighting along Old Richmond Road Taxi Rank (new development)</td>
<td>Public</td>
<td>TBD</td>
<td>EDU</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>Old Richmond Rd</td>
<td>Formalise informal Trade area within Old Richmond Road Commercial area</td>
<td>Development of Informal Trade area and Market area within Old Richmond Road</td>
<td>Public</td>
<td>R 4 000 000.00</td>
<td>EDU</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>26</td>
<td>Ward 16</td>
<td>Development of Intermodal Hub within Ward 16</td>
<td>Development of Intermodal Hub within Ward 16</td>
<td>Public Private</td>
<td>R 5 000 000.00</td>
<td>ETA</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>27</td>
<td>Ward 63</td>
<td>Development of Intermodal Hub in Ward 63</td>
<td>Development of Intermodal Hub in Ward 63</td>
<td>Public Private</td>
<td>R 6 400 000.00</td>
<td>ETA</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>28</td>
<td>All Train Stations</td>
<td>Improved Lighting at all Train Stations</td>
<td>All trains stations to be provided with lighting to enhance security</td>
<td>Public</td>
<td>TBD</td>
<td>EDU</td>
<td></td>
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</tr>
</tbody>
</table>

**HOUSING**

<table>
<thead>
<tr>
<th>No.</th>
<th>Area/ Road</th>
<th>Project Name</th>
<th>Description</th>
<th>Public/ Private</th>
<th>Total Budget</th>
<th>Funding source</th>
<th>SHORT</th>
<th>MEDIUM</th>
<th>LONG</th>
</tr>
</thead>
<tbody>
<tr>
<td>29</td>
<td>Milkyway</td>
<td>Medium Density Housing along Milkyway</td>
<td>Housing development on Milkyway - 3 storeys, medium density (approximately 9900m²)</td>
<td>Public</td>
<td>TBD</td>
<td>DHS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30</td>
<td>Old Richmond Road</td>
<td>Relocation of informal Settlement along Old Richmond Road</td>
<td>Housing Plan to be updated to note that the current area of the informal settlement along Old Richmond Road has significantly increased, and relocation of these people residing along the railway line is required.</td>
<td>Public</td>
<td>TBD</td>
<td>DHS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>31</td>
<td>Ward 15</td>
<td>Ward 15 in-situ Housing Upgrade</td>
<td>Insitu upgrade within the Tshelimnyama area</td>
<td>Public</td>
<td>TBD</td>
<td>DHS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>32</td>
<td>Demat, St Wendolins &amp; Savanna Park</td>
<td>Medium Density Housing within Ward</td>
<td>Vacant land available within these areas- To be confirmed</td>
<td>Public</td>
<td>TBD</td>
<td>DHS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>33</td>
<td>Old Richmond Road</td>
<td>High Density Housing along Old Richmond Road</td>
<td>Housing Development on Old Richmond Road- approximately 6 ha</td>
<td>Public</td>
<td>TBD</td>
<td>DHS</td>
<td></td>
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</tbody>
</table>

**PLANNING**

<table>
<thead>
<tr>
<th>No.</th>
<th>Area/ Road</th>
<th>Project Name</th>
<th>Description</th>
<th>Public/ Private</th>
<th>Total Budget</th>
<th>Funding source</th>
<th>SHORT</th>
<th>MEDIUM</th>
<th>LONG</th>
</tr>
</thead>
<tbody>
<tr>
<td>34</td>
<td>Old Richmond Road</td>
<td>Scheme Amendments along Old Richmond Road</td>
<td>In order to promote the Old Richmond Node as a tertiary node, various erven along Old Richmond road and surrounds will need to be rezoned.</td>
<td>Public Private</td>
<td>Nil</td>
<td>LUM</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>35</td>
<td>Milkyway</td>
<td>Zoning of LFTEA along Milkyway</td>
<td>Proposed concept plan along Milkyway suggests zoning which blends in with the Pinetown Scheme</td>
<td>Public</td>
<td>Nil</td>
<td>LUM</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>36</td>
<td>Motala Farm</td>
<td>Enforcement [LUMS]along Motala Farm</td>
<td>Motala farm is being populated with informal settlements and will need to be rectified to promote orderly residential development</td>
<td>Public</td>
<td>Nil</td>
<td>LUM</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>37</td>
<td>Ward 72</td>
<td>Enforcement [LUMS]within Ward 72</td>
<td>Illegal occupation of land within Ward 72- Demat Road</td>
<td>Public</td>
<td>Nil</td>
<td>LUM</td>
<td></td>
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</tbody>
</table>

**ENVIRONMENT**

<table>
<thead>
<tr>
<th>No.</th>
<th>Area/ Road</th>
<th>Project Name</th>
<th>Description</th>
<th>Public/ Private</th>
<th>Total Budget</th>
<th>Funding source</th>
<th>SHORT</th>
<th>MEDIUM</th>
<th>LONG</th>
</tr>
</thead>
<tbody>
<tr>
<td>38</td>
<td>All River Systems</td>
<td>Rehabilitate all existing Water courses</td>
<td>Rehabilitate all watercourses especially along Wastewater treatment works since the health of the rivers are adversely affected in these particular areas</td>
<td>Public</td>
<td>R 1 690 000.00</td>
<td>EPCPD</td>
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</tr>
</tbody>
</table>

**OTHER**
<table>
<thead>
<tr>
<th>No.</th>
<th>Area/ Road</th>
<th>Project Name</th>
<th>Description</th>
<th>Public/ Private</th>
<th>Total Budget</th>
<th>Funding source</th>
<th>Short</th>
<th>Medium</th>
<th>Long</th>
</tr>
</thead>
<tbody>
<tr>
<td>39</td>
<td>Milkyway</td>
<td>Development of a Commercial centre on ground level and residential units on 2nd and 3rd level along Milkyway</td>
<td>Development of a Commercial centre on ground level and residential units on 2nd and 3rd level along Milkyway</td>
<td>Public Private</td>
<td>R 3 100 000.00</td>
<td>EDU</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>40</td>
<td>Milkyway</td>
<td>Evaluate and Develop Agri-Hub along Milkyway</td>
<td>Develop an Agri-hub along Milkyway</td>
<td>Public Private</td>
<td>R 2 000 000.00</td>
<td>EDU</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>41</td>
<td>Phakathi</td>
<td>Upgrade of Old Age Centre</td>
<td>Upgrade Old Age Centre to include skills development workshop</td>
<td>Public Private</td>
<td>TBD</td>
<td>DSDW</td>
<td></td>
<td></td>
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<tr>
<td>42</td>
<td>Milkyway</td>
<td>Evaluate and Develop Adult Skills Centre along Milkyway</td>
<td>Develop a Skills development Centre along Milkyway</td>
<td>Public Private</td>
<td>R 7 000 000.00</td>
<td>EDU</td>
<td></td>
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<tr>
<td>43</td>
<td>Ndwandwe</td>
<td>Community Centre Regeneration</td>
<td>Develop a Youth facility and Community Centre along Ndwandwe Road</td>
<td>Public Private</td>
<td>R 5 500 000.00</td>
<td>DSDW</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>
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